TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 160-9071-1

Job Description: START Site in New Mexico

For:
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Attention: Mrs. Kristie Warr

Approved for release.
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2/12/2015 12:08 PM

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02/12/2015
Revision: 1

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Louisiana Lab Certification ID (Non-Potable, Solid/Haz. Material): 106151
Florida Lab Certification ID (Drinking Water): E87689.

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Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC exceeds the control limits.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F1	MS and/or MSD Recovery exceeds the control limits
F2	MS/MSD RPD exceeds control limits

General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
B	Compound was found in the blank and sample.

Rad

Qualifier	Qualifier Description
G	The Sample MDC is greater than the requested RL.
U	Result is less than the sample detection limit.
*	LCS or LCSD exceeds the control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

CASE NARRATIVE

Client: Weston Solutions, Inc.

Project: START Site in New Mexico

Report Number: 160-9071-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

TestAmerica St. Louis attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

Revision 1: Client email was attached for sample ID change request. The case narrative was revised for uranium CCV to indicate that the sample was below the reporting limit for uranium, not undetected. Narrative statement was added for reduction in prep volume of dissolved metals due to insufficient sample volume. Corrective Action Report has been provided to address the undocumented reduced prep volume for Hg.

RECEIPT

The sample was received on 10/28/2014 9:10 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.1º C.

Except:
Client requested that sample ID SMC9A-20141027-21 be changed to SMC-09-20141027-21 (160-9071-1) by email request on 11/13/14.

DISSOLVED METALS (ICP)

Sample SMC-09-20141027-21 (160-9071-1) was analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 11/17/2014 and analyzed on 11/18/2014.

Analytical Batch 158045

Elevated reporting limits are provided for the following sample(s) due to insufficient sample volume for inital preparation:
SMC-09-20141027-21 (160-9071-1).

The following sample(s) was diluted due to high concentrations of salts which can cause internal standard and instrument QC failure:
SMC-09-20141027-21 (160-9071-1). Elevated reporting limits (RLs) are provided.

Copper, Selenium and Uranium were detected in method blank MB 160-157443/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged.

Due to the high concentration of calcium and silicon in the matrix spike / matrix spike duplicate (MS/MSD) for could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL METALS (ICP)
Sample SMC-09-20141027-21 (160-9071-1) was analyzed for total metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 11/05/2014 and analyzed on 11/13/2014.

Analytical Batch 156822
The following sample(s) was diluted to bring the concentration of target analytes within the calibration range: (160-9071-1 MS), (160-9071-1 MSD), (160-9071-1 SD), SMC-09-20141027-21 (160-9071-1). Elevated reporting limits (RLs) are provided.

Calcium, Lead, Uranium and Zinc were detected in method blank MB 160-154334/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged.

The continuing calibration verification (CCV) recovered above the upper control limit for arsenic, cadmium, cobalt, chromium, copper, nickel, phosphorus, lead, antimony, selenium, tin, thallium, uranium, and zinc. The only samples associated with this CCV were the method blank and LCS which both recovered within their acceptable QC criteria indicating no adverse affect from the potential high bias; therefore, the data have been reported: (CCV 160-156822/83).

The continuing calibration verification (CCV) recovered above the upper control limit for chromium and uranium. The samples associated with this CCV were not detected above the reporting limit for the affected analytes; therefore, the data have been reported: (CCV 160-156822/95).

The continuing calibration verification (CCV) recovered above the upper control limit for chromium, lead, and uranium. The samples associated with this CCV were not detected above the reporting limit for the affected analytes; therefore, the data have been reported: (CCV 160-156822/107).

Due to the high concentration of calcium the matrix spike / matrix spike duplicate (MS/MSD) could not be evaluated for accuracy and precision. The presence of the '4' qualifier in the data indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount. The associated laboratory control sample (LCS) met acceptance criteria.

The matrix spike duplicate (MSD) recovery for thallium was outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

The matrix spike / matrix spike duplicate (MS/MSD) precision and recovery for uranium was outside control limits. Sample matrix interference is suspected because the precision of all other target analytes in the MS\MSD was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

DISSOLVED MERCURY (CVAA)
Sample SMC-09-20141027-21 (160-9071-1) was analyzed for dissolved mercury (CVAA) in accordance with EPA SW-846 Methods 7470A. The samples were prepared and analyzed on 11/07/2014.

No additional analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

TOTAL MERCURY
Sample SMC-09-20141027-21 (160-9071-1) was analyzed for total mercury in accordance with EPA SW-846 Methods 7470A. The samples were prepared and analyzed on 11/07/2014.

No additional analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

PH
Sample SMC-09-20141027-21 (160-9071-1) was analyzed for pH in accordance with EPA Method 150.1. The samples were analyzed on 10/28/2014.

The following samples were analyzed without a sample duplicate due to very limited sample volumes: SMC-09-20141027-21 (160-9071-1). No LCS duplicate was analyzed in the batch, due to analyst error. Analyst retraining on

Method(s) 150.1, 9040C: The following samples in pH batch 152486 were all received after hold time expired for pH analysis: SMC-09-20141027-21 (160-9071-1).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL DISSOLVED SOLIDS
Sample SMC-09-20141027-21 (160-9071-1) was analyzed for total dissolved solids in accordance with EPA Method 160.1. The samples were analyzed on 11/03/2014.

No additional analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

ANIONS

Sample SMC-09-20141027-21 (160-9071-1) was analyzed for anions in accordance with EPA Method 300.0. The samples were analyzed on 10/28/2014.

Analytical Batch 153094
The following samples were diluted to bring the concentration of target analytes within the calibration range: SMC-09-20141027-21 (160-9071-1). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ALKALINITY
Sample SMC-09-20141027-21 (160-9071-1) was analyzed for alkalinity in accordance with EPA Method 310.1. The samples were analyzed on 10/31/2014.

Analytical Batch 153305
The following samples are associated with a method blank (MB) that has a result above the reporting limit (RL): SMC-09-20141027-21 (160-9071-1). The DI water used for the MB was not added to the samples in the analysis. Thus, the samples were not affected by the elevated MB result.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GROSS ALPHA AND GROSS BETA RADIOACTIVITY
Sample SMC-09-20141027-21 (160-9071-1) was analyzed for Gross Alpha and Gross Beta Radioactivity in accordance with SW-846 Method 9310. The samples were prepared on 11/04/2014 and analyzed on 11/05/2014.

The gross alpha and gross beta detection goals were not met for the following samples due to a reduction of the samples size which can be attributed to high residual mass: SMC-09-20141027-21 (160-9071-1). Analytical results are reported with the detection limit achieved.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ISOTOPIC THORIUM (ALPHA SPECTROMETRY)
Sample SMC-09-20141027-21 (160-9071-1) was analyzed for Isotopic Thorium (Alpha Spectrometry) in accordance with DOE. The samples were prepared and analyzed on 11/07/2014.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP). A LCS/LCSD was performed instead.

The sample aliquot was reduced to 250 mL due to the sample being cloudy. The LCSD was cloudy after the being prepped for coprecipitation. The final resolve filter, once dried, appeared to contain a small amount of white powder.

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) spike recoveries were outside the upper control limit of 125% (177%/173%), indicating a potential positive bias for the analyte. This analyte was not observed above the reporting limit in the associated sample; therefore the sample data was not adversely affected by this excursion and will be reported: (LCS 160-154805/2-A), (LCSD 160-154805/3-A), (MB 160-154805/1-A), SMC-09-20141027-21 (160-9071-1).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ISOTOPIC URANIUM (ALPHA SPECTROMETRY)
Sample SMC-09-20141027-21 (160-9071-1) was analyzed for Isotopic Uranium (Alpha Spectrometry) in accordance with DOE. The samples were prepared on 11/03/2014 and analyzed on 11/04/2014.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with batch 153826. A LCS/LCSD was performed instead.

The sample aliquot was reduced to 250 mL due to the sample being cloudy.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Weston Solutions, Inc.
Project/Site: START Site in New Mexico

TestAmerica Job ID: 160-9071-1

Client Sample ID: SMC-09-20141027-21

Lab Sample ID: 160-9071-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	75	J	500	21	ug/L	10		6010C	Total/NA
Boron	310	J	500	72	ug/L	10		6010C	Total/NA
Calcium	69000	B	10000	540	ug/L	10		6010C	Total/NA
Iron	240	J	1000	130	ug/L	10		6010C	Total/NA
Lead	35	J B ^	100	6.0	ug/L	10		6010C	Total/NA
Magnesium	9100	J	10000	510	ug/L	10		6010C	Total/NA
Sodium	100000		10000	1100	ug/L	10		6010C	Total/NA
Zinc	96	J B	200	83	ug/L	10		6010C	Total/NA
Silicon	9400		4000	200	ug/L	10		6010C	Total/NA
Uranium	1000	J B ^	5000	260	ug/L	10		6010C	Total/NA
Aluminum	470	J	4000	450	ug/L	10		6010C	Dissolved
Barium	74	J	1000	42	ug/L	10		6010C	Dissolved
Boron	290	J	1000	140	ug/L	10		6010C	Dissolved
Calcium	55000		20000	1100	ug/L	10		6010C	Dissolved
Copper	56	J B	500	42	ug/L	10		6010C	Dissolved
Iron	290	J	2000	260	ug/L	10		6010C	Dissolved
Magnesium	7500	J	20000	1000	ug/L	10		6010C	Dissolved
Silicon	8100		8000	390	ug/L	10		6010C	Dissolved
Sodium	81000		20000	2100	ug/L	10		6010C	Dissolved
Uranium	4000	J B	10000	510	ug/L	10		6010C	Dissolved
pH	7.83	HF	0.100	0.100	SU	1		150.1	Total/NA
Total Dissolved Solids (TDS)	530		5.0	3.5	mg/L	1		160.1	Total/NA
Fluoride	1.3		0.10	0.010	mg/L	1		300.0	Total/NA
Bromide	0.39		0.25	0.025	mg/L	1		300.0	Total/NA
Alkalinity	180	B	5.0	0.54	mg/L	1		310.1	Total/NA
Bicarbonate Alkalinity as CaCO3	180	B	5.0	0.54	mg/L	1		310.1	Total/NA
Nitrate as N - DL	5.9		0.40	0.080	mg/L	20		300.0	Total/NA
Chloride - DL	29		4.0	0.40	mg/L	20		300.0	Total/NA
Sulfate - DL	140		10	1.0	mg/L	20		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: SMC-09-20141027-21
Date Collected: 10/27/14 10:55
Date Received: 10/28/14 09:10

Lab Sample ID: 160-9071-1
Matrix: Water

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		2000	220	ug/L		11/05/14 13:46	11/13/14 22:33	10
Antimony	ND		100	37	ug/L		11/05/14 13:46	11/13/14 22:33	10
Arsenic	ND		100	18	ug/L		11/05/14 13:46	11/13/14 22:33	10
Barium	**75**	**J**	500	21	ug/L		11/05/14 13:46	11/13/14 22:33	10
Boron	**310**	**J**	500	72	ug/L		11/05/14 13:46	11/13/14 22:33	10
Beryllium	ND		50	2.8	ug/L		11/05/14 13:46	11/13/14 22:33	10
Cadmium	ND		50	3.4	ug/L		11/05/14 13:46	11/13/14 22:33	10
Calcium	**69000**	**B**	10000	540	ug/L		11/05/14 13:46	11/13/14 22:33	10
Chromium	ND	^	100	34	ug/L		11/05/14 13:46	11/13/14 22:33	10
Cobalt	ND		500	27	ug/L		11/05/14 13:46	11/13/14 22:33	10
Copper	ND		250	21	ug/L		11/05/14 13:46	11/13/14 22:33	10
Iron	**240**	**J**	1000	130	ug/L		11/05/14 13:46	11/13/14 22:33	10
Lead	**35**	**J B ^**	100	6.0	ug/L		11/05/14 13:46	11/13/14 22:33	10
Magnesium	**9100**	**J**	10000	510	ug/L		11/05/14 13:46	11/13/14 22:33	10
Manganese	ND		150	10	ug/L		11/05/14 13:46	11/13/14 22:33	10
Nickel	ND		400	26	ug/L		11/05/14 13:46	11/13/14 22:33	10
Molybdenum	ND		400	19	ug/L		11/05/14 13:46	11/13/14 22:33	10
Potassium	ND		50000	4600	ug/L		11/05/14 13:46	11/13/14 22:33	10
Selenium	ND		150	21	ug/L		11/05/14 13:46	11/13/14 22:33	10
Silver	ND		100	9.9	ug/L		11/05/14 13:46	11/13/14 22:33	10
Phosphorus	ND		2500	140	ug/L		11/05/14 13:46	11/13/14 22:33	10
Sodium	**100000**		10000	1100	ug/L		11/05/14 13:46	11/13/14 22:33	10
Thallium	ND		200	24	ug/L		11/05/14 13:46	11/13/14 22:33	10
Vanadium	ND		500	44	ug/L		11/05/14 13:46	11/13/14 22:33	10
Zinc	**96**	**J B**	200	83	ug/L		11/05/14 13:46	11/13/14 22:33	10
Silicon	**9400**		4000	200	ug/L		11/05/14 13:46	11/13/14 22:33	10
Tin	ND		1000	50	ug/L		11/05/14 13:46	11/13/14 22:33	10
Titanium	ND		200	13	ug/L		11/05/14 13:46	11/13/14 22:33	10
Uranium	**1000**	**J B ^**	5000	260	ug/L		11/05/14 13:46	11/13/14 22:33	10

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**470**	**J**	4000	450	ug/L		11/17/14 12:48	11/18/14 19:49	10
Antimony	ND		200	75	ug/L		11/17/14 12:48	11/18/14 19:49	10
Arsenic	ND		200	36	ug/L		11/17/14 12:48	11/18/14 19:49	10
Barium	**74**	**J**	1000	42	ug/L		11/17/14 12:48	11/18/14 19:49	10
Beryllium	ND		100	5.7	ug/L		11/17/14 12:48	11/18/14 19:49	10
Boron	**290**	**J**	1000	140	ug/L		11/17/14 12:48	11/18/14 19:49	10
Cadmium	ND		100	6.7	ug/L		11/17/14 12:48	11/18/14 19:49	10
Calcium	**55000**		20000	1100	ug/L		11/17/14 12:48	11/18/14 19:49	10
Chromium	ND		200	67	ug/L		11/17/14 12:48	11/18/14 19:49	10
Cobalt	ND		1000	54	ug/L		11/17/14 12:48	11/18/14 19:49	10
Copper	**56**	**J B**	500	42	ug/L		11/17/14 12:48	11/18/14 19:49	10
Iron	**290**	**J**	2000	260	ug/L		11/17/14 12:48	11/18/14 19:49	10
Lead	ND		200	12	ug/L		11/17/14 12:48	11/18/14 19:49	10
Magnesium	**7500**	**J**	20000	1000	ug/L		11/17/14 12:48	11/18/14 19:49	10
Manganese	ND		300	20	ug/L		11/17/14 12:48	11/18/14 19:49	10
Molybdenum	ND		800	38	ug/L		11/17/14 12:48	11/18/14 19:49	10
Nickel	ND		800	51	ug/L		11/17/14 12:48	11/18/14 19:49	10

Client Sample ID: SMC-09-20141027-21
Date Collected: 10/27/14 10:55
Date Received: 10/28/14 09:10

Lab Sample ID: 160-9071-1
Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phosphorus	ND		5000	280	ug/L		11/17/14 12:48	11/18/14 19:49	10
Potassium	ND		100000	9100	ug/L		11/17/14 12:48	11/18/14 19:49	10
Selenium	ND		300	42	ug/L		11/17/14 12:48	11/18/14 19:49	10
Silicon	**8100**		8000	390	ug/L		11/17/14 12:48	11/18/14 19:49	10
Silver	ND		200	20	ug/L		11/17/14 12:48	11/18/14 19:49	10
Sodium	**81000**		20000	2100	ug/L		11/17/14 12:48	11/18/14 19:49	10
Thallium	ND		400	48	ug/L		11/17/14 12:48	11/18/14 19:49	10
Tin	ND		2000	100	ug/L		11/17/14 12:48	11/18/14 19:49	10
Titanium	ND		400	25	ug/L		11/17/14 12:48	11/18/14 19:49	10
Uranium	**4000**	**J B**	10000	510	ug/L		11/17/14 12:48	11/18/14 19:49	10
Vanadium	ND		1000	88	ug/L		11/17/14 12:48	11/18/14 19:49	10
Zinc	ND		400	170	ug/L		11/17/14 12:48	11/18/14 19:49	10

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.060	ug/L		11/07/14 14:14	11/07/14 16:11	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		1.0	0.30	ug/L		11/07/14 14:23	11/07/14 16:37	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.83**	**HF**	0.100	0.100	SU			10/28/14 11:18	1
Total Dissolved Solids (TDS)	**530**		5.0	3.5	mg/L			11/03/14 10:20	1
Fluoride	**1.3**		0.10	0.010	mg/L			10/28/14 21:41	1
Bromide	**0.39**		0.25	0.025	mg/L			10/28/14 21:41	1
Orthophosphate	ND		0.50	0.078	mg/L			10/28/14 21:41	1
Alkalinity	**180**	**B**	5.0	0.54	mg/L			10/31/14 11:18	1
Carbonate Alkalinity as CaCO3	ND		5.0	0.54	mg/L			10/31/14 11:18	1
Bicarbonate Alkalinity as CaCO3	**180**	**B**	5.0	0.54	mg/L			10/31/14 11:18	1

General Chemistry - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	**5.9**		0.40	0.080	mg/L			10/28/14 21:56	20
Nitrite as N	ND		0.40	0.060	mg/L			10/28/14 21:56	20
Chloride	**29**		4.0	0.40	mg/L			10/28/14 21:56	20
Sulfate	**140**		10	1.0	mg/L			10/28/14 21:56	20

Method: 9310 - Gross Alpha / Beta (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	**16.3**	**G**	4.36	4.74	3.00	3.92	pCi/L	11/04/14 09:08	11/05/14 07:21	1
Gross Beta	**2.78**		1.82	1.84	4.00	2.61	pCi/L	11/04/14 09:08	11/05/14 07:21	1

Method: A-01-R - Isotopic Thorium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Thorium-228	0.0708	U	0.152	0.152	1.00	0.298	pCi/L	11/07/14 09:02	11/07/14 17:41	1

Client Sample ID: SMC-09-20141027-21
Date Collected: 10/27/14 10:55
Date Received: 10/28/14 09:10

Lab Sample ID: 160-9071-1
Matrix: Water

Method: A-01-R - Isotopic Thorium (Alpha Spectrometry) (Continued)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Thorium-230	0.111	U *	0.172	0.172	1.00	0.299	pCi/L	11/07/14 09:02	11/07/14 17:41	1
Thorium-232	0.0470	U	0.123	0.123	1.00	0.265	pCi/L	11/07/14 09:02	11/07/14 17:41	1
Thorium-227	-0.0706	U	0.152	0.152	1.00	0.427	pCi/L	11/07/14 09:02	11/07/14 17:41	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Thorium-229	*42.8*		*30 - 110*	*11/07/14 09:02*	*11/07/14 17:41*	*1*

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Uranium-233/234	**6.79**		1.03	1.18	1.00	0.218	pCi/L	11/03/14 11:01	11/04/14 21:14	1
Uranium-235/236	**0.278**		0.238	0.240	1.00	0.234	pCi/L	11/03/14 11:01	11/04/14 21:14	1
Uranium-238	**6.67**		1.02	1.17	1.00	0.276	pCi/L	11/03/14 11:01	11/04/14 21:14	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*73.5*		*30 - 110*	*11/03/14 11:01*	*11/04/14 21:14*	*1*

Default Detection Limits

Client: Weston Solutions, Inc.
Project/Site: START Site in New Mexico

TestAmerica Job ID: 160-9071-1

Method: 6010C - Metals (ICP)

Analyte	RL	MDL	Units	Method
Aluminum	200	22	ug/L	6010C
Antimony	10	3.7	ug/L	6010C
Arsenic	10	1.8	ug/L	6010C
Barium	50	2.1	ug/L	6010C
Beryllium	5.0	0.28	ug/L	6010C
Boron	50	7.2	ug/L	6010C
Cadmium	5.0	0.34	ug/L	6010C
Calcium	1000	54	ug/L	6010C
Chromium	10	3.4	ug/L	6010C
Cobalt	50	2.7	ug/L	6010C
Copper	25	2.1	ug/L	6010C
Iron	100	13	ug/L	6010C
Lead	10	0.60	ug/L	6010C
Magnesium	1000	51	ug/L	6010C
Manganese	15	1.0	ug/L	6010C
Molybdenum	40	1.9	ug/L	6010C
Nickel	40	2.6	ug/L	6010C
Phosphorus	250	14	ug/L	6010C
Potassium	5000	460	ug/L	6010C
Selenium	15	2.1	ug/L	6010C
Silicon	400	20	ug/L	6010C
Silver	10	0.99	ug/L	6010C
Sodium	1000	110	ug/L	6010C
Thallium	20	2.4	ug/L	6010C
Tin	100	5.0	ug/L	6010C
Titanium	20	1.3	ug/L	6010C
Uranium	500	26	ug/L	6010C
Vanadium	50	4.4	ug/L	6010C
Zinc	20	8.3	ug/L	6010C

Method: 6010C - Metals (ICP) - Dissolved

Analyte	RL	MDL	Units	Method
Aluminum	200	22	ug/L	6010C
Antimony	10	3.7	ug/L	6010C
Arsenic	10	1.8	ug/L	6010C
Barium	50	2.1	ug/L	6010C
Beryllium	5.0	0.28	ug/L	6010C
Boron	50	7.2	ug/L	6010C
Cadmium	5.0	0.34	ug/L	6010C
Calcium	1000	54	ug/L	6010C
Chromium	10	3.4	ug/L	6010C
Cobalt	50	2.7	ug/L	6010C
Copper	25	2.1	ug/L	6010C
Iron	100	13	ug/L	6010C
Lead	10	0.60	ug/L	6010C
Magnesium	1000	51	ug/L	6010C
Manganese	15	1.0	ug/L	6010C
Molybdenum	40	1.9	ug/L	6010C
Nickel	40	2.6	ug/L	6010C
Phosphorus	250	14	ug/L	6010C
Potassium	5000	460	ug/L	6010C

Default Detection Limits

Client: Weston Solutions, Inc.
Project/Site: START Site in New Mexico

TestAmerica Job ID: 160-9071-1

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	RL	MDL	Units	Method
Selenium	15	2.1	ug/L	6010C
Silicon	400	20	ug/L	6010C
Silver	10	0.99	ug/L	6010C
Sodium	1000	110	ug/L	6010C
Thallium	20	2.4	ug/L	6010C
Tin	100	5.0	ug/L	6010C
Titanium	20	1.3	ug/L	6010C
Uranium	500	26	ug/L	6010C
Vanadium	50	4.4	ug/L	6010C
Zinc	20	8.3	ug/L	6010C

Method: 7470A - Mercury (CVAA)

Analyte	RL	MDL	Units	Method
Mercury	0.20	0.060	ug/L	7470A

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	RL	MDL	Units	Method
Mercury	0.20	0.060	ug/L	7470A

General Chemistry

Analyte	RL	MDL	Units	Method
pH	0.100	0.100	SU	150.1
Total Dissolved Solids (TDS)	5.0	3.5	mg/L	160.1
Bromide	0.25	0.025	mg/L	300.0
Chloride	0.20	0.020	mg/L	300.0
Fluoride	0.10	0.010	mg/L	300.0
Nitrate as N	0.020	0.0040	mg/L	300.0
Nitrite as N	0.020	0.0030	mg/L	300.0
Orthophosphate	0.50	0.078	mg/L	300.0
Sulfate	0.50	0.050	mg/L	300.0
Alkalinity	5.0	0.54	mg/L	310.1
Bicarbonate Alkalinity as CaCO3	5.0	0.54	mg/L	310.1
Carbonate Alkalinity as CaCO3	5.0	0.54	mg/L	310.1

Tracer/Carrier Summary

Client: Weston Solutions, Inc.
Project/Site: START Site in New Mexico

TestAmerica Job ID: 160-9071-1

Method: A-01-R - Isotopic Thorium (Alpha Spectrometry)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)							
		Th-229							
Lab Sample ID	Client Sample ID	(30-110)							
160-9071-1	SMC-09-20141027-21	42.8							
LCS 160-154805/2-A	Lab Control Sample	53.2							
LCSD 160-154805/3-A	Lab Control Sample Dup	56.0							
MB 160-154805/1-A	Method Blank	52.2							

Tracer/Carrier Legend

Th-229 = Thorium-229

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)							
		U-232							
Lab Sample ID	Client Sample ID	(30-110)							
160-9071-1	SMC-09-20141027-21	73.5							
LCS 160-153826/2-A	Lab Control Sample	83.8							
LCSD 160-153826/3-A	Lab Control Sample Dup	80.9							
MB 160-153826/1-A	Method Blank	78.6							

Tracer/Carrier Legend

U-232 = Uranium-232

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 160-154334/1-A
Matrix: Water
Analysis Batch: 156822

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 154334

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		200	22	ug/L		11/05/14 13:46	11/13/14 22:18	1
Antimony	ND	^	10	3.7	ug/L		11/05/14 13:46	11/13/14 22:18	1
Arsenic	ND	^	10	1.8	ug/L		11/05/14 13:46	11/13/14 22:18	1
Barium	ND		50	2.1	ug/L		11/05/14 13:46	11/13/14 22:18	1
Beryllium	ND		5.0	0.28	ug/L		11/05/14 13:46	11/13/14 22:18	1
Boron	ND		50	7.2	ug/L		11/05/14 13:46	11/13/14 22:18	1
Cadmium	ND	^	5.0	0.34	ug/L		11/05/14 13:46	11/13/14 22:18	1
Calcium	87.4	J	1000	54	ug/L		11/05/14 13:46	11/13/14 22:18	1
Chromium	ND	^	10	3.4	ug/L		11/05/14 13:46	11/13/14 22:18	1
Cobalt	ND	^	50	2.7	ug/L		11/05/14 13:46	11/13/14 22:18	1
Copper	ND	^	25	2.1	ug/L		11/05/14 13:46	11/13/14 22:18	1
Iron	ND		100	13	ug/L		11/05/14 13:46	11/13/14 22:18	1
Lead	1.70	J ^	10	0.60	ug/L		11/05/14 13:46	11/13/14 22:18	1
Magnesium	ND		1000	51	ug/L		11/05/14 13:46	11/13/14 22:18	1
Manganese	ND		15	1.0	ug/L		11/05/14 13:46	11/13/14 22:18	1
Molybdenum	ND		40	1.9	ug/L		11/05/14 13:46	11/13/14 22:18	1
Nickel	ND	^	40	2.6	ug/L		11/05/14 13:46	11/13/14 22:18	1
Potassium	ND		5000	460	ug/L		11/05/14 13:46	11/13/14 22:18	1
Selenium	ND	^	15	2.1	ug/L		11/05/14 13:46	11/13/14 22:18	1
Phosphorus	ND	^	250	14	ug/L		11/05/14 13:46	11/13/14 22:18	1
Silver	ND		10	0.99	ug/L		11/05/14 13:46	11/13/14 22:18	1
Sodium	ND		1000	110	ug/L		11/05/14 13:46	11/13/14 22:18	1
Thallium	ND	^	20	2.4	ug/L		11/05/14 13:46	11/13/14 22:18	1
Silicon	ND		400	20	ug/L		11/05/14 13:46	11/13/14 22:18	1
Tin	ND	^	100	5.0	ug/L		11/05/14 13:46	11/13/14 22:18	1
Titanium	ND		20	1.3	ug/L		11/05/14 13:46	11/13/14 22:18	1
Vanadium	ND		50	4.4	ug/L		11/05/14 13:46	11/13/14 22:18	1
Uranium	256	J ^	500	26	ug/L		11/05/14 13:46	11/13/14 22:18	1
Zinc	15.8	J ^	20	8.3	ug/L		11/05/14 13:46	11/13/14 22:18	1

Lab Sample ID: LCS 160-154334/2-A
Matrix: Water
Analysis Batch: 156822

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 154334

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	10000	9960		ug/L		100	80 - 120
Antimony	500	505	^	ug/L		101	80 - 120
Arsenic	1000	1030	^	ug/L		103	80 - 120
Barium	1000	1060		ug/L		106	80 - 120
Beryllium	1000	1010		ug/L		101	80 - 120
Boron	2000	1840		ug/L		92	80 - 120
Cadmium	1000	1030	^	ug/L		103	80 - 120
Calcium	10000	10700		ug/L		107	80 - 120
Chromium	1000	1090	^	ug/L		109	80 - 120
Cobalt	1000	1100	^	ug/L		110	80 - 120
Copper	1000	1070	^	ug/L		107	80 - 120
Iron	10000	9780		ug/L		98	80 - 120
Lead	1000	1090	^	ug/L		109	80 - 120

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 160-154334/2-A
Matrix: Water
Analysis Batch: 156822

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 154334

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Magnesium	10000	9450		ug/L		95	80 - 120
Manganese	1000	953		ug/L		95	80 - 120
Molybdenum	500	513		ug/L		103	80 - 120
Nickel	1000	1100	^	ug/L		110	80 - 120
Potassium	10000	10200		ug/L		102	80 - 120
Selenium	500	522	^	ug/L		104	80 - 120
Phosphorus	1000	1060	^	ug/L		106	80 - 120
Silver	200	202		ug/L		101	80 - 120
Sodium	10000	10100		ug/L		101	80 - 120
Thallium	200	222	^	ug/L		111	80 - 120
Silicon	5000	4580		ug/L		92	80 - 120
Tin	1000	1050	^	ug/L		105	80 - 120
Titanium	1000	996		ug/L		100	80 - 120
Vanadium	1000	967		ug/L		97	80 - 120
Uranium	1000	1160	^	ug/L		116	80 - 120
Zinc	1000	1110	^	ug/L		111	80 - 120

Lab Sample ID: 160-9071-1 MS
Matrix: Water
Analysis Batch: 156822

Client Sample ID: SMC-09-20141027-21
Prep Type: Total/NA
Prep Batch: 154334

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	ND		10000	10400		ug/L		104	75 - 125
Antimony	ND		500	535		ug/L		107	75 - 125
Arsenic	ND		1000	1130		ug/L		113	75 - 125
Barium	75	J	1000	1160		ug/L		108	75 - 125
Beryllium	ND		1000	1050		ug/L		105	75 - 125
Boron	310	J	2000	2180		ug/L		94	75 - 125
Cadmium	ND		1000	1120		ug/L		112	75 - 125
Calcium	69000	B	10000	82900	4	ug/L		141	75 - 125
Chromium	ND	^	1000	1160	^	ug/L		116	75 - 125
Cobalt	ND		1000	1180		ug/L		118	75 - 125
Copper	ND		1000	1150		ug/L		115	75 - 125
Iron	240	J	10000	10500		ug/L		103	75 - 125
Lead	35	J B ^	1000	1200	^	ug/L		117	75 - 125
Magnesium	9100	J	10000	18900		ug/L		98	75 - 125
Manganese	ND		1000	991		ug/L		99	75 - 125
Molybdenum	ND		500	539		ug/L		108	75 - 125
Nickel	ND		1000	1190		ug/L		119	75 - 125
Potassium	ND		10000	11700	J	ug/L		117	75 - 125
Selenium	ND		500	581		ug/L		116	75 - 125
Phosphorus	ND		1000	1150	J	ug/L		115	75 - 125
Silver	ND		200	192		ug/L		96	75 - 125
Sodium	100000		10000	114000	4	ug/L		108	75 - 125
Thallium	ND		200	227		ug/L		114	75 - 125
Silicon	9400		5000	14600		ug/L		105	75 - 125
Tin	ND		1000	1140		ug/L		114	75 - 125
Titanium	ND		1000	1020		ug/L		102	75 - 125

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 160-9071-1 MS
Matrix: Water
Analysis Batch: 156822

Client Sample ID: SMC-09-20141027-21
Prep Type: Total/NA
Prep Batch: 154334

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Vanadium	ND		1000	1010		ug/L		101	75 - 125
Uranium	1000	J B ^	1000	4460	J F1 ^	ug/L		345	75 - 125
Zinc	96	J B	1000	1270		ug/L		118	75 - 125

Lab Sample ID: 160-9071-1 MSD
Matrix: Water
Analysis Batch: 156822

Client Sample ID: SMC-09-20141027-21
Prep Type: Total/NA
Prep Batch: 154334

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aluminum	ND		10000	10400		ug/L		104	75 - 125	0	20
Antimony	ND		500	524		ug/L		105	75 - 125	2	20
Arsenic	ND		1000	1080		ug/L		108	75 - 125	5	20
Barium	75	J	1000	1140		ug/L		106	75 - 125	2	20
Beryllium	ND		1000	1040		ug/L		104	75 - 125	1	20
Boron	310	J	2000	2170		ug/L		93	75 - 125	1	20
Cadmium	ND		1000	1060		ug/L		106	75 - 125	5	20
Calcium	69000	B	10000	80100	4	ug/L		114	75 - 125	3	20
Chromium	ND	^	1000	1110	^	ug/L		111	75 - 125	4	20
Cobalt	ND		1000	1130		ug/L		113	75 - 125	5	20
Copper	ND		1000	1080		ug/L		108	75 - 125	6	20
Iron	240	J	10000	10400		ug/L		102	75 - 125	1	20
Lead	35	J B ^	1000	1160	^	ug/L		112	75 - 125	4	20
Magnesium	9100	J	10000	19200		ug/L		102	75 - 125	2	20
Manganese	ND		1000	1000		ug/L		100	75 - 125	1	20
Molybdenum	ND		500	519		ug/L		104	75 - 125	4	20
Nickel	ND		1000	1130		ug/L		113	75 - 125	5	20
Potassium	ND		10000	12100	J	ug/L		121	75 - 125	4	20
Selenium	ND		500	591		ug/L		118	75 - 125	2	20
Phosphorus	ND		1000	1100	J	ug/L		110	75 - 125	4	20
Silver	ND		200	192		ug/L		96	75 - 125	0	20
Sodium	100000		10000	114000	4	ug/L		110	75 - 125	0	20
Thallium	ND		200	258	F1	ug/L		129	75 - 125	13	20
Silicon	9400		5000	14500		ug/L		103	75 - 125	1	20
Tin	ND		1000	1090		ug/L		109	75 - 125	4	20
Titanium	ND		1000	1020		ug/L		102	75 - 125	0	20
Vanadium	ND		1000	998		ug/L		100	75 - 125	1	20
Uranium	1000	J B ^	1000	878	J ^ F1 F2	ug/L		-14	75 - 125	134	20
Zinc	96	J B	1000	1220		ug/L		113	75 - 125	4	20

Lab Sample ID: MB 160-157443/1-A
Matrix: Water
Analysis Batch: 158045

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 157443

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		200	22	ug/L		11/17/14 12:41	11/18/14 19:18	1
Antimony	ND		10	3.7	ug/L		11/17/14 12:41	11/18/14 19:18	1
Arsenic	ND		10	1.8	ug/L		11/17/14 12:41	11/18/14 19:18	1
Barium	ND		50	2.1	ug/L		11/17/14 12:41	11/18/14 19:18	1
Beryllium	ND		5.0	0.28	ug/L		11/17/14 12:41	11/18/14 19:18	1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: MB 160-157443/1-A
Matrix: Water
Analysis Batch: 158045

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 157443

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		50	7.2	ug/L		11/17/14 12:41	11/18/14 19:18	1
Cadmium	ND		5.0	0.34	ug/L		11/17/14 12:41	11/18/14 19:18	1
Calcium	ND		1000	54	ug/L		11/17/14 12:41	11/18/14 19:18	1
Chromium	ND		10	3.4	ug/L		11/17/14 12:41	11/18/14 19:18	1
Cobalt	ND		50	2.7	ug/L		11/17/14 12:41	11/18/14 19:18	1
Copper	2.10	J	25	2.1	ug/L		11/17/14 12:41	11/18/14 19:18	1
Iron	ND		100	13	ug/L		11/17/14 12:41	11/18/14 19:18	1
Lead	ND		10	0.60	ug/L		11/17/14 12:41	11/18/14 19:18	1
Magnesium	ND		1000	51	ug/L		11/17/14 12:41	11/18/14 19:18	1
Manganese	ND		15	1.0	ug/L		11/17/14 12:41	11/18/14 19:18	1
Molybdenum	ND		40	1.9	ug/L		11/17/14 12:41	11/18/14 19:18	1
Nickel	ND		40	2.6	ug/L		11/17/14 12:41	11/18/14 19:18	1
Potassium	ND		5000	460	ug/L		11/17/14 12:41	11/18/14 19:18	1
Selenium	2.50	J	15	2.1	ug/L		11/17/14 12:41	11/18/14 19:18	1
Phosphorus	ND		250	14	ug/L		11/17/14 12:41	11/18/14 19:18	1
Silver	ND		10	0.99	ug/L		11/17/14 12:41	11/18/14 19:18	1
Sodium	ND		1000	110	ug/L		11/17/14 12:41	11/18/14 19:18	1
Thallium	ND		20	2.4	ug/L		11/17/14 12:41	11/18/14 19:18	1
Silicon	ND		400	20	ug/L		11/17/14 12:41	11/18/14 19:18	1
Tin	ND		100	5.0	ug/L		11/17/14 12:41	11/18/14 19:18	1
Titanium	ND		20	1.3	ug/L		11/17/14 12:41	11/18/14 19:18	1
Vanadium	ND		50	4.4	ug/L		11/17/14 12:41	11/18/14 19:18	1
Uranium	160	J	500	26	ug/L		11/17/14 12:41	11/18/14 19:18	1
Zinc	ND		20	8.3	ug/L		11/17/14 12:41	11/18/14 19:18	1

Lab Sample ID: LCS 160-157443/2-B
Matrix: Water
Analysis Batch: 158045

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 157443

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	10000	8910		ug/L		89	80 - 120
Antimony	500	489		ug/L		98	80 - 120
Arsenic	1000	932		ug/L		93	80 - 120
Barium	1000	948		ug/L		95	80 - 120
Beryllium	1000	940		ug/L		94	80 - 120
Boron	2000	1810		ug/L		90	80 - 120
Cadmium	1000	950		ug/L		95	80 - 120
Calcium	10000	10100		ug/L		101	80 - 120
Chromium	1000	970		ug/L		97	80 - 120
Cobalt	1000	1030		ug/L		103	80 - 120
Copper	1000	987		ug/L		99	80 - 120
Iron	10000	9700		ug/L		97	80 - 120
Lead	1000	1010		ug/L		101	80 - 120
Magnesium	10000	8830		ug/L		88	80 - 120
Manganese	1000	922		ug/L		92	80 - 120
Molybdenum	500	512		ug/L		102	80 - 120
Nickel	1000	1010		ug/L		101	80 - 120
Potassium	10000	9260		ug/L		93	80 - 120

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 160-157443/2-B
Matrix: Water
Analysis Batch: 158045

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 157443

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Selenium	500	479		ug/L		96	80 - 120
Phosphorus	1000	969		ug/L		97	80 - 120
Silver	200	184		ug/L		92	80 - 120
Sodium	10000	8980		ug/L		90	80 - 120
Thallium	200	206		ug/L		103	80 - 120
Silicon	5000	4430		ug/L		89	80 - 120
Tin	1000	1020		ug/L		102	80 - 120
Titanium	1000	970		ug/L		97	80 - 120
Vanadium	1000	896		ug/L		90	80 - 120
Uranium	1000	1130		ug/L		113	80 - 120
Zinc	1000	979		ug/L		98	80 - 120

Lab Sample ID: LRC 160-156822/10
Matrix: Water
Analysis Batch: 156822

Client Sample ID: Lab Control Sample

Analyte	Spike Added	LRC Result	LRC Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	100000	102000		ug/L		102	90 - 110
Antimony	2000	2070		ug/L		103	90 - 110
Arsenic	10000	10300		ug/L		103	90 - 110
Barium	10000	10300		ug/L		103	90 - 110
Beryllium	10000	9970		ug/L		100	90 - 110
Boron	10000	10100		ug/L		101	90 - 110
Cadmium	10000	10300		ug/L		103	90 - 110
Calcium	100000	101000		ug/L		101	90 - 110
Chromium	10000	10000		ug/L		100	90 - 110
Cobalt	10000	10200		ug/L		102	90 - 110
Copper	10000	10400		ug/L		104	90 - 110
Iron	100000	99500		ug/L		100	90 - 110
Lead	10000	10200		ug/L		102	90 - 110
Magnesium	100000	101000		ug/L		101	90 - 110
Manganese	10000	10100		ug/L		101	90 - 110
Molybdenum	2000	2060		ug/L		103	90 - 110
Nickel	10000	10200		ug/L		102	90 - 110
Potassium	100000	101000		ug/L		101	90 - 110
Selenium	2000	2050		ug/L		103	90 - 110
Phosphorus	100000	101000		ug/L		101	90 - 110
Silver	2000	2040		ug/L		102	90 - 110
Sodium	100000	102000		ug/L		102	90 - 110
Thallium	2000	2030		ug/L		102	90 - 110
Silicon	10000	10000		ug/L		100	90 - 110
Tin	10000	10200		ug/L		102	90 - 110
Titanium	10000	10000		ug/L		100	90 - 110
Vanadium	10000	10100		ug/L		101	90 - 110
Uranium	10000	10300		ug/L		103	90 - 110
Zinc	10000	10200		ug/L		102	90 - 110

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LRC 160-158045/10
Matrix: Water
Analysis Batch: 158045

Client Sample ID: Lab Control Sample

Analyte	Spike Added	LRC Result	LRC Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	100000	101000		ug/L		101	90 - 110
Antimony	2000	2010		ug/L		100	90 - 110
Arsenic	10000	10000		ug/L		100	90 - 110
Barium	10000	10000		ug/L		100	90 - 110
Beryllium	10000	10000		ug/L		100	90 - 110
Boron	10000	9980		ug/L		100	90 - 110
Cadmium	10000	9970		ug/L		100	90 - 110
Calcium	100000	98500		ug/L		99	90 - 110
Chromium	10000	9890		ug/L		99	90 - 110
Cobalt	10000	9870		ug/L		99	90 - 110
Copper	10000	9970		ug/L		100	90 - 110
Iron	100000	99600		ug/L		100	90 - 110
Lead	10000	9920		ug/L		99	90 - 110
Magnesium	100000	100000		ug/L		100	90 - 110
Manganese	10000	9980		ug/L		100	90 - 110
Molybdenum	2000	2000		ug/L		100	90 - 110
Nickel	10000	9890		ug/L		99	90 - 110
Potassium	100000	101000		ug/L		101	90 - 110
Selenium	2000	2010		ug/L		100	90 - 110
Phosphorus	100000	98700		ug/L		99	90 - 110
Silver	2000	1980		ug/L		99	90 - 110
Sodium	100000	99900		ug/L		100	90 - 110
Thallium	2000	1970		ug/L		99	90 - 110
Silicon	10000	10000		ug/L		100	90 - 110
Tin	10000	9910		ug/L		99	90 - 110
Titanium	10000	9970		ug/L		100	90 - 110
Vanadium	10000	9970		ug/L		100	90 - 110
Uranium	10000	9950		ug/L		100	90 - 110
Zinc	10000	9930		ug/L		99	90 - 110

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 160-154974/1-A
Matrix: Water
Analysis Batch: 155162

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 154974

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.060	ug/L		11/07/14 14:14	11/07/14 15:09	1

Lab Sample ID: LCS 160-154974/2-A
Matrix: Water
Analysis Batch: 155162

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 154974

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	5.00	5.16		ug/L		103	80 - 120

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: LCS 160-154976/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 155162 — **Prep Batch: 154976**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	25.0	26.4		ug/L		105	80 - 120

Lab Sample ID: LB 160-152600/1-B — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 155162 — **Prep Batch: 154976**

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		1.0	0.30	ug/L		11/07/14 14:23	11/07/14 16:27	1

Lab Sample ID: 160-9071-1 MS — **Client Sample ID: SMC-09-20141027-21**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 155162 — **Prep Batch: 154976**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND		25.0	24.7		ug/L		99	80 - 120

Lab Sample ID: 160-9071-1 MSD — **Client Sample ID: SMC-09-20141027-21**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 155162 — **Prep Batch: 154976**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		25.0	24.7		ug/L		99	80 - 120	0	20

Method: 150.1 - pH (Electrometric)

Lab Sample ID: LCS 160-152486/5 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 152486

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.050		SU		101	99.0 - 101.0

Method: 160.1 - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 160-154285/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 154285

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		5.0	3.5	mg/L			11/03/14 10:20	1

Lab Sample ID: LCS 160-154285/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 154285

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids (TDS)	500	543		mg/L		109	90 - 110

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 160-153094/9
Matrix: Water
Analysis Batch: 153094

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.020	0.0040	mg/L			10/28/14 18:57	1
Nitrite as N	ND		0.020	0.0030	mg/L			10/28/14 18:57	1
Fluoride	ND		0.10	0.010	mg/L			10/28/14 18:57	1
Chloride	ND		0.20	0.020	mg/L			10/28/14 18:57	1
Bromide	ND		0.25	0.025	mg/L			10/28/14 18:57	1
Sulfate	ND		0.50	0.050	mg/L			10/28/14 18:57	1
Orthophosphate	ND		0.50	0.078	mg/L			10/28/14 18:57	1

Lab Sample ID: LCS 160-153094/10
Matrix: Water
Analysis Batch: 153094

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.400	0.379		mg/L		95	90 - 110
Nitrite as N	0.160	0.159		mg/L		99	90 - 110
Fluoride	1.00	0.971		mg/L		97	90 - 110
Chloride	2.00	1.91		mg/L		95	90 - 110
Bromide	2.00	1.89		mg/L		95	90 - 110
Sulfate	8.00	7.47		mg/L		93	90 - 110
Orthophosphate	8.00	7.43		mg/L		93	90 - 110

Method: 310.1 - Alkalinity

Lab Sample ID: MB 160-153305/1
Matrix: Water
Analysis Batch: 153305

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	2.50		1.3	0.14	mg/L			10/31/14 11:18	1
Carbonate Alkalinity as CaCO3	ND		1.3	0.14	mg/L			10/31/14 11:18	1
Bicarbonate Alkalinity as CaCO3	2.50		1.3	0.14	mg/L			10/31/14 11:18	1

Lab Sample ID: HLCS 160-153305/3
Matrix: Water
Analysis Batch: 153305

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	HLCS Result	HLCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	400	370		mg/L		93	90 - 110
Bicarbonate Alkalinity as CaCO3	400	370		mg/L		93	90 - 110

Lab Sample ID: LCS 160-153305/2
Matrix: Water
Analysis Batch: 153305

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	200	182		mg/L		91	90 - 110
Bicarbonate Alkalinity as CaCO3	200	182		mg/L		91	90 - 110

Method: 9310 - Gross Alpha / Beta (GFPC)

Lab Sample ID: MB 160-153948/1-A
Matrix: Water
Analysis Batch: 154081

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 153948

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.7364	U	0.745	0.750	3.00	1.18	pCi/L	11/04/14 09:08	11/04/14 18:14	1
Gross Beta	0.1828	U	0.530	0.530	4.00	0.903	pCi/L	11/04/14 09:08	11/04/14 18:14	1

Lab Sample ID: LCS 160-153948/2-A
Matrix: Water
Analysis Batch: 154079

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 153948

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Gross Alpha	50.1	52.39		7.45	3.00	1.85	pCi/L	105	73 - 133

Lab Sample ID: LCSB 160-153948/3-A
Matrix: Water
Analysis Batch: 154079

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 153948

Analyte	Spike Added	LCSB Result	LCSB Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Gross Beta	96.3	94.56		9.98	4.00	0.980	pCi/L	98	75 - 125

Method: A-01-R - Isotopic Thorium (Alpha Spectrometry)

Lab Sample ID: MB 160-154805/1-A
Matrix: Water
Analysis Batch: 154876

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 154805

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Thorium-228	-0.006669	U	0.0133	0.0133	1.00	0.0885	pCi/L	11/07/14 09:02	11/07/14 17:41	1
Thorium-230	0.2242		0.120	0.121	1.00	0.0480	pCi/L	11/07/14 09:02	11/07/14 17:41	1
Thorium-232	0.02523	U	0.0470	0.0470	1.00	0.0881	pCi/L	11/07/14 09:02	11/07/14 17:41	1
Thorium-227	-0.006653	U	0.0133	0.0133	1.00	0.0883	pCi/L	11/07/14 09:02	11/07/14 17:41	1

Tracer	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Thorium-229	*52.2*		*30 - 110*	*11/07/14 09:02*	*11/07/14 17:41*	*1*

Lab Sample ID: LCS 160-154805/2-A
Matrix: Water
Analysis Batch: 154877

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 154805

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Thorium-230	8.64	15.27	*	1.63	1.00	0.0908	pCi/L	177	81 - 125

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Thorium-229	*53.2*		*30 - 110*

Method: A-01-R - Isotopic Thorium (Alpha Spectrometry) (Continued)

Lab Sample ID: LCSD 160-154805/3-A
Matrix: Water
Analysis Batch: 154878

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 154805

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Thorium-230			8.64	14.84	*	1.58	1.00	0.0468	pCi/L	172	81 - 125	0.13	1

Tracer	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Thorium-229	*56.0*		*30 - 110*

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Lab Sample ID: MB 160-153826/1-A
Matrix: Water
Analysis Batch: 154409

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 153826

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Uranium-233/234	0.08781	U	0.110	0.110	1.00	0.178	pCi/L	11/03/14 11:01	11/04/14 21:14	1
Uranium-235/236	0.005751	U	0.0501	0.0501	1.00	0.142	pCi/L	11/03/14 11:01	11/04/14 21:14	1
Uranium-238	0.01845	U	0.0553	0.0554	1.00	0.123	pCi/L	11/03/14 11:01	11/04/14 21:14	1

Tracer	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*78.6*		*30 - 110*	*11/03/14 11:01*	*11/04/14 21:14*	*1*

Lab Sample ID: LCS 160-153826/2-A
Matrix: Water
Analysis Batch: 154411

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 153826

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Uranium-233/234			12.7	12.78		1.42	1.00	0.159	pCi/L	100	84 - 120		
Uranium-238			13.0	13.55		1.49	1.00	0.139	pCi/L	104	83 - 121		

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Uranium-232	*83.8*		*30 - 110*

Lab Sample ID: LCSD 160-153826/3-A
Matrix: Water
Analysis Batch: 154412

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 153826

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Uranium-233/234			12.7	13.24		1.47	1.00	0.142	pCi/L	104	84 - 120	0.16	1
Uranium-238			13.0	13.64		1.50	1.00	0.107	pCi/L	105	83 - 121	0.03	1

Tracer	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Uranium-232	*80.9*		*30 - 110*

Metals

Filtration Batch: 152600

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-9071-1	SMC-09-20141027-21	Dissolved	Water	FILTRATION	
160-9071-1 MS	SMC-09-20141027-21	Dissolved	Water	FILTRATION	
160-9071-1 MSD	SMC-09-20141027-21	Dissolved	Water	FILTRATION	
160-9071-1 SD	SMC-09-20141027-21	Dissolved	Water	FILTRATION	
LB 160-152600/1-B	Method Blank	Dissolved	Water	FILTRATION	

Prep Batch: 154334

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-9071-1	SMC-09-20141027-21	Total/NA	Water	3010A	
160-9071-1 MS	SMC-09-20141027-21	Total/NA	Water	3010A	
160-9071-1 MSD	SMC-09-20141027-21	Total/NA	Water	3010A	
160-9071-1 SD	SMC-09-20141027-21	Total/NA	Water	3010A	
LCS 160-154334/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 160-154334/1-A	Method Blank	Total/NA	Water	3010A	

Prep Batch: 154974

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-9071-1	SMC-09-20141027-21	Total/NA	Water	7470A	
LCS 160-154974/2-A	Lab Control Sample	Total/NA	Water	7470A	
MB 160-154974/1-A	Method Blank	Total/NA	Water	7470A	

Prep Batch: 154976

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-9071-1	SMC-09-20141027-21	Dissolved	Water	7470A	152600
160-9071-1 MS	SMC-09-20141027-21	Dissolved	Water	7470A	152600
160-9071-1 MSD	SMC-09-20141027-21	Dissolved	Water	7470A	152600
160-9071-1 SD	SMC-09-20141027-21	Dissolved	Water	7470A	152600
LB 160-152600/1-B	Method Blank	Dissolved	Water	7470A	152600
LCS 160-154976/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 155162

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-9071-1	SMC-09-20141027-21	Dissolved	Water	7470A	154976
160-9071-1	SMC-09-20141027-21	Total/NA	Water	7470A	154974
160-9071-1 MS	SMC-09-20141027-21	Dissolved	Water	7470A	154976
160-9071-1 MSD	SMC-09-20141027-21	Dissolved	Water	7470A	154976
160-9071-1 SD	SMC-09-20141027-21	Dissolved	Water	7470A	154976
LB 160-152600/1-B	Method Blank	Dissolved	Water	7470A	154976
LCS 160-154974/2-A	Lab Control Sample	Total/NA	Water	7470A	154974
LCS 160-154976/2-A	Lab Control Sample	Total/NA	Water	7470A	154976
MB 160-154974/1-A	Method Blank	Total/NA	Water	7470A	154974

Analysis Batch: 156822

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-9071-1	SMC-09-20141027-21	Total/NA	Water	6010C	154334
160-9071-1 MS	SMC-09-20141027-21	Total/NA	Water	6010C	154334
160-9071-1 MSD	SMC-09-20141027-21	Total/NA	Water	6010C	154334
160-9071-1 SD	SMC-09-20141027-21	Total/NA	Water	6010C	154334
CRI 160-156822/7	DL		Water	6010C	
ICSA 160-156822/8	ICS		Water	6010C	
ICSAB 160-156822/9	ICS		Water	6010C	

Metals (Continued)

Analysis Batch: 156822 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 160-154334/2-A	Lab Control Sample	Total/NA	Water	6010C	154334
LRC 160-156822/10	Lab Control Sample		Water	6010C	
MB 160-154334/1-A	Method Blank	Total/NA	Water	6010C	154334

Prep Batch: 157443

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-9071-1	SMC-09-20141027-21	Dissolved	Water	3010A	152600
LCS 160-157443/2-B	Lab Control Sample	Total/NA	Water	3010A	
MB 160-157443/1-A	Method Blank	Total/NA	Water	3010A	

Analysis Batch: 158045

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-9071-1	SMC-09-20141027-21	Dissolved	Water	6010C	157443
CRI 160-158045/7	DL		Water	6010C	
ICSA 160-158045/8	ICS		Water	6010C	
ICSAB 160-158045/9	ICS		Water	6010C	
LCS 160-157443/2-B	Lab Control Sample	Total/NA	Water	6010C	157443
LRC 160-158045/10	Lab Control Sample		Water	6010C	
MB 160-157443/1-A	Method Blank	Total/NA	Water	6010C	157443

General Chemistry

Analysis Batch: 152486

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-9071-1	SMC-09-20141027-21	Total/NA	Water	150.1	
LCS 160-152486/5	Lab Control Sample	Total/NA	Water	150.1	

Analysis Batch: 153094

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-9071-1	SMC-09-20141027-21	Total/NA	Water	300.0	
160-9071-1 - DL	SMC-09-20141027-21	Total/NA	Water	300.0	
LCS 160-153094/10	Lab Control Sample	Total/NA	Water	300.0	
MB 160-153094/9	Method Blank	Total/NA	Water	300.0	

Analysis Batch: 153305

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-9071-1	SMC-09-20141027-21	Total/NA	Water	310.1	
HLCS 160-153305/3	Lab Control Sample	Total/NA	Water	310.1	
LCS 160-153305/2	Lab Control Sample	Total/NA	Water	310.1	
MB 160-153305/1	Method Blank	Total/NA	Water	310.1	

Analysis Batch: 154285

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-9071-1	SMC-09-20141027-21	Total/NA	Water	160.1	
LCS 160-154285/2	Lab Control Sample	Total/NA	Water	160.1	
MB 160-154285/1	Method Blank	Total/NA	Water	160.1	

Rad

Prep Batch: 153826

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-9071-1	SMC-09-20141027-21	Total/NA	Water	ExtChrom	
LCS 160-153826/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	
LCSD 160-153826/3-A	Lab Control Sample Dup	Total/NA	Water	ExtChrom	
MB 160-153826/1-A	Method Blank	Total/NA	Water	ExtChrom	

Prep Batch: 153948

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-9071-1	SMC-09-20141027-21	Total/NA	Water	Evaporation	
LCS 160-153948/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
LCSB 160-153948/3-A	Lab Control Sample	Total/NA	Water	Evaporation	
MB 160-153948/1-A	Method Blank	Total/NA	Water	Evaporation	

Prep Batch: 154805

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-9071-1	SMC-09-20141027-21	Total/NA	Water	ExtChrom	
LCS 160-154805/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	
LCSD 160-154805/3-A	Lab Control Sample Dup	Total/NA	Water	ExtChrom	
MB 160-154805/1-A	Method Blank	Total/NA	Water	ExtChrom	

Analysis Batch: 110999

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
ACVABT 160-110999/1	ACV			GFPC_SUM	
ACVABT 160-110999/2	ACV			GFPC_SUM	
ACVABT 160-110999/3	ACV			GFPC_SUM	
ACVABT 160-110999/4	ACV			GFPC_SUM	
ACVABT 160-110999/5	ACV			GFPC_SUM	
ACVABT 160-110999/6	ACV			GFPC_SUM	

Analysis Batch: 114315

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
ACVABT 160-114315/1	ACV			GFPC_SUM	
ACVABT 160-114315/2	ACV			GFPC_SUM	
ACVABT 160-114315/3	ACV			GFPC_SUM	
ACVABT 160-114315/4	ACV			GFPC_SUM	
ACVABT 160-114315/5	ACV			GFPC_SUM	
ACVABT 160-114315/6	ACV			GFPC_SUM	

Analysis Batch: 114316

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
ACVABT 160-114316/1	ACV			GFPC_SUM	
ACVABT 160-114316/2	ACV			GFPC_SUM	
ACVABT 160-114316/3	ACV			GFPC_SUM	
ACVABT 160-114316/4	ACV			GFPC_SUM	
ACVABT 160-114316/5	ACV			GFPC_SUM	
ACVABT 160-114316/6	ACV			GFPC_SUM	

Lab Chronicle

Client: Weston Solutions, Inc.
Project/Site: START Site in New Mexico

TestAmerica Job ID: 160-9071-1

Client Sample ID: SMC-09-20141027-21
Date Collected: 10/27/14 10:55
Date Received: 10/28/14 09:10

Lab Sample ID: 160-9071-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	FILTRATION			152600	10/29/14 09:49	JWM	TAL SL
Dissolved	Prep	3010A			157443	11/17/14 12:48	SMD	TAL SL
Dissolved	Analysis	6010C		10	158045	11/18/14 19:49	FLC	TAL SL
Total/NA	Prep	3010A			154334	11/05/14 13:46	SMD	TAL SL
Total/NA	Analysis	6010C		10	156822	11/13/14 22:33	FLC	TAL SL
Dissolved	Filtration	FILTRATION			152600	10/29/14 09:49	JWM	TAL SL
Dissolved	Prep	7470A			154976	11/07/14 14:23	MTS	TAL SL
Dissolved	Analysis	7470A		1	155162	11/07/14 16:37	MTS	TAL SL
Total/NA	Prep	7470A			154974	11/07/14 14:14	MTS	TAL SL
Total/NA	Analysis	7470A		1	155162	11/07/14 16:11	MTS	TAL SL
Total/NA	Analysis	150.1		1	152486	10/28/14 11:18	JWM	TAL SL
Total/NA	Analysis	160.1		1	154285	11/03/14 10:20	BAT	TAL SL
Total/NA	Analysis	300.0		1	153094	10/28/14 21:41	AMF	TAL SL
Total/NA	Analysis	300.0	DL	20	153094	10/28/14 21:56	AMF	TAL SL
Total/NA	Analysis	310.1		1	153305	10/31/14 11:18	BAT	TAL SL
Total/NA	Prep	Evaporation			153948	11/04/14 09:08	JH	TAL SL
Total/NA	Analysis	9310		1	154305	11/05/14 07:21	AS1	TAL SL
Total/NA	Prep	ExtChrom			153826	11/03/14 11:01	SCB	TAL SL
Total/NA	Analysis	A-01-R		1	154413	11/04/14 21:14	MLK	TAL SL
Total/NA	Prep	ExtChrom			154805	11/07/14 09:02	SCB	TAL SL
Total/NA	Analysis	A-01-R		1	154917	11/07/14 17:41	MLK	TAL SL

Laboratory References:

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Certification Summary

Client: Weston Solutions, Inc.
Project/Site: START Site in New Mexico

TestAmerica Job ID: 160-9071-1

Laboratory: TestAmerica St. Louis

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	MO00054	06-30-15
California	NELAP	9	2886	03-31-15
Connecticut	State Program	1	PH-0241	03-31-15
Florida	NELAP	4	E87689	06-30-15
Illinois	NELAP	5	200023	11-30-15
Iowa	State Program	7	373	12-01-16
Kansas	NELAP	7	E-10236	03-31-15 *
Kentucky (DW)	State Program	4	90125	12-31-15
L-A-B	DoD ELAP		L2305	01-10-16
Louisiana	NELAP	6	LA150017	12-31-16
Maryland	State Program	3	310	09-30-15
Missouri	State Program	7	780	06-30-15
Nevada	State Program	9	MO000542013-1	07-31-15
New Jersey	NELAP	2	MO002	06-30-15
New Mexico	State Program	6		06-30-10 *
New York	NELAP	2	11616	03-31-15 *
North Dakota	State Program	8	R207	06-30-15
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-15
Pennsylvania	NELAP	3	68-00540	02-28-15 *
South Carolina	State Program	4	85002001	06-30-15
Texas	NELAP	6	T104704193-13-6	07-31-15
USDA	Federal		P330-07-00122	01-09-17
Utah	NELAP	8	MO000542013-5	07-31-15
Virginia	NELAP	3	460230	06-14-15
Washington	State Program	10	C592	08-30-15
West Virginia DEP	State Program	3	381	08-31-15

* Certification renewal pending - certification considered valid.

Method Summary

Client: Weston Solutions, Inc.
Project/Site: START Site in New Mexico

TestAmerica Job ID: 160-9071-1

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	TAL SL
7470A	Mercury (CVAA)	SW846	TAL SL
150.1	pH (Electrometric)	MCAWW	TAL SL
160.1	Solids, Total Dissolved (TDS)	MCAWW	TAL SL
300.0	Anions, Ion Chromatography	MCAWW	TAL SL
310.1	Alkalinity	MCAWW	TAL SL
9310	Gross Alpha / Beta (GFPC)	SW846	TAL SL
A-01-R	Isotopic Uranium (Alpha Spectrometry)	DOE	TAL SL
A-01-R	Isotopic Thorium (Alpha Spectrometry)	DOE	TAL SL
GFPC_SUM			TAL SL

Protocol References:

DOE = U.S. Department of Energy

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Weston Solutions, Inc.
Project/Site: START Site in New Mexico

TestAmerica Job ID: 160-9071-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
160-9071-1	SMC-09-20141027-21	Water	10/27/14 10:55	10/28/14 09:10

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
82232-334_00001	06/03/60	Eckert & Ziegler, Lot 82232-334			(Purchased Reagent)		Am-241	7.281 Bq
							Pu-239	7.137 Bq
							Thorium-230	7.63 Bq
82233-334_00001	06/03/60	Eckert & Zigler, Lot 82233-334			(Purchased Reagent)		Am-241	5.114 Bq
							Pu-239	6.064 Bq
							Thorium-230	4.95 Bq
82234-334_00001	06/02/60	Eckert & Zigler, Lot 82234-334			(Purchased Reagent)		Am-241	5.652 Bq
							Pu-239	5.936 Bq
							Thorium-230	5.685 Bq
82240-334_00001	06/08/60	Eckert & Ziegler, Lot 82240-334			(Purchased Reagent)		Am-241	8.298 Bq
							Pu-239	7.163 Bq
							Thorium-230	6.304 Bq
82241-334_00001	06/08/60	Eckert & Ziegler, Lot 82241-334			(Purchased Reagent)		Am-241	6.638 Bq
							Pu-239	6.797 Bq
							Thorium-230	6.629 Bq
82242-334_00001	06/08/60	Eckert & Ziegler, Lot 82242-334			(Purchased Reagent)		Am-241	7.145 Bq
							Pu-239	6.414 Bq
							Thorium-230	6.583 Bq
82245-334_00001	06/09/60	Eckert & Ziegler, Lot 82245-334			(Purchased Reagent)		Am-241	5.528 Bq
							Pu-239	5.437 Bq
							Thorium-230	6.727 Bq
82246-334_00001	06/09/60	Eckert & Ziegler, Lot 82246-334			(Purchased Reagent)		Am-241	6.002 Bq
							Pu-239	5.353 Bq
							Thorium-230	5.57 Bq
82247-334_00001	06/10/60	Eckert & Ziegler, Lot 82247-334			(Purchased Reagent)		Am-241	6.291 Bq
							Pu-239	5.746 Bq
							Thorium-230	6.251 Bq
Alk Int._00009	02/19/15	08/19/14	DI Water, Lot 081914	1000 mL	Sodium Carb_00005	1 g	Alkalinity	1000 mg/L
							Bicarbonate Alkalinity as CaCO3	1000 mg/L
.Sodium Carb_00005	12/08/16	Malinckrodt, Lot K13607			(Purchased Reagent)		Alkalinity	100 %
							Bicarbonate Alkalinity as CaCO3	100 %
Hg QC Int._00440	11/08/14	11/07/14	2% Nitric Acid, Lot 377355	100 mL	HG QC_00005	0.1 mL	Mercury	0.1 ug/mL
.HG QC_00005	09/15/15	Leeman Labs, Lot 090414			(Purchased Reagent)		Mercury	100 ug/mL
HNO3_00095	09/18/15	Marcon Chemicals, Lot 80824			(Purchased Reagent)		Nitric acid	16 mol/L
IC 2nd Source_00006	07/01/15	Inorganic Ventures, Lot H2-MEB536023			(Purchased Reagent)		Bromide	5000 ug/L
							Chloride	5000 ug/L
							Fluoride	2500 ug/L
							Nitrate as N	1000 ug/L
							Nitrite as N	400 ug/L
							Orthophosphate	20000 ug/L
							Sulfate	20000 ug/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
IC Cal High_00030	10/01/15	Inorganic Ventures, Lot H2-MEB549027			(Purchased Reagent)		Bromide	5000 ug/L
							Chloride	5000 ug/L
							Fluoride	2500 ug/L
							Nitrate as N	1000 ug/L
							Nitrite as N	400 ug/L
							Orthophosphate	20000 ug/L
							Sulfate	20000 ug/L
ICP CAL1/LLC_00019	12/04/14	11/04/14	5% HCl/5%HN03, Lot 465252	1000 mL	ICPC13 LLC A_00003	2 mL	Aluminum	0.2 ug/mL
							Arsenic	0.01 ug/mL
							Barium	0.05 ug/mL
							Beryllium	0.005 ug/mL
							Boron	0.05 ug/mL
							Cadmium	0.005 ug/mL
							Calcium	1 ug/mL
							Chromium	0.01 ug/mL
							Cobalt	0.05 ug/mL
							Copper	0.025 ug/mL
							Iron	0.1 ug/mL
							Lead	0.01 ug/mL
							Magnesium	1 ug/mL
							Manganese	0.015 ug/mL
							Nickel	0.04 ug/mL
							Phosphorus	0.25 ug/mL
							Potassium	5 ug/mL
							Selenium	0.015 ug/mL
							Sodium	1 ug/mL
							Thallium	0.02 ug/mL
							Uranium	0.5 ug/mL
							Vanadium	0.05 ug/mL
							Zinc	0.02 ug/mL
					ICPC13 LLC B_00002	2 mL	Antimony	0.01 ug/mL
							Molybdenum	0.04 ug/mL
							Silicon	0.4 ug/mL
							Silver	0.01 ug/mL
							Tin	0.1 ug/mL
							Titanium	0.02 ug/mL
.ICPC13 LLC A_00003	09/01/15	AccuScience, Lot 1064407			(Purchased Reagent)		Aluminum	100 ug/mL
							Arsenic	5 ug/mL
							Barium	25 ug/mL
							Beryllium	2.5 ug/mL
							Boron	25 ug/mL
							Cadmium	2.5 ug/mL
							Calcium	500 ug/mL
							Chromium	5 ug/mL
							Cobalt	25 ug/mL
							Copper	12.5 ug/mL

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Iron	50 ug/mL
							Lead	5 ug/mL
							Magnesium	500 ug/mL
							Manganese	7.5 ug/mL
							Nickel	20 ug/mL
							Phosphorus	125 ug/mL
							Potassium	2500 ug/mL
							Selenium	7.5 ug/mL
							Sodium	500 ug/mL
							Thallium	10 ug/mL
							Uranium	250 ug/mL
							Vanadium	25 ug/mL
							Zinc	10 ug/mL
.ICPC13 LLC B_00002	09/01/15		AccuScience, Lot 1064407		(Purchased Reagent)		Antimony	5 ug/mL
							Molybdenum	20 ug/mL
							Silicon	200 ug/mL
							Silver	5 ug/mL
							Tin	50 ug/mL
							Titanium	10 ug/mL
ICP CAL2/CCV_00031	12/04/14	11/04/14	5% HCl/5@HN03, Lot 465252	1000 mL	ICPC13 CAL A_00002	5 mL	Antimony	1 ug/mL
							Molybdenum	1 ug/mL
							Silicon	5 ug/mL
							Silver	1 ug/mL
							Tin	5 ug/mL
							Titanium	5 ug/mL
					ICPC13 CAL B_00002	5 mL	Phosphorus	50 ug/mL
							Potassium	50 ug/mL
							Sodium	50 ug/mL
					ICPC13 CAL C_00002	5 mL	Aluminum	50 ug/mL
							Calcium	50 ug/mL
							Iron	50 ug/mL
							Magnesium	50 ug/mL
					ICPC13 CAL D_00002	5 mL	Barium	5 ug/mL
							Boron	5 ug/mL
							Lead	5 ug/mL
							Uranium	5 ug/mL
							Vanadium	5 ug/mL
							Zinc	5 ug/mL
					ICPC13 CAL E_00002	5 mL	Arsenic	5 ug/mL
							Beryllium	5 ug/mL
							Cadmium	5 ug/mL
							Chromium	5 ug/mL
							Cobalt	5 ug/mL
							Copper	5 ug/mL
							Manganese	5 ug/mL
							Nickel	5 ug/mL
							Selenium	1 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Thallium	1 ug/mL
.ICPC13 CAL A_00002	09/01/15		AccuScience, Lot 1064528		(Purchased Reagent)		Antimony	200 ug/mL
							Molybdenum	200 ug/mL
							Silicon	1000 ug/mL
							Silver	200 ug/mL
							Tin	1000 ug/mL
							Titanium	1000 ug/mL
.ICPC13 CAL B_00002	09/01/15		AccuScience, Lot 1064528		(Purchased Reagent)		Phosphorus	10000 ug/mL
							Potassium	10000 ug/mL
							Sodium	10000 ug/mL
.ICPC13 CAL C_00002	09/01/15		AccuScience, Lot 1064535		(Purchased Reagent)		Aluminum	10000 ug/mL
							Calcium	10000 ug/mL
							Iron	10000 ug/mL
							Magnesium	10000 ug/mL
.ICPC13 CAL D_00002	09/01/15		AccuScience, Lot 1064535		(Purchased Reagent)		Barium	1000 ug/mL
							Boron	1000 ug/mL
							Lead	1000 ug/mL
							Uranium	1000 ug/mL
							Vanadium	1000 ug/mL
							Zinc	1000 ug/mL
.ICPC13 CAL E_00002	09/01/15		AccuScience, Lot 1064534		(Purchased Reagent)		Arsenic	1000 ug/mL
							Beryllium	1000 ug/mL
							Cadmium	1000 ug/mL
							Chromium	1000 ug/mL
							Cobalt	1000 ug/mL
							Copper	1000 ug/mL
							Manganese	1000 ug/mL
							Nickel	1000 ug/mL
							Selenium	200 ug/mL
							Thallium	200 ug/mL
ICP CAL3\LRC_00017	12/04/14	11/04/14	5% HCl /5%HN03, Lot 465252	1000 mL	ICPC13 CAL A_00002	10 mL	Antimony	2 ug/mL
							Molybdenum	2 ug/mL
							Silicon	10 ug/mL
							Silver	2 ug/mL
							Tin	10 ug/mL
							Titanium	10 ug/mL
					ICPC13 CAL B_00002	10 mL	Phosphorus	100 ug/mL
							Potassium	100 ug/mL
							Sodium	100 ug/mL
					ICPC13 CAL C_00002	10 mL	Aluminum	100 ug/mL
							Calcium	100 ug/mL
							Iron	100 ug/mL
							Magnesium	100 ug/mL
					ICPC13 CAL D_00002	10 mL	Barium	10 ug/mL
							Boron	10 ug/mL
							Lead	10 ug/mL
							Uranium	10 ug/mL

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Vanadium	10 ug/mL
							Zinc	10 ug/mL
					ICPC13 CAL E_00002	10 mL	Arsenic	10 ug/mL
							Beryllium	10 ug/mL
							Cadmium	10 ug/mL
							Chromium	10 ug/mL
							Cobalt	10 ug/mL
							Copper	10 ug/mL
							Manganese	10 ug/mL
							Nickel	10 ug/mL
							Selenium	2 ug/mL
							Thallium	2 ug/mL
.ICPC13 CAL A_00002	09/01/15		AccuScience, Lot 1064528		(Purchased Reagent)		Antimony	200 ug/mL
							Molybdenum	200 ug/mL
							Silicon	1000 ug/mL
							Silver	200 ug/mL
							Tin	1000 ug/mL
							Titanium	1000 ug/mL
.ICPC13 CAL B_00002	09/01/15		AccuScience, Lot 1064528		(Purchased Reagent)		Phosphorus	10000 ug/mL
							Potassium	10000 ug/mL
							Sodium	10000 ug/mL
.ICPC13 CAL C_00002	09/01/15		AccuScience, Lot 1064535		(Purchased Reagent)		Aluminum	10000 ug/mL
							Calcium	10000 ug/mL
							Iron	10000 ug/mL
							Magnesium	10000 ug/mL
.ICPC13 CAL D_00002	09/01/15		AccuScience, Lot 1064535		(Purchased Reagent)		Barium	1000 ug/mL
							Boron	1000 ug/mL
							Lead	1000 ug/mL
							Uranium	1000 ug/mL
							Vanadium	1000 ug/mL
							Zinc	1000 ug/mL
.ICPC13 CAL E_00002	09/01/15		AccuScience, Lot 1064534		(Purchased Reagent)		Arsenic	1000 ug/mL
							Beryllium	1000 ug/mL
							Cadmium	1000 ug/mL
							Chromium	1000 ug/mL
							Cobalt	1000 ug/mL
							Copper	1000 ug/mL
							Manganese	1000 ug/mL
							Nickel	1000 ug/mL
							Selenium	200 ug/mL
							Thallium	200 ug/mL
ICP ICV_00014	11/27/14	10/27/14	5% Nitric Acid, Lot 465252	1000 mL	ICPC ICV 1_00002	5 mL	Antimony	1 ug/mL
							Molybdenum	1 ug/mL
							Silicon	5 ug/mL
							Tin	5 ug/mL
							Titanium	5 ug/mL
					ICPC ICV 3_00002	5 mL	Aluminum	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Calcium	50 ug/mL
							Iron	50 ug/mL
							Sodium	50 ug/mL
					ICPC ICV 4_00002	5 mL	Arsenic	5 ug/mL
							Barium	5 ug/mL
							Beryllium	5 ug/mL
							Boron	5 ug/mL
							Cadmium	5 ug/mL
							Chromium	5 ug/mL
							Cobalt	5 ug/mL
							Copper	5 ug/mL
							Lead	5 ug/mL
							Manganese	5 ug/mL
							Nickel	5 ug/mL
							Phosphorus	5 ug/mL
							Selenium	1 ug/mL
							Silver	1 ug/mL
							Thallium	1 ug/mL
							Uranium	5 ug/mL
							Vanadium	5 ug/mL
							Zinc	5 ug/mL
					ICPC ICV2_00002	5 mL	Magnesium	50 ug/mL
							Potassium	50 ug/mL
.ICPC ICV 1_00002	11/01/15	Inorganic Venures, Lot H2-MEB550054			(Purchased Reagent)		Antimony	200 ug/mL
							Molybdenum	200 ug/mL
							Silicon	1000 ug/mL
							Tin	1000 ug/mL
							Titanium	1000 ug/mL
.ICPC ICV 3_00002	11/01/15	Inorganic Ventures, Lot H2-MEB550055			(Purchased Reagent)		Aluminum	10000 ug/mL
							Calcium	10000 ug/mL
							Iron	10000 ug/mL
							Sodium	10000 ug/mL
.ICPC ICV 4_00002	11/01/15	Inorganic Ventures, Lot H2-MEB5500053			(Purchased Reagent)		Arsenic	1000 ug/mL
							Barium	1000 ug/mL
							Beryllium	1000 ug/mL
							Boron	1000 ug/mL
							Cadmium	1000 ug/mL
							Chromium	1000 ug/mL
							Cobalt	1000 ug/mL
							Copper	1000 ug/mL
							Lead	1000 ug/mL
							Manganese	1000 ug/mL
							Nickel	1000 ug/mL
							Phosphorus	1000 ug/mL
							Selenium	200 ug/mL
							Silver	200 ug/mL
							Thallium	200 ug/mL
							Uranium	1000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Vanadium	1000 ug/mL
							Zinc	1000 ug/mL
.ICPC ICV2_00002	11/01/15	Inorganic Ventures, Lot H2-MEB550056			(Purchased Reagent)		Magnesium	10000 ug/mL
							Potassium	10000 ug/mL
ICPC MIX AB_00047	12/04/14	11/04/14	5% HCl /5%HN03, Lot 465252	1000 mL	ICPC13 AB 1_00002	5 mL	Arsenic	2.5 ug/mL
							Barium	2.5 ug/mL
							Beryllium	2.5 ug/mL
							Boron	2.5 ug/mL
							Lead	2.5 ug/mL
							Selenium	0.5 ug/mL
							Uranium	2.5 ug/mL
							Vanadium	2.5 ug/mL
							Zinc	2.5 ug/mL
					ICPC13 AB 2_00002	5 mL	Antimony	0.5 ug/mL
							Cadmium	2.5 ug/mL
							Chromium	2.5 ug/mL
							Cobalt	2.5 ug/mL
							Copper	2.5 ug/mL
							Manganese	2.5 ug/mL
							Molybdenum	0.5 ug/mL
							Nickel	2.5 ug/mL
							Silicon	2.5 ug/mL
							Silver	0.5 ug/mL
							Thallium	0.5 ug/mL
							Tin	2.5 ug/mL
							Titanium	2.5 ug/mL
					ICPC13 ICSA 1_00002	5 mL	Phosphorus	100 ug/mL
							Potassium	100 ug/mL
							Sodium	100 ug/mL
					ICPC13 ICSA 2_00002	5 mL	Aluminum	100 ug/mL
							Calcium	100 ug/mL
							Iron	100 ug/mL
							Magnesium	100 ug/mL
.ICPC13 AB 1_00002	09/01/15	AccuScience, Lot 1064359			(Purchased Reagent)		Arsenic	500 ug/mL
							Barium	500 ug/mL
							Beryllium	500 ug/mL
							Boron	500 ug/mL
							Lead	500 ug/mL
							Selenium	100 ug/mL
							Uranium	500 ug/mL
							Vanadium	500 ug/mL
							Zinc	500 ug/mL
.ICPC13 AB 2_00002	09/01/15	AccuScience, Lot 1064359			(Purchased Reagent)		Antimony	100 ug/mL
							Cadmium	500 ug/mL
							Chromium	500 ug/mL
							Cobalt	500 ug/mL
							Copper	500 ug/mL

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Manganese	500 ug/mL
							Molybdenum	100 ug/mL
							Nickel	500 ug/mL
							Silicon	500 ug/mL
							Silver	100 ug/mL
							Thallium	100 ug/mL
							Tin	500 ug/mL
							Titanium	500 ug/mL
.ICPC13 ICSA 1_00002	09/01/15		AccuScience, Lot 1064353		(Purchased Reagent)		Phosphorus	20000 ug/mL
							Potassium	20000 ug/mL
							Sodium	20000 ug/mL
.ICPC13 ICSA 2_00002	09/01/15		AccuScience, Lot 1064353		(Purchased Reagent)		Aluminum	20000 ug/mL
							Calcium	20000 ug/mL
							Iron	20000 ug/mL
							Magnesium	20000 ug/mL
ICPC MIX ICSA_00043	12/04/14	11/04/14	5% HCl/5%HN03, Lot 465252	1000 mL	ICPC13 ICSA 1_00002	5 mL	Phosphorus	100 ug/mL
							Potassium	100 ug/mL
							Sodium	100 ug/mL
					ICPC13 ICSA 2_00002	5 mL	Aluminum	100 ug/mL
							Calcium	100 ug/mL
							Iron	100 ug/mL
							Magnesium	100 ug/mL
.ICPC13 ICSA 1_00002	09/01/15		AccuScience, Lot 1064353		(Purchased Reagent)		Phosphorus	20000 ug/mL
							Potassium	20000 ug/mL
							Sodium	20000 ug/mL
.ICPC13 ICSA 2_00002	09/01/15		AccuScience, Lot 1064353		(Purchased Reagent)		Aluminum	20000 ug/mL
							Calcium	20000 ug/mL
							Iron	20000 ug/mL
							Magnesium	20000 ug/mL
PH Buffer 7_00048	09/05/15		Ricca, Lot 2405557		(Purchased Reagent)		pH	7 NONE
PREP 1 and 2_00005	08/28/15		AccuScience, Lot 1063960		(Purchased Reagent)		Aluminum	2000 mg/L
							Antimony	100 mg/L
							Arsenic	200 mg/L
							Barium	200 mg/L
							Beryllium	200 mg/L
							Bi	200 mg/L
							Boron	400 mg/L
							Cadmium	200 mg/L
							Calcium	2000 mg/L
							Chromium	200 mg/L
							Cobalt	200 mg/L
							Copper	200 mg/L
							Iron	2000 mg/L
							Lead	200 mg/L
							Li	200 mg/L
							Magnesium	2000 mg/L

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Manganese	200 mg/L
							Molybdenum	100 mg/L
							Nb	100 mg/L
							Nickel	200 mg/L
							Phosphorus	200 mg/L
							Potassium	2000 mg/L
							Selenium	100 mg/L
							Silver	40 mg/L
							Sm	200 mg/L
							Sodium	2000 mg/L
							Sr	200 mg/L
							Sulfur	2000 mg/L
							Th	200 mg/L
							Thallium	40 mg/L
							Tin	200 mg/L
							Titanium	200 mg/L
							Uranium	200 mg/L
							Vanadium	200 mg/L
							W	200 mg/L
							Zinc	200 mg/L
							Zr	200 mg/L
PREP 1 and 2_00006	11/07/15		AccuScience, Lot 1067570		(Purchased Reagent)		Aluminum	2000 mg/L
							Antimony	100 mg/L
							Arsenic	200 mg/L
							Barium	200 mg/L
							Beryllium	200 mg/L
							Bi	200 mg/L
							Boron	400 mg/L
							Cadmium	200 mg/L
							Calcium	2000 mg/L
							Chromium	200 mg/L
							Cobalt	200 mg/L
							Copper	200 mg/L
							Iron	2000 mg/L
							Lead	200 mg/L
							Li	200 mg/L
							Magnesium	2000 mg/L
							Manganese	200 mg/L
							Molybdenum	100 mg/L
							Nb	100 mg/L
							Nickel	200 mg/L
							Phosphorus	200 mg/L
							Potassium	2000 mg/L
							Selenium	100 mg/L
							Silver	40 mg/L
							Sm	200 mg/L
							Sodium	2000 mg/L

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Sr	200 mg/L
							Sulfur	2000 mg/L
							Th	200 mg/L
							Thallium	40 mg/L
							Tin	200 mg/L
							Titanium	200 mg/L
							Uranium	200 mg/L
							Vanadium	200 mg/L
							W	200 mg/L
							Zinc	200 mg/L
							Zr	200 mg/L
Sr-90_00004							Gross Alpha	
					Sr-90_00001	5.0139 g	Gross Beta	45120.6 dpm/mL
							Sr	22560.3 dpm/mL
							Sr-90	22560.3 dpm/mL
.Sr-90_00001	09/17/59	Eckert & Ziegler, Lot 80573-334			(Purchased Reagent)		Gross Beta	14998.5 Bq/g
							Sr	7499.25 Bq/g
							Sr-90	7499.25 Bq/g
Sr-90_00018							Gross Alpha	
					Sr-90_00017	4.9997 g	Gross Beta	44774.2 dpm/mL
							Sr-90	22387.1 dpm/mL
.Sr-90_00017	11/29/62	Analytics, Lot 92352			(Purchased Reagent)		Gross Beta	14925.6 Bq/g
							Sr-90	7462.82 Bq/g
Sr-90_00023	04/23/15	04/22/14	0.1M HCl, Lot n/a	500 mL	Sr-90_00018	0.5 mL	Gross Beta	44.7742 dpm/mL
							Sr-90	22.3871 dpm/mL
.Sr-90_00018	11/29/62	11/28/12	0.1M HCL, Lot 0	100 mL	Sr-90_00017	4.9997 g	Gross Beta	44774.2 dpm/mL
							Sr-90	22387.1 dpm/mL
..Sr-90_00017	11/29/62	Analytics, Lot 92352			(Purchased Reagent)		Gross Beta	14925.6 Bq/g
							Sr-90	7462.82 Bq/g
STD SI_00009	10/01/15	INORGANIC VENTURE, Lot G2-SI03029			(Purchased Reagent)		Silicon	1000 ug/mL
TDS LCS_00036	09/02/15	09/02/14	DI Water, Lot 090214	1000 mL	NaCl_00002	0.5 g	Total Dissolved Solids (TDS)	500 mg/L
.NaCl_00002	02/01/22	Mallinckrodt, Lot J280620			(Purchased Reagent)		Total Dissolved Solids (TDS)	1 g/g
Th-229_00018	09/02/15	08/20/14	0.1M HNO3, Lot n/a	500 mL	Th-229_00017	15 mL	At-217	67.2296 dpm/mL
							Thorium-229	67.2296 dpm/mL
.Th-229_00017	08/06/64	08/20/14	0.1M HNO3, Lot n/a	100 mL	Th-229_00016	5.0464 g	At-217	2240.99 dpm/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Thorium-229	2240.99 dpm/mL
..Th-229_00016	08/06/64	Analytics, Lot 97790			(Purchased Reagent)		At-217	740.127 Bq/g
							Thorium-229	740.127 Bq/g
Th-230_00003							Gross Beta	
					Th-230_00001	5.0878 g	Gross Alpha	2397.01 dpm/mL
							Thorium-230	2397.01 dpm/mL
.Th-230_00001	04/11/61	Eckert & Ziegler, Lot 84460-334			(Purchased Reagent)		Gross Alpha	785.217 Bq/g
							Thorium-230	785.217 Bq/g
Th-230_00016							Gross Beta	
					Th-230_00015	5.0489 g	Gross Alpha	2374.49 dpm/mL
							Thorium-230	2374.49 dpm/mL
.Th-230_00015	11/29/62	Analytics, Lot 92523			(Purchased Reagent)		Gross Alpha	783.829 Bq/g
							Thorium-230	783.829 Bq/g
Th-230_00023	01/28/15	02/04/13	1M HNO3, Lot 0	200 mL	Th-230_00006	4 mL	Thorium-230	47.9403 dpm/mL
.Th-230_00006	04/11/61	06/24/11	1M HNO3, Lot 0	100 mL	Th-230_00002	5.0878 g	Thorium-230	2397.01 dpm/mL
..Th-230_00002	04/11/61	Eckert & Ziegler, Lot 84460-334			(Purchased Reagent)		Thorium-230	785.217 Bq/g
Th-230_00024	09/25/15	09/22/14	1M HNO3, Lot 0	250 mL	Th-230_00019	2.5 mL	Gross Alpha	22.2823 dpm/mL
							Thorium-230	22.2823 dpm/mL
.Th-230_00019	08/08/63	08/13/13	1M HNO3, Lot n/a	100 mL	Th-230_00018	5.0731 mL	Gross Alpha	2228.23 dpm/mL
							Thorium-230	2228.23 dpm/mL
..Th-230_00018	08/08/63	Eckert & Ziegler Analytics, Lot 92776			(Purchased Reagent)		Gross Alpha	43922.5 dpm/g
							Thorium-230	43922.5 dpm/g
U-232_00028	09/30/15	09/23/14	DI Water, Lot 0	250 mL	U-232_00009	2 mL	Uranium-232	82.2457 dpm/mL
.U-232_00009	08/25/61	08/29/11	1M HNO3, Lot 0	100 mL	U-232_00003	5.1609 g	Uranium-232	10280.7 dpm/mL
..U-232_00003	08/25/61	Eckert & Ziegler, Lot 85539-334			(Purchased Reagent)		Uranium-232	3320.07 Bq/g
UNAT Spike_00001	11/13/14	11/11/13	1M HNO3, Lot n/a	200 mL	UNAT Parent_00001	20 mL	Uranium-233/234	70.6912 dpm/mL
							Uranium-235/236	3.37064 dpm/mL
							Uranium-238	72.265 dpm/mL
.UNAT Parent_00001	03/30/58	05/03/13	1M HNO3, Lot n/a	200 mL	UNAT Ampoule_00001	19.2509 g	Uranium-233/234	706.912 dpm/mL
							Uranium-235/236	33.7064 dpm/mL
							Uranium-238	722.65 dpm/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..UNAT Ampoule_00001	03/30/58	New Brunswick Lab, Lot CRM 145			(Purchased Reagent)		Uranium-233/234	7344.2 dpm/g
							Uranium-235/236	350.18 dpm/g
							Uranium-238	7507.7 dpm/g

Reagent

82232-334_00001

Eckert & Ziegler
Analytics

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318
Tel 404•352•8677
Fax 404•352•2837
www.analyticsinc.com

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

82232-334

24.1 mm Diameter x 0.65 mm Thick Stainless Steel Disk

Customer: Test America/St. Louis
P.O. No.: 2355182, Item 1

This standard radionuclide source was prepared by electrodeposition onto a stainless steel disk. Total alpha activity was determined with a ZnS scintillation detector. Radionuclide activities and impurities were calculated from the total activity and the fraction of activity for each radionuclide determined by alpha spectroscopy. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 1, February, 1979, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Reference Date: 3-Jun-2010 12:00 PM EST

Isotope	Activity (Bq)	Energy Range (keV)	Half-Life, years	Uncertainty* Type (%) u_A	u_B	U
Th-230	7.630E+00	4420-4800	7.540E+04	0.7	1.1	2.6
Pu-239	7.137E+00	4950-5240	2.410E+04	0.7	1.1	2.6
Am-241	7.281E+00	5280-5600	4.326E+02	0.7	1.1	2.6
Total Activity	2.210E+01	3000-8000		0.4	1.1	2.3

***Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

(Certificate continued on reverse side)

ACCREDITED SOURCE CALIBRATION LABORATORY HEALTH PHYSICS SOCIETY FOUNDED 1956

Comments:
Diameter of active area: 19 mm. Disk mounted on customer supplied disk 31.8 mm diameter x 0.45 mm thick stainless steel disk.

CAUTION: Active material deposited on the unmarked surface. Handle carefully to prevent scratching or damaging the active surface of this source (i.e., use Teflon coated forceps). Store in the container provided when not in use.

Source Calibrated by: _____
A. Chen, Spectroscopist

QA Approved: _____ Date: 06-24-2010
E. A. Taskaev, QA Manager Alternate

Reagent

82233-334_00001

Eckert & Ziegler
Analytics

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318
Tel 404•352•8677
Fax 404•352•2837
www.analyticsinc.com

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

82233-334

24.1 mm Diameter x 0.65 mm Thick Stainless Steel Disk

Customer: Test America/St. Louis
P.O. No.: 2355182, Item 1

This standard radionuclide source was prepared by electrodeposition onto a stainless steel disk. Total alpha activity was determined with a ZnS scintillation detector. Radionuclide activities and impurities were calculated from the total activity and the fraction of activity for each radionuclide determined by alpha spectroscopy. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 1, February, 1979, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Reference Date: 3-Jun-2010 12:00 PM EST

Isotope	Activity (Bq)	Energy Range (keV)	Half-Life, years	Uncertainty* Type (%) u_A	u_B	U
Th-230	4.950E+00	4420-4800	7.540E+04	0.8	1.1	2.7
Pu-239	6.064E+00	4950-5240	2.410E+04	0.7	1.1	2.6
Am-241	5.114E+00	5280-5600	4.326E+02	0.8	1.1	2.7
Total Activity	1.616E+01	3000-8000		0.1	1.1	2.2

***Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

(Certificate continued on reverse side)

ACCREDITED SOURCE CALIBRATION LABORATORY HEALTH PHYSICS SOCIETY FOUNDED 1956

Comments:
Diameter of active area: 19 mm. Disk mounted on customer supplied disk 31.8 mm diameter x 0.45 mm thick stainless steel disk.

CAUTION: Active material deposited on the unmarked surface. Handle carefully to prevent scratching or damaging the active surface of this source (i.e., use Teflon coated forceps). Store in the container provided when not in use.

Source Calibrated by: _____
A. Chen, Spectroscopist

QA Approved: _____ Date: 06-24-2010
E. A. Taskaev, QA Manager Alternate

Reagent

82234-334_00001

Eckert & Ziegler
Analytics

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318
Tel 404•352•8677
Fax 404•352•2837
www.analyticsinc.com

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

82234-334

24.1 mm Diameter x 0.65 mm Thick Stainless Steel Disk

Customer: Test America/St. Louis
P.O. No.: 2355182, Item 1

This standard radionuclide source was prepared by electrodeposition onto a stainless steel disk. Total alpha activity was determined with a ZnS scintillation detector. Radionuclide activities and impurities were calculated from the total activity and the fraction of activity for each radionuclide determined by alpha spectroscopy. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 1, February, 1979, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Reference Date: 2-Jun-2010 12:00 PM EST

Isotope	Activity (Bq)	Energy Range (keV)	Half-Life, years	Uncertainty* Type (%) u_A	u_B	U
Th-230	5.685E+00	4420-4800	7.540E+04	0.9	1.1	2.8
Pu-239	5.936E+00	4950-5240	2.410E+04	0.9	1.1	2.8
Am-241	5.652E+00	5280-5600	4.326E+02	0.9	1.1	2.8
Total Activity	1.732E+01	3000-8000		0.5	1.1	2.4

***Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

(Certificate continued on reverse side)

ACCREDITED SOURCE CALIBRATION LABORATORY HEALTH PHYSICS SOCIETY FOUNDED 1956

Comments:
Diameter of active area: 19 mm. Disk mounted on customer supplied disk 31.8 mm diameter x 0.45 mm thick stainless steel disk.

CAUTION: Active material deposited on the unmarked surface. Handle carefully to prevent scratching or damaging the active surface of this source (i.e., use Teflon coated forceps). Store in the container provided when not in use.

Source Calibrated by: _____
A. Chen, Spectroscopist

QA Approved: _____ Date: 06-24-2010
E. A. Taskaev, QA Manager Alternate

Reagent

82240-334_00001

Eckert & Ziegler
Analytics

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318
Tel 404•352•8677
Fax 404•352•2837
www.analyticsinc.com

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

82240-334

24.1 mm Diameter x 0.65 mm Thick Stainless Steel Disk

Customer: Test America/St. Louis
P.O. No.: 2355182, Item 1

This standard radionuclide source was prepared by electrodeposition onto a stainless steel disk. Total alpha activity was determined with a ZnS scintillation detector. Radionuclide activities and impurities were calculated from the total activity and the fraction of activity for each radionuclide determined by alpha spectroscopy. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 1, February, 1979, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Reference Date: 8-Jun-2010 12:00 PM EST

Isotope	Activity (Bq)	Energy Range (keV)	Half-Life, years	Uncertainty* Type (%) u_A	u_B	U
Th-230	6.304E+00	4420-4800	7.540E+04	0.9	1.1	2.8
Pu-239	7.163E+00	4950-5240	2.410E+04	0.8	1.1	2.7
Am-241	8.298E+00	5280-5600	4.326E+02	0.8	1.1	2.7
Total Activity	2.182E+01	3000-8000		0.5	1.1	2.4

***Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

(Certificate continued on reverse side)

ACCREDITED SOURCE CALIBRATION LABORATORY HEALTH PHYSICS SOCIETY FOUNDED 1958

Comments:
Diameter of active area: 19 mm. Disk mounted on customer supplied disk 31.8 mm diameter x 0.45 mm thick stainless steel disk.

CAUTION: Active material deposited on the unmarked surface. Handle carefully to prevent scratching or damaging the active surface of this source (i.e., use Teflon coated forceps). Store in the container provided when not in use.

Source Calibrated by: _____
A. Chen, Spectroscopist

QA Approved: _____ Date: 06-24-2010
E. A. Taskaev, QA Manager Alternate

Reagent

82241-334_00001

Eckert & Ziegler
Analytics

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318
Tel 404•352•8677
Fax 404•352•2837
www.analyticsinc.com

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

82241-334

24.1 mm Diameter x 0.65 mm Thick Stainless Steel Disk

Customer: Test America/St. Louis
P.O. No.: 2355182, Item 1

This standard radionuclide source was prepared by electrodeposition onto a stainless steel disk. Total alpha activity was determined with a ZnS scintillation detector. Radionuclide activities and impurities were calculated from the total activity and the fraction of activity for each radionuclide determined by alpha spectroscopy. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 1, February, 1979, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Reference Date: 8-Jun-2010 12:00 PM EST

Isotope	Activity (Bq)	Energy Range (keV)	Half-Life, years	Uncertainty* Type (%) u_A	u_B	U
Th-230	6.629E+00	4420-4800	7.540E+04	0.8	1.1	2.7
Pu-239	6.797E+00	4950-5240	2.410E+04	0.8	1.1	2.7
Am-241	6.638E+00	5280-5600	4.326E+02	0.8	1.1	2.7
Total Activity	2.011E+01	3000-8000		0.4	1.1	2.3

***Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

(Certificate continued on reverse side)

ACCREDITED SOURCE CALIBRATION LABORATORY — HEALTH PHYSICS SOCIETY — FOUNDED 1956

Comments:
Diameter of active area: 19 mm. Disk mounted on customer supplied disk 31.8 mm diameter x 0.45 mm thick stainless steel disk.

CAUTION: Active material deposited on the unmarked surface. Handle carefully to prevent scratching or damaging the active surface of this source (i.e., use Teflon coated forceps). Store in the container provided when not in use.

Source Calibrated by: _____
A. Chen, Spectroscopist

QA Approved: _____ Date: 06-24-2010
E. A. Taskaev, QA Manager Alternate

Reagent

82242-334_00001

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Fax 404•352•2837
www.analyticsinc.com

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

82242-334

24.1 mm Diameter x 0.65 mm Thick Stainless Steel Disk

Customer: Test America/St. Louis
P.O. No.: 2355182, Item 1

This standard radionuclide source was prepared by electrodeposition onto a stainless steel disk. Total alpha activity was determined with a ZnS scintillation detector. Radionuclide activities and impurities were calculated from the total activity and the fraction of activity for each radionuclide determined by alpha spectroscopy. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 1, February, 1979, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Reference Date: 8-Jun-2010 12:00 PM EST

Isotope	Activity (Bq)	Energy Range (keV)	Half-Life, years	Uncertainty* Type (%) u_A	u_B	U
Th-230	6.583E+00	4420-4800	7.540E+04	0.9	1.1	2.8
Pu-239	6.414E+00	4950-5240	2.410E+04	0.9	1.1	2.8
Am-241	7.145E+00	5280-5600	4.326E+02	0.9	1.1	2.8
Total Activity	2.018E+01	3000-8000		0.6	1.1	2.5

***Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

(Certificate continued on reverse side)

ACCREDITED SOURCE CALIBRATION LABORATORY HEALTH PHYSICS SOCIETY FOUNDED 1958

Comments:
Diameter of active area: 19 mm. Disk mounted on customer supplied disk 31.8 mm diameter x 0.45 mm thick stainless steel disk.

CAUTION: Active material deposited on the unmarked surface. Handle carefully to prevent scratching or damaging the active surface of this source (i.e., use Teflon coated forceps). Store in the container provided when not in use.

Source Calibrated by: _____
A. Chen, Spectroscopist

QA Approved: _____ Date: 06-24-2010
E. A. Taskaev, QA Manager Alternate

Reagent

82245-334_00001

Eckert & Ziegler
Analytics

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318
Tel 404•352•8677
Fax 404•352•2837
www.analyticsinc.com

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

82245-334

24.1 mm Diameter x 0.65 mm Thick Stainless Steel Disk

Customer: Test America/St. Louis
P.O. No.: 2355182, Item 1

This standard radionuclide source was prepared by electrodeposition onto a stainless steel disk. Total alpha activity was determined with a ZnS scintillation detector. Radionuclide activities and impurities were calculated from the total activity and the fraction of activity for each radionuclide determined by alpha spectroscopy. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 1, February, 1979, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Reference Date: 9-Jun-2010 12:00 PM EST

Isotope	Activity (Bq)	Energy Range (keV)	Half-Life, years	Uncertainty* Type (%) u_A	u_B	U
Th-230	6.727E+00	4420-4800	7.540E+04	1.0	1.1	3.0
Pu-239	5.437E+00	4950-5240	2.410E+04	1.1	1.1	3.1
Am-241	5.528E+00	5280-5600	4.326E+02	1.1	1.1	3.1
Total Activity	1.773E+01	3000-8000		0.8	1.1	2.7

***Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

(Certificate continued on reverse side)

ACCREDITED SOURCE CALIBRATION LABORATORY — HEALTH PHYSICS SOCIETY — FOUNDED 1956

Comments:
Diameter of active area: 19 mm. Disk mounted on customer supplied disk 31.8 mm diameter x 0.45 mm thick stainless steel disk.

CAUTION: Active material deposited on the unmarked surface. Handle carefully to prevent scratching or damaging the active surface of this source (i.e., use Teflon coated forceps). Store in the container provided when not in use.

Source Calibrated by: _____
A. Chen, Spectroscopist

QA Approved: _____ Date: 06-24-2010
E. A. Taskaev, QA Manager Alternate

Reagent

82246-334_00001

Eckert & Ziegler
Analytics

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318
Tel 404•352•8677
Fax 404•352•2837
www.analyticsinc.com

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

82246-334

24.1 mm Diameter x 0.65 mm Thick Stainless Steel Disk

Customer: Test America/St. Louis
P.O. No.: 2355182, Item 1

This standard radionuclide source was prepared by electrodeposition onto a stainless steel disk. Total alpha activity was determined with a ZnS scintillation detector. Radionuclide activities and impurities were calculated from the total activity and the fraction of activity for each radionuclide determined by alpha spectroscopy. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 1, February, 1979, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Reference Date: 9-Jun-2010 12:00 PM EST

Isotope	Activity (Bq)	Energy Range (keV)	Half-Life, years	Uncertainty* Type (%) u_A	u_B	U
Th-230	5.570E+00	4420-4800	7.540E+04	1.0	1.1	3.0
Pu-239	5.353E+00	4950-5240	2.410E+04	1.0	1.1	3.0
Am-241	6.002E+00	5280-5600	4.326E+02	1.0	1.1	3.0
Total Activity	1.696E+01	3000-8000		0.7	1.1	2.6

***Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

(Certificate continued on reverse side)

ACCREDITED SOURCE CALIBRATION LABORATORY
HEALTH PHYSICS SOCIETY
FOUNDED 1956

Comments:
Diameter of active area: 19 mm. Disk mounted on customer supplied disk 31.8 mm diameter x 0.45 mm thick stainless steel disk.

CAUTION: Active material deposited on the unmarked surface. Handle carefully to prevent scratching or damaging the active surface of this source (i.e., use Teflon coated forceps). Store in the container provided when not in use.

Source Calibrated by: _____
A. Chen, Spectroscopist

QA Approved: _____ Date: 06.24.2010
E. A. Taskaev, QA Manager Alternate

Reagent

82247-334_00001

Eckert & Ziegler
Analytics

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318
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Fax 404•352•2837
www.analyticsinc.com

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

82247-334

24.1 mm Diameter x 0.65 mm Thick Stainless Steel Disk

Customer: Test America/St. Louis
P.O. No.: 2355182, Item 1

This standard radionuclide source was prepared by electrodeposition onto a stainless steel disk. Total alpha activity was determined with a ZnS scintillation detector. Radionuclide activities and impurities were calculated from the total activity and the fraction of activity for each radionuclide determined by alpha spectroscopy. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 1, February, 1979, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Reference Date: 10-Jun-2010 12:00 PM EST

Isotope	Activity (Bq)	Energy Range (keV)	Half-Life, years	Uncertainty* Type (%) u_A	u_B	U
Th-230	6.251E+00	4420-4800	7.540E+04	0.9	1.1	2.8
Pu-239	5.746E+00	4950-5240	2.410E+04	0.9	1.1	2.8
Am-241	6.291E+00	5280-5600	4.326E+02	0.9	1.1	2.8
Total Activity	1.832E+01	3000-8000		0.6	1.1	2.5

***Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

(Certificate continued on reverse side)

ACCREDITED SOURCE CALIBRATION LABORATORY HEALTH PHYSICS SOCIETY FOUNDED 1956

Comments:
Diameter of active area: 19 mm. Disk mounted on customer supplied disk 31.8 mm diameter x 0.45 mm thick stainless steel disk.

CAUTION: Active material deposited on the unmarked surface. Handle carefully to prevent scratching or damaging the active surface of this source (i.e., use Teflon coated forceps). Store in the container provided when not in use.

Source Calibrated by: _____
A. Chen, Spectroscopist

QA Approved: _____ Date: 06-24-2010
E. A. Taskaev, QA Manager Alternate

Reagent

HG QC_00005

PLASMA-PURE ™

Standard Certificate

450487
ID: HG QC_00005
Exp:09/15/15 Prpd:MTS Opn:09/15/14
HG QC 100PPM

Catalog Number:	602-00064	**Lot Number:**	090414
Starting Material:	99.9999% purity Hg metal	**Diluent/Matrix:**	5% HNO_3
Preparation Date:	Sept 14	**Expiration Date:**	Sept 16

Element	**Concentration**
Hg	100.0 ± 0.2 µg/ml

Residual Impurities *	**Concentration**
None Detected	

* **Impurities were determined via ICP Emission Spectroscopy. Only elements detected are reported.**

Traceability

1. **This standard is certified using wet chemistry assay procedures and/or plasma emission spectroscopy, traceable to primary or well-characterized secondary standards. Traceable to:** NIST SRM 3133, Hg Lot#991304
2. **Analytical balances are routinely calibrated using NIST weight sets.**

Certification

Leeman Labs, Inc. certifies that PLASMA-PURE Standards have been formulated to the concentrations listed above (±0.5% of reported value). This certification does not apply and will be considered null and void if PLASMA-PURE Standards are used in a manner or in an environment not consistent with their intended purpose or are modified by the Customer in any manner.

Limitations

THE ABOVE ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, WHETHER EXPRESS OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF MECHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

Limitation of Liability

In no event shall Leeman Labs, Inc. be liable for any indirect, incidental, special, or consequential damages, including loss of profits, revenue, or used incurred by Customer or any third party, whether in an action in contract or tort. Leeman Labs Inc's liability for damages hereunder shall in no event exceed the amounts paid for the PLASMA-PURE Standards.

QC Analyst: BDM

Date: September 4, 2014

QUALITY ISO 9001:2008 NSAI Certified

TELEDYNE LEEMAN LABS
Everywhereyoulook™
6 Wentworth Drive . Hudson, NH 03051
Tel: 603.886.8400 Fax: 603.886.9141

Reagent

IC 2nd Source_00006

INORGANIC VENTURES™
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

395282
ID IC 2nd Source_00006
Exp 07/01/15 Prpd AMF Opn 09/16/14
IC 2nd Source

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number (010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Ion Chromatography Solution
Catalog Number:	STL-ICV-LCS
Lot Number:	H2-MEB536023
Matrix:	H2O
Value / Analyte(s):	20 000 µg/L ea: oPhosphate, Sulfate, 5 000 µg/L ea: Bromide, Chloride, 2 500 µg/L ea: Fluoride, 1 000 µg/L ea: Nitrate_as_N, 400 µg/L ea: Nitrite_as_N

Second Source: Whenever possible, this solution was manufactured from a second set of concentrates in our manufacturing facility.

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Bromide	5 001 ± 28 µg/L	Chloride	5 001 ± 25 µg/L		
Fluoride	2 500 ± 13 µg/L	Nitrate as N	1 000 ± 6 µg/L		
Nitrite as N	400.0 ± 3.1 µg/L	o-Phosphate	20 000.0 ± 90.0 µg/L		
Sulfate	20 000.0 ± 110.0 µg/L				

Certified Density: 0.998 g/mL (measured at 20 ± 1 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Bromide	IC Assay	3184	020701
Bromide	Volhard	999b	999b
Chloride	IC Assay	3182	060925
Chloride	Volhard	999b	999b
Fluoride	Calculated		See Sec. 4.2
Fluoride	IC Assay	3183	050721
Nitrate_as_N	IC Assay	3185	050517
Nitrite_as_N	IC Assay		traceable to SRM 40h
Nitrite_as_N	Calculated	40h	40h
oPhosphate	Calculated		See Sec. 4.2
oPhosphate	IC Assay	3186	090723
Sulfate	Calculated		See Sec. 4.2
Sulfate	IC Assay	3181	080603

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Certified Value $(\bar{x}) = \frac{\Sigma x_i}{n}$

Uncertainty $(\pm) = 2\,[\,\Sigma(s_i)^2\,]^{1/2}$

($\bar{x}$) = mean
x_i = individual results
n = number of measurements
2 = the coverage factor.
$[\,\Sigma(s_i)^2\,]^{1/2}$ = The square root of the sum of the squares of the most common errors (where 's' stands for the standard deviation) from instrumental measurement, density, NIST SRM uncertainty, weighing, dilution to volume, homogeneity, long term stability and short term stability.

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 CHROMATOGRAM

- N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Keep tightly sealed when not in use. Store and use at 20 ± 4°C. Do not pipette from the container. Do not return removed aliquots to container.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

June 25, 2014

11.2 Period of Validity

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is handled and stored in accordance with instructions given in Sec 7.0 and used prior to the date given in Sec 11.3. This certification is nullified if the CRM/RM is damaged, contaminated, or otherwise modified.

11.3 Expiration Date

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Donna Senn
Product Documentation Technician

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

IC Cal High_00030

INORGANIC VENTURES™
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number (010105).

ACCREDITED Testing Laboratory Certificate 883.01 · ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Ion Chromatography Solution
Catalog Number:	STL-CAL-HIGH
Lot Number:	H2-MEB549027
Matrix:	H2O
Value / Analyte(s):	20 000 µg/L ea: oPhosphate, Sulfate, 5 000 µg/L ea: Bromide, Chloride, 2 500 µg/L ea: Fluoride, 1 000 µg/L ea: Nitrate_as_N, 400 µg/L ea: Nitrite_as_N

461494
ID: IC Cal High_00030
Exp: 10/01/15 Prpd: AMF
IC Cal High

461495
ID: IC Cal High_00031
Exp: 10/01/15 Prpd: AMF
IC Cal High

*see TALS for open date.
AF 9-30-14

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Bromide	4 997 ± 31 µg/L	Chloride	4 997 ± 30 µg/L	Fluoride	2 499 ± 12 µg/L
Nitrate as N	1 000 ± 6 µg/L	Nitrite as N	400.0 ± 3.4 µg/L	o-Phosphate	19 990.0 ± 100.0 µg/L
Sulfate	19 980.0 ± 120.0 µg/L				

Certified Density: 0.998 g/mL (measured at 20 ± 1 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Bromide	IC Assay	3184	020701
Bromide	Volhard	999b	999b
Chloride	IC Assay	3182	060925
Chloride	Volhard	999b	999b
Fluoride	IC Assay	3183	050721
Nitrate_as_N	IC Assay	3185	050517
Nitrite_as_N	Calculated		See Sec. 4.2
Nitrite_as_N	IC Assay	40h	40h
oPhosphate	IC Assay	3186	090723
Sulfate	Calculated		See Sec. 4.2
Sulfate	IC Assay	3181	080603

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Certified Value $(\bar{x}) = \frac{\Sigma x_i}{n}$ ($\bar{x}$) = mean

x_i = individual results

n = number of measurements

Uncertainty $(\pm) = 2\ [\ \Sigma(s_i)^2\ ]^{1/2}$ 2 = the coverage factor.

$[\ \Sigma(s_i)^2\ ]^{1/2}$ = The square root of the sum of the squares of the most common errors (where 's' stands for the standard deviation) from instrumental measurement, density, NIST SRM uncertainty, weighing, dilution to volume, homogeneity, long term stability and short term stability.

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 CHROMATOGRAM

- N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Keep tightly sealed when not in use. Store and use at 20 ± 4°C. Do not pipette from the container. Do not return removed aliquots to container.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

September 24, 2014

11.2 Period of Validity

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is handled and stored in accordance with instructions given in Sec 7.0 and used prior to the date given in Sec 11.3. This certification is nullified if the CRM/RM is damaged, contaminated, or otherwise modified.

11.3 Expiration Date EXPIRES 01 OCT 2015

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Zach Saunders
Product Documentation Technician

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

ICPC ICV 1_00002

INORGANIC VENTURES

CERTIFICATE OF ANALYSIS

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34. "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number (010105).

ACCREDITED Testing Laboratory Certificate 583.01

ACCREDITED Reference Material Producer Certificate 583.02

2.0 PRODUCT DESCRIPTION

484077
ID: ICPC ICV 1_00002
Exp: 11/01/15 Prpd: FLC
ICP ICV 1

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	TA-64
Lot Number:	H2-MEB550054
Matrix:	5% (v/v) HNO_3 2.5% (v/v) HF
Value / Analyte(s):	1 000 µg/mL ea: Si, Sn, Ti, 200 µg/mL ea: Mo, Sb

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Antimony	200.0 ± 1.5 µg/mL	Molybdenum	200.0 ± 0.9 µg/mL	Silicon	1 000 ± 8 µg/mL
Tin	1 000 ± 5 µg/mL	Titanium	1 000 ± 7 µg/mL		

Certified Density: 1.040 g/mL (measured at 20 ± 1 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Mo	Calculated		See Sec. 4.2
Mo	ICP Assay	3134	891307
Sb	Calculated		See Sec. 4.2
Sb	ICP Assay	3102A	061229
Si	Calculated		See Sec. 4.2
Si	ICP Assay	3150	071204
Sn	Calculated		See Sec. 4.2
Sn	ICP Assay	3161a	070330
Ti	Calculated		See Sec. 4.2
Ti	ICP Assay	3162a	060808

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Certified Value $(\bar{\bar{x}}) = \frac{\sum x_i}{n}$

($\bar{x}$) = mean
x_i = individual results
n = number of measurements

Uncertainty (±) = $2\ [\ \Sigma(s_i)^2\ ]^{1/2}$

2 = the coverage factor.
$[\ \Sigma(s_i)^2\ ]^{1/2}$ = The square root of the sum of the squares of the most common errors (where 's' stands for the standard deviation) from instrumental measurement, density, NIST SRM uncertainty, weighing, dilution to volume, homogeneity, long term stability and short term stability.

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

- N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Keep tightly sealed when not in use. Store and use at 20 ± 4°C. Do not pipette from the container. Do not return removed aliquots to container.

- **HF Note:** This standard should not be prepared or stored in glass.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

October 16, 2014

11.2 Period of Validity

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is handled and stored in accordance with instructions given in Sec 7.0 and used prior to the date given in Sec 11.3. This certification is nullified if the CRM/RM is damaged, contaminated, or otherwise modified.

11.3 Expiration Date

EXPIRES
01/2015

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Christy Shortridge
Product Documentation Technician

Christy Shortridge

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Brian Alexander

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Paul R Gaines

Reagent

ICPC ICV 3_00002

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel 800.669.6799 540.585.3000
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info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number (010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

484079
ID: ICPC ICV 3_00002*
Exp: 11/01/15 Prpd: FLC
ICPC ICV 3

2.0 PRODUCT DESCRIPTION

Product Code: Multi Analyte Custom Grade Solution

Catalog Number: TA-65

Lot Number: H2-MEB550055

Matrix: 5% (v/v) HNO3

Value / Analyte(s): 10 000 µg/mL ea:
Al, Ca, Fe,
Na

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum	10 000.0 ± 50.0 µg/mL	Calcium	10 000.0 ± 40.0 µg/mL	Iron	10 000.0 ± 50.0 µg/mL
Sodium	10 000.0 ± 40.0 µg/mL				

Certified Density: 1.176 g/mL (measured at 20 ± 1 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Al	ICP Assay	3101a	060502
Al	EDTA	928	928
Ca	ICP Assay	3109a	050825
Ca	EDTA	928	928
Fe	ICP Assay	3126a	051031
Fe	EDTA	928	928
Na	Gravimetric		See Sec. 4.2
Na	ICP Assay	3152a	120715

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Certified Value $(\bar{x}) = \frac{\Sigma x_i}{n}$

$(\bar{x})$ = mean
x_i = individual results
n = number of measurements

Uncertainty $(\pm) = 2\,[\,\Sigma(s_i)^2\,]^{1/2}$

2 = the coverage factor.
$[\,\Sigma(s_i)^2\,]^{1/2}$ = The square root of the sum of the squares of the most common errors (where 's' stands for the standard deviation) from instrumental measurement, density, NIST SRM uncertainty, weighing, dilution to volume, homogeneity, long term stability and short term stability.

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

- N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Keep tightly sealed when not in use. Store and use at 20 ± 4°C. Do not pipette from the container. Do not return removed aliquots to container.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

October 16, 2014

11.2 Period of Validity

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is handled and stored in accordance with instructions given in Sec 7.0 and used prior to the date given in Sec 11.3. This certification is nullified if the CRM/RM is damaged, contaminated, or otherwise modified.

11.3 Expiration Date

EXPIRES
01 NOV 2015

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Christy Shortridge
Product Documentation Technician

Christy Shortridge

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Brian Alexander

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Paul R Gaines

Reagent

ICPC ICV 4_00002

INORGANIC VENTURES™
300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number (010105).

ACCREDITED Testing Laboratory Certificate 883.01 ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

484152
ID: ICPC ICV 4_00002
Exp: 11/01/15 Prpd: FLC
ICPC ICV 4

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	TA-63
Lot Number:	H2-MEB550053
Matrix:	7% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea:

As, B, Ba,
Be, Bi, Cd,
Co, Cr3, Cu,
Li, Mn, Ni,
P, Pb, Sr,
Th, U, V,
Zn,

200 µg/mL ea:
Ag, Se, Tl

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Arsenic	1 000 ± 8 µg/mL	Barium	1 000 ± 5 µg/mL	Beryllium	1 000 ± 5 µg/mL
Bismuth	1 000 ± 6 µg/mL	Boron	1 000 ± 7 µg/mL	Cadmium	1 000 ± 5 µg/mL
Chromium+3	1 000 ± 5 µg/mL	Cobalt	1 000 ± 5 µg/mL	Copper	1 000 ± 7 µg/mL
Lead	1 000 ± 5 µg/mL	Lithium	1 000 ± 7 µg/mL	Manganese	1 000 ± 4 µg/mL
Nickel	1 000 ± 5 µg/mL	Phosphorus	1 000 ± 5 µg/mL	Selenium	200.0 ± 1.2 µg/mL
Silver	200.0 ± 1.3 µg/mL	Strontium	1 000 ± 6 µg/mL	Thallium	200.0 ± 1.2 µg/mL
Thorium	1 000 ± 7 µg/mL	Uranium	1 000 ± 7 µg/mL	Vanadium	1 000 ± 5 µg/mL
Zinc	1 000 ± 6 µg/mL				

Certified Density: 1.106 g/mL (measured at 20 ± 1 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ag	ICP Assay	3151	992212
Ag	Volhard	999b	999b
As	Calculated		See Sec. 4.2
As	ICP Assay	3103a	100818
B	ICP Assay	3107	070514
Ba	Gravimetric		See Sec. 4.2
Ba	ICP Assay	3104a	070222
Be	Calculated		See Sec. 4.2
Be	ICP Assay	3105a	090514
Bi	Calculated		See Sec. 4.2
Bi	ICP Assay	3106	991212
Cd	ICP Assay	3108	060531
Cd	EDTA	928	928
Co	ICP Assay	3113	000630 Co
Co	EDTA	928	928
Cr3	Calculated		See Sec. 4.2
Cr3	ICP Assay	3112a	030730
Cu	ICP Assay	3114	011017
Cu	EDTA	928	928
Li	Gravimetric		See Sec. 4.2
Li	ICP Assay	3129a	100714
Mn	ICP Assay	3132	050429
Mn	EDTA	928	928
Ni	ICP Assay	3136	120619
Ni	EDTA	928	928
P	ICP Assay	3139a	060717
P	Acidimetric	84L	84L
Pb	ICP Assay	3128	101026
Pb	EDTA	928	928
Se	Calculated		See Sec. 4.2
Se	ICP Assay	3149	100901
Sr	ICP Assay	3153a	990906
Sr	EDTA	928	928
Th	EDTA	928	928
Th	ICP Assay	Traceable to SRM 3159	Lot# 992912
Tl	Calculated		See Sec. 4.2
Tl	ICP Assay	3158	993012
U	Calculated		See Sec. 4.2
U	ICP Assay	3164	080521
V	ICP Assay	3165	992706
V	EDTA	928	928
Zn	ICP Assay	3168a	120629
Zn	EDTA	928	928

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Certified Value $(\bar{x}) = \frac{\Sigma x_i}{n}$

$(\bar{x})$ = mean
x_i = individual results
n = number of measurements

Uncertainty $(\pm) = 2\,[\,\Sigma(s_i)^2\,]^{1/2}$

2 = the coverage factor.
$[\,\Sigma(s_i)^2\,]^{1/2}$ = The square root of the sum of the squares of the most common errors (where 's' stands for the standard deviation) from instrumental measurement, density, NIST SRM uncertainty, weighing, dilution to volume, homogeneity, long term stability and short term stability.

Certified Abundance:

IV's Certified Abundance

Isotope	Atom %
Uranium 238U	99.8 ± 0.1
Uranium 235U	0.21 ± 0.05

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

- N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Keep tightly sealed when not in use. Store and use at 20 ± 4°C. Do not pipette from the container. Do not return removed aliquots to container.

- **Uranium Note:** If uranium is present in this standard, it is natural abundance unless specified in Section 3.0.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

October 16, 2014

11.2 Period of Validity

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is handled and stored in accordance with instructions given in Sec 7.0 and used prior to the date given in Sec 11.3. This certification is nullified if the CRM/RM is damaged, contaminated, or otherwise modified.

11.3 Expiration Date

EXPIRES
01 Nov 2015

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Christy Shortridge
Product Documentation Technician

Christy Shortridge

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Brian Alexander

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Paul R Gaines

Reagent

ICPC ICV2_00002

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number (010105).

ACCREDITED Testing Laboratory Certificate 883.01 — ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

484078
ID: ICPC ICV2_00002
Exp: 11/01/15 Prpd: FLC
ICPC ICV2

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	TA-66
Lot Number:	H2-MEB550056
Matrix:	1% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: K, Mg, S

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Magnesium	10 000.0 ± 50.0 µg/mL	Potassium	10 000.0 ± 40.0 µg/mL	Sulfur	10 000.0 ± 50.0 µg/mL

Certified Density: 1.078 g/mL (measured at 20 ± 1 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
K	Gravimetric		See Sec. 4.2
K	ICP Assay	3141a	051220
Mg	ICP Assay	3131a	050302
Mg	EDTA	928	928
S	ICP Assay	3154	892205
S	Acidimetric	84L	84L

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Certified Value $(\bar{x}) = \frac{\Sigma x_i}{n}$

Uncertainty $(\pm) = 2\,[\,\Sigma(s_i)^2\,]^{1/2}$

$(\bar{x})$ = mean
x_i = individual results
n = number of measurements
2 = the coverage factor.
$[\,\Sigma(s_i)^2\,]^{1/2}$ = The square root of the sum of the squares of the most common errors (where 's' stands for the standard deviation) from instrumental measurement, density, NIST SRM uncertainty, weighing, dilution to volume, homogeneity, long term stability and short term stability.

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

- N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Keep tightly sealed when not in use. Store and use at 20 ± 4°C. Do not pipette from the container. Do not return removed aliquots to container.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

October 16, 2014

11.2 Period of Validity

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is handled and stored in accordance with instructions given in Sec 7.0 and used prior to the date given in Sec 11.3. This certification is nullified if the CRM/RM is damaged, contaminated, or otherwise modified.

11.3 Expiration Date

EXPIRES
01 Nov 2015

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Christy Shortridge
Product Documentation Technician

Christy Shortridge

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Brian Alexander

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Paul R Gaines

Reagent

ICPC13 AB 1_00002

AccuScience
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877-723-2220
www.accuscience.com

435167
ID: ICPC13 AB 1_00002
Exp:09/01/15 Prpd:FLC Opn:09/11/14
ICPC 2013 AB 1

435168
ID: ICPC13 AB 2_00002
Exp:09/01/15 Prpd:FLC Opn:09/11/14
ICPC 2013 AB 2

Rev 0

Certificate of Analysis

Description: Custom 26 Element Mix, #2368, 250 mL
mg/L in 5% HNO_3
Ag, Mo, Sb, Tl, Bi, Cd, Co, Cr, Cu, Mn, Ni, Si, Sn, Ti shipped separately.

Catalog No:	Matrix:	Lot No:	Storage:	Exp. Date:	Date Received:
ACSM2368-01-250ML	5% HNO3 + Tr HF	1064359	Ambient	1-Sep-2015	

Element	Symbol	CAS No	Purity %	Source Lot No	Concentration mg/L	
Selenium	Se	7782-49-2	99.999	7027.46.4	100	+/- .4
Arsenic	As	7440-38-2		7002.46.5	500	+/- 2
Boron	B	7440-42-8		7003.46.5	500	+/- 2
Barium	Ba	7440-39-3		7004.29.2	500	+/- 2
Beryllium	Be	7440-41-7		7005.46.5	500	+/- 2
Lithium	Li	7439-93-2		7015.46.5	500	+/- 2
Lead	Pb	7439-92-1		7023.29.2	500	+/- 2
Strontium	Sr	7440-24-6		7030.46.4	500	+/- 2
Thorium	Th	7440-29-1		7031.46.3	500	+/- 2
Uranium	U	7440-61-1		7035.330.1	500	+/- 2
Vanadium	V	7440-62-2		7036.46.5	500	+/- 2
Zinc	Zn	7440-66-6		7037.46.5	500	+/- 2
Silver	Ag	7440-22-4		7000.29.1	100	+/- .4
Molybdenum	Mo	7439-98-7		7018.29.3	100	+/- .4
Antimony	Sb	7440-36-0		7026.46.3	100	+/- .4
Thallium	Tl	7440-28-0		7236.46.1	100	+/- .4
Bismuth	Bi	7440-69-9		7040.46.2	500	+/- 2
Cadmium	Cd	7440-43-9		7007.29.3	500	+/- 2
Cobalt	Co	7440-48-4		7008.46.8	500	+/- 2
Chromium	Cr	7440-47-3		7009.46.3	500	+/- 2
Copper	Cu	7440-50-8		7011.46.5	500	+/- 10
Manganese	Mn	7439-96-5		7017.46.4	500	+/- 2
Nickel	Ni	7440-02-0		7021.46.8	500	+/- 2
Silicon	Si	7440-21-3		7028.46.12	500	+/- 2
Tin	Sn	7440-31-5		7029.46.4	500	+/- 2
Titanium	Ti	7440-32-6		7033.38.2	500	+/- 2

Certified By: Carrie Bibbins

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

This standard was manufactured by an ISO 17025 Chemical Testing Lab (Certificate number 3031.01) accredited by The American Association of Laboratory Accreditation (A2LA). Manufacturer's Quality System audited and registered by NSF-ISR to ISO 9001:2008 (Certificate number IZ391-IS4).

Reagent

ICPC13 AB 2_00002

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435167
ID: ICPC13 AB 1_00002
Exp:09/01/15 Prpd:FLC Opn:09/11/14
ICPC 2013 AB 1

435168
ID: ICPC13 AB 2_00002
Exp:09/01/15 Prpd:FLC Opn:09/11/14
ICPC 2013 AB 2

Rev 0

Certificate of Analysis

Description: Custom 26 Element Mix, #2368, 250 mL
mg/L in 5% HNO_3
Ag, Mo, Sb, Tl, Bi, Cd, Co, Cr, Cu, Mn, Ni, Si, Sn, Ti shipped separately.

Catalog No:	Matrix:	Lot No:	Storage:	Exp. Date:	Date Received:
ACSM2368-01-250ML	5% HNO3 + Tr HF	1064359	Ambient	1-Sep-2015	

Element	Symbol	CAS No	Purity %	Source Lot No	Concentration mg/L	
Selenium	Se	7782-49-2	99.999	7027.46.4	100	+/- .4
Arsenic	As	7440-38-2		7002.46.5	500	+/- 2
Boron	B	7440-42-8		7003.46.5	500	+/- 2
Barium	Ba	7440-39-3		7004.29.2	500	+/- 2
Beryllium	Be	7440-41-7		7005.46.5	500	+/- 2
Lithium	Li	7439-93-2		7015.46.5	500	+/- 2
Lead	Pb	7439-92-1		7023.29.2	500	+/- 2
Strontium	Sr	7440-24-6		7030.46.4	500	+/- 2
Thorium	Th	7440-29-1		7031.46.3	500	+/- 2
Uranium	U	7440-61-1		7035.330.1	500	+/- 2
Vanadium	V	7440-62-2		7036.46.5	500	+/- 2
Zinc	Zn	7440-66-6		7037.46.5	500	+/- 2
Silver	Ag	7440-22-4		7000.29.1	100	+/- .4
Molybdenum	Mo	7439-98-7		7018.29.3	100	+/- .4
Antimony	Sb	7440-36-0		7026.46.3	100	+/- .4
Thallium	Tl	7440-28-0		7236.46.1	100	+/- .4
Bismuth	Bi	7440-69-9		7040.46.2	500	+/- 2
Cadmium	Cd	7440-43-9		7007.29.3	500	+/- 2
Cobalt	Co	7440-48-4		7008.46.8	500	+/- 2
Chromium	Cr	7440-47-3		7009.46.3	500	+/- 2
Copper	Cu	7440-50-8		7011.46.5	500	+/- 10
Manganese	Mn	7439-96-5		7017.46.4	500	+/- 2
Nickel	Ni	7440-02-0		7021.46.8	500	+/- 2
Silicon	Si	7440-21-3		7028.46.12	500	+/- 2
Tin	Sn	7440-31-5		7029.46.4	500	+/- 2
Titanium	Ti	7440-32-6		7033.38.2	500	+/- 2

Certified By: Carrie Bibbins

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

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Reagent

ICPC13 CAL A_00002

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www.accuscience.com

444929
ID: ICPC13 CAL A_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 A

444944
ID: ICPC13 CAL B_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 B

Certificate of Analysis

Rev 0

Description: Custom 34 Element Mix (ICPC- 2013- Cal 2,3), #2366, 500 mL
mg/L in 10% HNO_3 + Tr HF
K, Na, P, Al, Ca, Fe, Mg, B, Ba, Li, Pb, Sr, Th, U, V, Zn, Tl, Se, As, Be, Bi, Cd, Co, Cr, Cu, Mn, Ni shipped separately.

Catalog No:	Matrix:	Lot No:	Storage:	Exp. Date:	Date Received:
ACSM2366-01-500ml	10% HNO_3 + Tr HF	1064528	Ambient	1-Sep-2015	

Element	Symbol	CAS No	Purity %	Source Lot No	Concentration mg/L
Silver	Ag	7440-22-4	99.999	7000.29.1	200 +/- .6
Molybdenum	Mo	7439-98-7	99.999	7018.29.3	200 +/- .6
Antimony	Sb	7440-36-0	99.999	7026.46.3	200 +/- .6
Silicon	Si	7440-21-3	99.999	7028.46.15	1000 +/- 3
Tin	Sn	7440-31-5	99.999	7029.46.4	1000 +/- 3
Titanium	Ti	7440-32-6	99.995	7033.343.1	1000 +/- 3
Sulfur	S	7704-34-9	95.9	7025.43.5	10000 +/- 30
Potassium	K	7440-09-7	99.999	7013.46.10	10000 +/- 20
Sodium	Na	7440-23-5	99.999	7020.46.7	10000 +/- 20
Phosphorus	P	7723-14-0	99.9999	7022.46.12	10000 +/- 20

Certified By: Carrie Bibbins

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

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444948
ID: ICPC13 CAL C_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 C

444961
ID: ICPC13 CAL D_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 D

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Certificate of Analysis

Rev 0

Description: Custom 34 Element Mix (ICPC- 2013- Cal 2,3), #2366, 500 mL
mg/L in 10% HNO_3
Ag, Mo, Sb, Si, Sn, Ti, S, K, Na, P, Tl, Se, As, Be, Bi, Cd, Co, Cr, Cu, Mn, Ni shipped separately.

Catalog No:	Matrix:	Lot No:	Storage:	Exp. Date:	Date Received:
ACSM2366-01-500mlC	10% HNO_3	1064535	Ambient	1-Sep-2015	

Element	Symbol	CAS No	Purity %	Source Lot No	Concentration mg/L
Aluminum	Al	7429-90-5	99.9995	7001.46.8	10000 +/- 20
Calcium	Ca	7440-70-2	99.999	7006.29.2	10000 +/- 20
Iron	Fe	7439-89-6	99.99	7012.46.14	10000 +/- 20
Magnesium	Mg	7439-95-4	99.99	7016.46.5	10000 +/- 20
Boron	B	7440-42-8	99.999	7003.46.5	1000 +/- 3
Barium	Ba	7440-39-3	99.997	7004.29.3	1000 +/- 3
Lithium	Li	7439-93-2	99.999	7015.46.5	1000 +/- 3
Lead	Pb	7439-92-1	99.999	7023.29.2	1000 +/- 3
Strontium	Sr	7440-24-6	99.998	7030.46.4	1000 +/- 3
Thorium	Th	7440-29-1	99.98	7031.46.4	1000 +/- 3
Uranium	U	7440-61-1	99.8	7035.330.1	1000 +/- 3
Vanadium	V	7440-62-2	99.995	7036.46.6	1000 +/- 3
Zinc	Zn	7440-66-6	99.9995	7037.46.5	1000 +/- 3

Certified By: Carrie Bibbins

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

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444963
ID: ICPC13 CAL E_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 E

Certificate of Analysis

Rev 0

Description: Custom 34 Element Mix (ICPC- 2013- Cal 2,3), #2366, 500 mL mg/L in 10% HNO_3

Catalog No:	Matrix:	Lot No:	Storage:	Exp. Date:	Date Received:
ACSM2366-01-500mlE	10% HNO_3 + Tr HF	1064534	Ambient	1-Sep-2015	

Element	Symbol	CAS No	Purity %	Source Lot No	Concentration mg/L
Thallium	Tl	7440-28-0	99.99	7034.29.4	200 +/- .6
Selenium	Se	7782-49-2	99.999	7027.46.4	200 +/- .6
Arsenic	As	7440-38-2	99.9999	7002.46.5	1000 +/- 3
Beryllium	Be	7440-41-7	99.999	7005.46.5	1000 +/- 3
Bismuth	Bi	7440-69-9	99.999	7040.117.1	1000 +/- 3
Cadmium	Cd	7440-43-9	99.9999	7007.46.3	1000 +/- 3
Cobalt	Co	7440-48-4	99.995	7008.46.8	1000 +/- 3
Chromium	Cr	7440-47-3	99.998	7009.46.3	1000 +/- 3
Copper	Cu	7440-50-8	99.9995	7011.46.5	1000 +/- 3
Manganese	Mn	7439-96-5	99.95	7017.46.5	1000 +/- 3
Nickel	Ni	7440-02-0	99.995	7021.46.8	1000 +/- 3

Certified By: Carrie Bibbins

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

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Reagent

ICPC13 CAL B_00002

AccuScience
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444929
ID: ICPC13 CAL A_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 A

444944
ID: ICPC13 CAL B_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 B

Certificate of Analysis

Rev 0

Description: Custom 34 Element Mix (ICPC- 2013- Cal 2,3), #2366, 500 mL
mg/L in 10% HNO_3 + Tr HF
K, Na, P, Al, Ca, Fe, Mg, B, Ba, Li, Pb, Sr, Th, U, V, Zn, Tl, Se, As, Be, Bi, Cd, Co, Cr, Cu, Mn, Ni shipped separately.

Catalog No:	Matrix:	Lot No:	Storage:	Exp. Date:	Date Received:
ACSM2366-01-500ml	10% HNO_3 + Tr HF	1064528	Ambient	1-Sep-2015	

Element	Symbol	CAS No	Purity %	Source Lot No	Concentration mg/L
Silver	Ag	7440-22-4	99.999	7000.29.1	200 +/- .6
Molybdenum	Mo	7439-98-7	99.999	7018.29.3	200 +/- .6
Antimony	Sb	7440-36-0	99.999	7026.46.3	200 +/- .6
Silicon	Si	7440-21-3	99.999	7028.46.15	1000 +/- 3
Tin	Sn	7440-31-5	99.999	7029.46.4	1000 +/- 3
Titanium	Ti	7440-32-6	99.995	7033.343.1	1000 +/- 3
Sulfur	S	7704-34-9	95.9	7025.43.5	10000 +/- 30
Potassium	K	7440-09-7	99.999	7013.46.10	10000 +/- 20
Sodium	Na	7440-23-5	99.999	7020.46.7	10000 +/- 20
Phosphorus	P	7723-14-0	99.9999	7022.46.12	10000 +/- 20

Certified By: Carrie Bibbins

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

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444948
ID: ICPC13 CAL C_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 C

444961
ID: ICPC13 CAL D_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 D

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Certificate of Analysis

Rev 0

Description: Custom 34 Element Mix (ICPC- 2013- Cal 2,3), #2366, 500 mL
mg/L in 10% HNO_3
Ag, Mo, Sb, Si, Sn, Ti, S, K, Na, P, Tl, Se, As, Be, Bi, Cd, Co, Cr, Cu, Mn, Ni shipped separately.

Catalog No:	Matrix:	Lot No:	Storage:	Exp. Date:	Date Received:
ACSM2366-01-500mlC	10% HNO_3	1064535	Ambient	1-Sep-2015	

Element	Symbol	CAS No	Purity %	Source Lot No	Concentration mg/L
Aluminum	Al	7429-90-5	99.9995	7001.46.8	10000 +/- 20
Calcium	Ca	7440-70-2	99.999	7006.29.2	10000 +/- 20
Iron	Fe	7439-89-6	99.99	7012.46.14	10000 +/- 20
Magnesium	Mg	7439-95-4	99.99	7016.46.5	10000 +/- 20
Boron	B	7440-42-8	99.999	7003.46.5	1000 +/- 3
Barium	Ba	7440-39-3	99.997	7004.29.3	1000 +/- 3
Lithium	Li	7439-93-2	99.999	7015.46.5	1000 +/- 3
Lead	Pb	7439-92-1	99.999	7023.29.2	1000 +/- 3
Strontium	Sr	7440-24-6	99.998	7030.46.4	1000 +/- 3
Thorium	Th	7440-29-1	99.98	7031.46.4	1000 +/- 3
Uranium	U	7440-61-1	99.8	7035.330.1	1000 +/- 3
Vanadium	V	7440-62-2	99.995	7036.46.6	1000 +/- 3
Zinc	Zn	7440-66-6	99.9995	7037.46.5	1000 +/- 3

Certified By: Carrie Bibbins

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

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444963
ID: ICPC13 CAL E_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 E

Certificate of Analysis

Rev 0

Description: Custom 34 Element Mix (ICPC- 2013- Cal 2,3), #2366, 500 mL mg/L in 10% HNO_3

Catalog No:	Matrix:	Lot No:	Storage:	Exp. Date:	Date Received:
ACSM2366-01-500mlE	10% HNO_3 + Tr HF	1064534	Ambient	1-Sep-2015	

Element	Symbol	CAS No	Purity %	Source Lot No	Concentration mg/L
Thallium	Tl	7440-28-0	99.99	7034.29.4	200 +/- .6
Selenium	Se	7782-49-2	99.999	7027.46.4	200 +/- .6
Arsenic	As	7440-38-2	99.9999	7002.46.5	1000 +/- 3
Beryllium	Be	7440-41-7	99.999	7005.46.5	1000 +/- 3
Bismuth	Bi	7440-69-9	99.999	7040.117.1	1000 +/- 3
Cadmium	Cd	7440-43-9	99.9999	7007.46.3	1000 +/- 3
Cobalt	Co	7440-48-4	99.995	7008.46.8	1000 +/- 3
Chromium	Cr	7440-47-3	99.998	7009.46.3	1000 +/- 3
Copper	Cu	7440-50-8	99.9995	7011.46.5	1000 +/- 3
Manganese	Mn	7439-96-5	99.95	7017.46.5	1000 +/- 3
Nickel	Ni	7440-02-0	99.995	7021.46.8	1000 +/- 3

Certified By: Carrie Bibbins

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

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Reagent

ICPC13 CAL C_00002

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444929
ID: ICPC13 CAL A_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 A

444944
ID: ICPC13 CAL B_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 B

Certificate of Analysis

Rev 0

Description: Custom 34 Element Mix (ICPC- 2013- Cal 2,3), #2366, 500 mL
mg/L in 10% HNO_3 + Tr HF
K, Na, P, Al, Ca, Fe, Mg, B, Ba, Li, Pb, Sr, Th, U, V, Zn, Tl, Se, As, Be, Bi, Cd, Co, Cr, Cu, Mn, Ni shipped separately.

Catalog No:	Matrix:	Lot No:	Storage:	Exp. Date:	Date Received:
ACSM2366-01-500ml	10% HNO_3 + Tr HF	1064528	Ambient	1-Sep-2015	

Element	Symbol	CAS No	Purity %	Source Lot No	Concentration mg/L
Silver	Ag	7440-22-4	99.999	7000.29.1	200 +/- .6
Molybdenum	Mo	7439-98-7	99.999	7018.29.3	200 +/- .6
Antimony	Sb	7440-36-0	99.999	7026.46.3	200 +/- .6
Silicon	Si	7440-21-3	99.999	7028.46.15	1000 +/- 3
Tin	Sn	7440-31-5	99.999	7029.46.4	1000 +/- 3
Titanium	Ti	7440-32-6	99.995	7033.343.1	1000 +/- 3
Sulfur	S	7704-34-9	95.9	7025.43.5	10000 +/- 30
Potassium	K	7440-09-7	99.999	7013.46.10	10000 +/- 20
Sodium	Na	7440-23-5	99.999	7020.46.7	10000 +/- 20
Phosphorus	P	7723-14-0	99.9999	7022.46.12	10000 +/- 20

Certified By: Carrie Bibbins

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

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444948
ID: ICPC13 CAL C_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 C

444961
ID: ICPC13 CAL D_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 D

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Certificate of Analysis

Rev 0

Description: Custom 34 Element Mix (ICPC- 2013- Cal 2,3), #2366, 500 mL
mg/L in 10% HNO_3
Ag, Mo, Sb, Si, Sn, Ti, S, K, Na, P, Tl, Se, As, Be, Bi, Cd, Co, Cr, Cu, Mn, Ni shipped separately.

Catalog No:	Matrix:	Lot No:	Storage:	Exp. Date:	Date Received:
ACSM2366-01-500mlC	10% HNO_3	1064535	Ambient	1-Sep-2015	

Element	Symbol	CAS No	Purity %	Source Lot No	Concentration mg/L
Aluminum	Al	7429-90-5	99.9995	7001.46.8	10000 +/- 20
Calcium	Ca	7440-70-2	99.999	7006.29.2	10000 +/- 20
Iron	Fe	7439-89-6	99.99	7012.46.14	10000 +/- 20
Magnesium	Mg	7439-95-4	99.99	7016.46.5	10000 +/- 20
Boron	B	7440-42-8	99.999	7003.46.5	1000 +/- 3
Barium	Ba	7440-39-3	99.997	7004.29.3	1000 +/- 3
Lithium	Li	7439-93-2	99.999	7015.46.5	1000 +/- 3
Lead	Pb	7439-92-1	99.999	7023.29.2	1000 +/- 3
Strontium	Sr	7440-24-6	99.998	7030.46.4	1000 +/- 3
Thorium	Th	7440-29-1	99.98	7031.46.4	1000 +/- 3
Uranium	U	7440-61-1	99.8	7035.330.1	1000 +/- 3
Vanadium	V	7440-62-2	99.995	7036.46.6	1000 +/- 3
Zinc	Zn	7440-66-6	99.9995	7037.46.5	1000 +/- 3

Certified By: Carrie Bibbins

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

This standard was manufactured by an ISO 17025 Chemical Testing Lab (Certificate number 3031.01) accredited by The American Association of Laboratory Accreditation (A2LA). Manufacturer's Quality System audited and registered by NSF-ISR to ISO 9001:2008 (Certificate number IZ391-IS4).

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444963
ID: ICPC13 CAL E_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 E

Certificate of Analysis

Rev 0

Description: Custom 34 Element Mix (ICPC- 2013- Cal 2,3), #2366, 500 mL mg/L in 10% HNO_3

Catalog No:	Matrix:	Lot No:	Storage:	Exp. Date:	Date Received:
ACSM2366-01-500mlE	10% HNO_3 + Tr HF	1064534	Ambient	1-Sep-2015	

Element	Symbol	CAS No	Purity %	Source Lot No	Concentration mg/L
Thallium	Tl	7440-28-0	99.99	7034.29.4	200 +/- .6
Selenium	Se	7782-49-2	99.999	7027.46.4	200 +/- .6
Arsenic	As	7440-38-2	99.9999	7002.46.5	1000 +/- 3
Beryllium	Be	7440-41-7	99.999	7005.46.5	1000 +/- 3
Bismuth	Bi	7440-69-9	99.999	7040.117.1	1000 +/- 3
Cadmium	Cd	7440-43-9	99.9999	7007.46.3	1000 +/- 3
Cobalt	Co	7440-48-4	99.995	7008.46.8	1000 +/- 3
Chromium	Cr	7440-47-3	99.998	7009.46.3	1000 +/- 3
Copper	Cu	7440-50-8	99.9995	7011.46.5	1000 +/- 3
Manganese	Mn	7439-96-5	99.95	7017.46.5	1000 +/- 3
Nickel	Ni	7440-02-0	99.995	7021.46.8	1000 +/- 3

Certified By: Carrie Bibbins

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

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Reagent

ICPC13 CAL D_00002

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444929
ID: ICPC13 CAL A_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 A

444944
ID: ICPC13 CAL B_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 B

Certificate of Analysis

Rev 0

Description: Custom 34 Element Mix (ICPC- 2013- Cal 2,3), #2366, 500 mL
mg/L in 10% HNO_3 + Tr HF
K, Na, P, Al, Ca, Fe, Mg, B, Ba, Li, Pb, Sr, Th, U, V, Zn, Tl, Se, As, Be, Bi, Cd, Co, Cr, Cu, Mn, Ni shipped separately.

Catalog No:	Matrix:	Lot No:	Storage:	Exp. Date:	Date Received:
ACSM2366-01-500ml	10% HNO_3 + Tr HF	1064528	Ambient	1-Sep-2015	

Element	Symbol	CAS No	Purity %	Source Lot No	Concentration mg/L
Silver	Ag	7440-22-4	99.999	7000.29.1	200 +/- .6
Molybdenum	Mo	7439-98-7	99.999	7018.29.3	200 +/- .6
Antimony	Sb	7440-36-0	99.999	7026.46.3	200 +/- .6
Silicon	Si	7440-21-3	99.999	7028.46.15	1000 +/- 3
Tin	Sn	7440-31-5	99.999	7029.46.4	1000 +/- 3
Titanium	Ti	7440-32-6	99.995	7033.343.1	1000 +/- 3
Sulfur	S	7704-34-9	95.9	7025.43.5	10000 +/- 30
Potassium	K	7440-09-7	99.999	7013.46.10	10000 +/- 20
Sodium	Na	7440-23-5	99.999	7020.46.7	10000 +/- 20
Phosphorus	P	7723-14-0	99.9999	7022.46.12	10000 +/- 20

Certified By: Carrie Bibbins

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

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444948
ID: ICPC13 CAL C_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 C

444961
ID: ICPC13 CAL D_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 D

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Certificate of Analysis

Rev 0

Description: Custom 34 Element Mix (ICPC- 2013- Cal 2,3), #2366, 500 mL
mg/L in 10% HNO_3
Ag, Mo, Sb, Si, Sn, Ti, S, K, Na, P, Tl, Se, As, Be, Bi, Cd, Co, Cr, Cu, Mn, Ni shipped separately.

Catalog No:	Matrix:	Lot No:	Storage:	Exp. Date:	Date Received:
ACSM2366-01-500mlC	10% HNO_3	1064535	Ambient	1-Sep-2015	

Element	Symbol	CAS No	Purity %	Source Lot No	Concentration mg/L
Aluminum	Al	7429-90-5	99.9995	7001.46.8	10000 +/- 20
Calcium	Ca	7440-70-2	99.999	7006.29.2	10000 +/- 20
Iron	Fe	7439-89-6	99.99	7012.46.14	10000 +/- 20
Magnesium	Mg	7439-95-4	99.99	7016.46.5	10000 +/- 20
Boron	B	7440-42-8	99.999	7003.46.5	1000 +/- 3
Barium	Ba	7440-39-3	99.997	7004.29.3	1000 +/- 3
Lithium	Li	7439-93-2	99.999	7015.46.5	1000 +/- 3
Lead	Pb	7439-92-1	99.999	7023.29.2	1000 +/- 3
Strontium	Sr	7440-24-6	99.998	7030.46.4	1000 +/- 3
Thorium	Th	7440-29-1	99.98	7031.46.4	1000 +/- 3
Uranium	U	7440-61-1	99.8	7035.330.1	1000 +/- 3
Vanadium	V	7440-62-2	99.995	7036.46.6	1000 +/- 3
Zinc	Zn	7440-66-6	99.9995	7037.46.5	1000 +/- 3

Certified By: Carrie Bibbins

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

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444963
ID: ICPC13 CAL E_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 E

Certificate of Analysis

Rev 0

Description: Custom 34 Element Mix (ICPC- 2013- Cal 2,3), #2366, 500 mL
mg/L in 10% HNO_3

Catalog No:	Matrix:	Lot No:	Storage:	Exp. Date:	Date Received:
ACSM2366-01-500mlE	10% HNO_3 + Tr HF	1064534	Ambient	1-Sep-2015	

Element	Symbol	CAS No	Purity %	Source Lot No	Concentration mg/L
Thallium	Tl	7440-28-0	99.99	7034.29.4	200 +/- .6
Selenium	Se	7782-49-2	99.999	7027.46.4	200 +/- .6
Arsenic	As	7440-38-2	99.9999	7002.46.5	1000 +/- 3
Beryllium	Be	7440-41-7	99.999	7005.46.5	1000 +/- 3
Bismuth	Bi	7440-69-9	99.999	7040.117.1	1000 +/- 3
Cadmium	Cd	7440-43-9	99.9999	7007.46.3	1000 +/- 3
Cobalt	Co	7440-48-4	99.995	7008.46.8	1000 +/- 3
Chromium	Cr	7440-47-3	99.998	7009.46.3	1000 +/- 3
Copper	Cu	7440-50-8	99.9995	7011.46.5	1000 +/- 3
Manganese	Mn	7439-96-5	99.95	7017.46.5	1000 +/- 3
Nickel	Ni	7440-02-0	99.995	7021.46.8	1000 +/- 3

Certified By: Carrie Bibbins

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

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Reagent

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444929
ID: ICPC13 CAL A_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 A

444944
ID: ICPC13 CAL B_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 B

Certificate of Analysis

Rev 0

Description: Custom 34 Element Mix (ICPC- 2013- Cal 2,3), #2366, 500 mL
mg/L in 10% HNO_3 + Tr HF
K, Na, P, Al, Ca, Fe, Mg, B, Ba, Li, Pb, Sr, Th, U, V, Zn, Tl, Se, As, Be, Bi, Cd, Co, Cr, Cu, Mn, Ni shipped separately.

Catalog No:	Matrix:	Lot No:	Storage:	Exp. Date:	Date Received:
ACSM2366-01-500ml	10% HNO_3 + Tr HF	1064528	Ambient	1-Sep-2015	

Element	Symbol	CAS No	Purity %	Source Lot No	Concentration mg/L
Silver	Ag	7440-22-4	99.999	7000.29.1	200 +/- .6
Molybdenum	Mo	7439-98-7	99.999	7018.29.3	200 +/- .6
Antimony	Sb	7440-36-0	99.999	7026.46.3	200 +/- .6
Silicon	Si	7440-21-3	99.999	7028.46.15	1000 +/- 3
Tin	Sn	7440-31-5	99.999	7029.46.4	1000 +/- 3
Titanium	Ti	7440-32-6	99.995	7033.343.1	1000 +/- 3
Sulfur	S	7704-34-9	95.9	7025.43.5	10000 +/- 30
Potassium	K	7440-09-7	99.999	7013.46.10	10000 +/- 20
Sodium	Na	7440-23-5	99.999	7020.46.7	10000 +/- 20
Phosphorus	P	7723-14-0	99.9999	7022.46.12	10000 +/- 20

Certified By: Carrie Bibbins

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

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444948
ID: ICPC13 CAL C_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 C

444961
ID: ICPC13 CAL D_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 D

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Rev 0

Description: Custom 34 Element Mix (ICPC- 2013- Cal 2,3), #2366, 500 mL
mg/L in 10% HNO_3
Ag, Mo, Sb, Si, Sn, Ti, S, K, Na, P, Tl, Se, As, Be, Bi, Cd, Co, Cr, Cu, Mn, Ni shipped separately.

Catalog No:	Matrix:	Lot No:	Storage:	Exp. Date:	Date Received:
ACSM2366-01-500mlC	10% HNO_3	1064535	Ambient	1-Sep-2015	

Element	Symbol	CAS No	Purity %	Source Lot No	Concentration mg/L
Aluminum	Al	7429-90-5	99.9995	7001.46.8	10000 +/- 20
Calcium	Ca	7440-70-2	99.999	7006.29.2	10000 +/- 20
Iron	Fe	7439-89-6	99.99	7012.46.14	10000 +/- 20
Magnesium	Mg	7439-95-4	99.99	7016.46.5	10000 +/- 20
Boron	B	7440-42-8	99.999	7003.46.5	1000 +/- 3
Barium	Ba	7440-39-3	99.997	7004.29.3	1000 +/- 3
Lithium	Li	7439-93-2	99.999	7015.46.5	1000 +/- 3
Lead	Pb	7439-92-1	99.999	7023.29.2	1000 +/- 3
Strontium	Sr	7440-24-6	99.998	7030.46.4	1000 +/- 3
Thorium	Th	7440-29-1	99.98	7031.46.4	1000 +/- 3
Uranium	U	7440-61-1	99.8	7035.330.1	1000 +/- 3
Vanadium	V	7440-62-2	99.995	7036.46.6	1000 +/- 3
Zinc	Zn	7440-66-6	99.9995	7037.46.5	1000 +/- 3

Certified By: Carrie Bibbins

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444963
ID: ICPC13 CAL E_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 E

Certificate of Analysis

Rev 0

Description: Custom 34 Element Mix (ICPC- 2013- Cal 2,3), #2366, 500 mL mg/L in 10% HNO_3

Catalog No:	Matrix:	Lot No:	Storage:	Exp. Date:	Date Received:
ACSM2366-01-500mlE	10% HNO_3 + Tr HF	1064534	Ambient	1-Sep-2015	

Element	Symbol	CAS No	Purity %	Source Lot No	Concentration mg/L
Thallium	Tl	7440-28-0	99.99	7034.29.4	200 +/- .6
Selenium	Se	7782-49-2	99.999	7027.46.4	200 +/- .6
Arsenic	As	7440-38-2	99.9999	7002.46.5	1000 +/- 3
Beryllium	Be	7440-41-7	99.999	7005.46.5	1000 +/- 3
Bismuth	Bi	7440-69-9	99.999	7040.117.1	1000 +/- 3
Cadmium	Cd	7440-43-9	99.9999	7007.46.3	1000 +/- 3
Cobalt	Co	7440-48-4	99.995	7008.46.8	1000 +/- 3
Chromium	Cr	7440-47-3	99.998	7009.46.3	1000 +/- 3
Copper	Cu	7440-50-8	99.9995	7011.46.5	1000 +/- 3
Manganese	Mn	7439-96-5	99.95	7017.46.5	1000 +/- 3
Nickel	Ni	7440-02-0	99.995	7021.46.8	1000 +/- 3

Certified By: Carrie Bibbins

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

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Reagent

ICPC13 ICSA 1_00002

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444894
ID: ICPC13 ICSA 1_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 ICSA 1

444908
ID: ICPC13 ICSA 2_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 ICSA 2

Certificate of Analysis

Rev 0

Description: Custom 8 Element Mix, #2367, 500 mL
20,000 mg/L in 5% HNO_3
Al, Ca, Fe, Mg shipped separately in 10% HNO_3.

Catalog No:	Matrix:	Lot No:	Storage:	Exp. Date:	Date Received:
ACSM2367-01-500ml	5% HNO3	1064353	Ambient	1-Sep-2015	

Element	Symbol	CAS No	Purity %	Source Lot No	Concentration mg/L
Potassium	K	7440-09-7	99.999	7013.46.10	20000 +/- 40
Sodium	Na	7440-23-5	99.999	7020.46.7	20000 +/- 40
Phosphorus	P	7723-14-0	99.9999	7022.46.12	20000 +/- 40
Sulfur	S	7704-34-9	95.9	7025.43.5	20000 +/- 70
Aluminum	Al	7429-90-5	99.9995	7001.46.8	20000 +/- 40
Calcium	Ca	7440-70-2	99.999	7006.29.2	20000 +/- 40
Iron	Fe	7439-89-6	99.99	7012.46.14	20000 +/- 40
Magnesium	Mg	7439-95-4	99.99	7016.46.5	20000 +/- 40

Certified By: Tiffany Kwasigroch

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

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Reagent

ICPC13 ICSA 2_00002

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444894
ID: ICPC13 ICSA 1_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 ICSA 1

444908
ID: ICPC13 ICSA 2_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 ICSA 2

Certificate of Analysis

Rev 0

Description: Custom 8 Element Mix, #2367, 500 mL
20,000 mg/L in 5% HNO_3
Al, Ca, Fe, Mg shipped separately in 10% HNO_3.

Catalog No:	Matrix:	Lot No:	Storage:	Exp. Date:	Date Received:
ACSM2367-01-500ml	5% HNO3	1064353	Ambient	1-Sep-2015	

Element	Symbol	CAS No	Purity %	Source Lot No	Concentration mg/L
Potassium	K	7440-09-7	99.999	7013.46.10	20000 +/- 40
Sodium	Na	7440-23-5	99.999	7020.46.7	20000 +/- 40
Phosphorus	P	7723-14-0	99.9999	7022.46.12	20000 +/- 40
Sulfur	S	7704-34-9	95.9	7025.43.5	20000 +/- 70
Aluminum	Al	7429-90-5	99.9995	7001.46.8	20000 +/- 40
Calcium	Ca	7440-70-2	99.999	7006.29.2	20000 +/- 40
Iron	Fe	7439-89-6	99.99	7012.46.14	20000 +/- 40
Magnesium	Mg	7439-95-4	99.99	7016.46.5	20000 +/- 40

Certified By: Tiffany Kwasigroch

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Reagent

ICPC13 LLC A_00003

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435178
ID: ICPC13 LLC A_00003
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC LLC 2013 solution A

435179
ID: ICPC13 LLC B_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 LLC B

Certificate of Analysis

Rev 0

Description: Custom 34 Element Mix, #2365, 250 mL
mg/L in 2% HNO_3
Ag, Sb, Ti, Mo, Sn, Si, S shipped separately.

Catalog No:	Matrix:	Lot No:	Storage:	Exp. Date:	Date Received:
ACSM2365-01-250ML	2% HNO_3 + Tr HF	1064407	Ambient	1-Sep-2015	

Element	Symbol	CAS No	Purity %	Source Lot No	Concentration mg/L	
Beryllium	Be	7440-41-7	99.999	7005.46.4	3	+/- .05
Cadmium	Cd	7440-43-9		7007.29.3	3	+/- .05
Strontium	Sr	7440-24-6		7030.46.2	3	+/- .05
Arsenic	As	7440-38-2		7002.46.5	5	+/- .2
Chromium	Cr	7440-47-3		7009.46.3	5	+/- .2
Lead	Pb	7439-92-1		7023.29.1	5	+/- .2
Selenium	Se	7782-49-2		7027.46.4	8	+/- .225
Manganese	Mn	7439-96-5		7017.46.4	8	+/- .225
Thallium	Tl	7440-28-0		7236.46.1	10	+/- .2
Zinc	Zn	7440-66-6		7037.46.5	10	+/- .2
Copper	Cu	7440-50-8		7011.46.4	13	+/- .25
Nickel	Ni	7440-02-0		7021.46.8	20	+/- .2
Boron	B	7440-42-8		7003.46.5	25	+/- .5
Barium	Ba	7440-39-3		7004.29.2	25	+/- .5
Cobalt	Co	7440-48-4		7008.46.8	25	+/- .5
Lithium	Li	7439-93-2		7015.46.5	25	+/- .5
Vanadium	V	7440-62-2		7036.46.5	25	+/- .5
Iron	Fe	7439-89-6		7012.46.13	50	+/- 1
Aluminum	Al	7429-90-5		7001.46.7	100	+/- 2
Bismuth	Bi	7440-69-9		7040.46.2	100	+/- 1
Thorium	Th	7440-29-1		7031.46.3	100	+/- .4
Phosphorus	P	7723-14-0		7022.46.11	125	+/- 2.5
Uranium	U	7440-61-1		7035.330.1	250	+/- 1
Calcium	Ca	7440-70-2		7006.46.12	500	+/- 2
Magnesium	Mg	7439-95-4		7016.46.5	500	+/- 2
Sodium	Na	7440-23-5		7020.46.6	500	+/- 2
Potassium	K	7440-09-7		7013.46.9	2500	+/- 10

Certified By: Carrie Bibbins

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

This standard was manufactured by an ISO 17025 Chemical Testing Lab (Certificate number 3031.01) accredited by The American Association of Laboratory Accreditation (A2LA). Manufacturer's quality system audited and registered by NSF-ISR to ISO 9001:2008 (Certificate number IZ391-IS4).

Silver	Ag	7440-22-4	7000.29.1	5	+/- .2
Antimony	Sb	7440-36-0	7026.46.3	5	+/- .2
Titanium	Ti	7440-32-6	7033.38.2	10	+/- .2
Molybdenum	Mo	7439-98-7	7018.29.3	20	+/- .2
Tin	Sn	7440-31-5	7029.46.4	50	+/- 1
Silicon	Si	7440-21-3	7028.46.12	200	+/- .8
Sulfur	S	7704-34-9	7025.43.5	2500	+/- 10

Certified By: Carrie Bibbins

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

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Reagent

ICPC13 LLC B_00002

AccuScience
15520 Oakwood Street
Pierrefonds QC Canada H9H1Y2
877-723-2220
www.accuscience.com

435178
ID: ICPC13 LLC A_00003
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC LLC 2013 solution A

435179
ID: ICPC13 LLC B_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 LLC B

Certificate of Analysis

Rev 0

Description: Custom 34 Element Mix, #2365, 250 mL
mg/L in 2% HNO_3
Ag, Sb, Ti, Mo, Sn, Si, S shipped separately.

Catalog No:	Matrix:	Lot No:	Storage:	Exp. Date:	Date Received:
ACSM2365-01-250ML	2% HNO_3 + Tr HF	1064407	Ambient	1-Sep-2015	

Element	Symbol	CAS No	Purity %	Source Lot No	Concentration mg/L	
Beryllium	Be	7440-41-7	99.999	7005.46.4	3	+/- .05
Cadmium	Cd	7440-43-9		7007.29.3	3	+/- .05
Strontium	Sr	7440-24-6		7030.46.2	3	+/- .05
Arsenic	As	7440-38-2		7002.46.5	5	+/- .2
Chromium	Cr	7440-47-3		7009.46.3	5	+/- .2
Lead	Pb	7439-92-1		7023.29.1	5	+/- .2
Selenium	Se	7782-49-2		7027.46.4	8	+/- .225
Manganese	Mn	7439-96-5		7017.46.4	8	+/- .225
Thallium	Tl	7440-28-0		7236.46.1	10	+/- .2
Zinc	Zn	7440-66-6		7037.46.5	10	+/- .2
Copper	Cu	7440-50-8		7011.46.4	13	+/- .25
Nickel	Ni	7440-02-0		7021.46.8	20	+/- .2
Boron	B	7440-42-8		7003.46.5	25	+/- .5
Barium	Ba	7440-39-3		7004.29.2	25	+/- .5
Cobalt	Co	7440-48-4		7008.46.8	25	+/- .5
Lithium	Li	7439-93-2		7015.46.5	25	+/- .5
Vanadium	V	7440-62-2		7036.46.5	25	+/- .5
Iron	Fe	7439-89-6		7012.46.13	50	+/- 1
Aluminum	Al	7429-90-5		7001.46.7	100	+/- 2
Bismuth	Bi	7440-69-9		7040.46.2	100	+/- 1
Thorium	Th	7440-29-1		7031.46.3	100	+/- .4
Phosphorus	P	7723-14-0		7022.46.11	125	+/- 2.5
Uranium	U	7440-61-1		7035.330.1	250	+/- 1
Calcium	Ca	7440-70-2		7006.46.12	500	+/- 2
Magnesium	Mg	7439-95-4		7016.46.5	500	+/- 2
Sodium	Na	7440-23-5		7020.46.6	500	+/- 2
Potassium	K	7440-09-7		7013.46.9	2500	+/- 10

Certified By: Carrie Bibbins

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

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Silver	Ag	7440-22-4	7000.29.1	5	+/- .2
Antimony	Sb	7440-36-0	7026.46.3	5	+/- .2
Titanium	Ti	7440-32-6	7033.38.2	10	+/- .2
Molybdenum	Mo	7439-98-7	7018.29.3	20	+/- .2
Tin	Sn	7440-31-5	7029.46.4	50	+/- 1
Silicon	Si	7440-21-3	7028.46.12	200	+/- .8
Sulfur	S	7704-34-9	7025.43.5	2500	+/- 10

Certified By: Carrie Bibbins

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

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Reagent

PREP 1 and 2_00005

437766
ID: PREP 1 and 2_00005
Exp:08/28/15 Prpd:SMD Opn:08/28/14
Spike 1 and 2

AccuScience
15520 Oakwood Street
Pierrefonds QC Canada H9H1Y2
877-723-2220
www.accuscience.com

Certificate of Analysis

Rev 0

Description: Custom 37 Element Mix(A&B), Prep Spike 1, 500 mL
mg/L in 10% HNO_3
Ag, Mo, Nb, Sb, Bi, Sn, Ti, W, Zr and S Shipped Separately.

Catalog No:	Matrix:	Lot No:	Storage:	Exp. Date:	Date Received:
ACSM2381-01-500ML	10% HNO3	1063960	Ambient	9/1/2015	

Element	Symbol	CAS No	Purity %	Source Lot No	Concentration mg/L	
Aluminum	Al	7429-90-5	99.9995	7001.46.7	2000	+/- 6
Calcium	Ca	7440-70-2		7006.29.2	2000	+/- 6
Iron	Fe	7439-89-6		7012.46.14	2000	+/- 6
Potassium	K	7440-09-7		7013.46.9	2000	+/- 6
Magnesium	Mg	7439-95-4		7016.46.5	2000	+/- 6
Sodium	Na	7440-23-5		7020.46.7	2000	+/- 6
Arsenic	As	7440-38-2		7002.46.5	200	+/- .6
Barium	Ba	7440-39-3		7004.29.3	200	+/- .6
Beryllium	Be	7440-41-7		7005.46.5	200	+/- .6
Cadmium	Cd	7440-43-9		7007.46.3	200	+/- .6
Cobalt	Co	7440-48-4		7008.46.8	200	+/- .6
Chromium	Cr	7440-47-3		7009.46.3	200	+/- .6
Copper	Cu	7440-50-8		7011.46.5	200	+/- .6
Lithium	Li	7439-93-2		7015.46.5	200	+/- .6
Manganese	Mn	7439-96-5		7017.46.5	200	+/- .6
Nickel	Ni	7440-02-0		7021.46.8	200	+/- .6
Phosphorus	P	7723-14-0		7022.46.12	200	+/- .6
Lead	Pb	7439-92-1		7023.29.3	200	+/- .6
Samarium	Sm	7440-19-9		7066.46.1	200	+/- .6
Strontium	Sr	7440-24-6		7030.46.4	200	+/- .6
Thorium	Th	7440-29-1		7031.46.4	200	+/- .6
Uranium	U	7440-61-1		7035.330.1	200	+/- .6
Vanadium	V	7440-62-2		7036.46.6	200	+/- .6
Zinc	Zn	7440-66-6		7037.46.5	200	+/- .6
Boron	B	7440-42-8		7003.46.5	400	+/- 1.2
Selenium	Se	7782-49-2		7027.46.4	100	+/- .3
Thallium	Tl	7440-28-0		7034.29.3	40	+/- .12

Certified By: Carrie Bibbins

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

This standard was manufactured by an ISO 17025 Chemical Testing Lab (Certificate number 3031.01) accredited by The American Association of Laboratory Accreditation (A2LA). Manufacturer's Quality System audited and registered by NSF-ISR to ISO 9001:2008 (Certificate number IZ391-IS4).

Sulfur	S	7704-34-9	7025.43.5	2000	+/- 6
Bismuth	Bi	7440-69-9	7040.117.1	200	+/- .6
Tin	Sn	7440-31-5	7029.46.4	200	+/- .6
Titanium	Ti	7440-32-6	7033.343.1	200	+/- .6
Tungsten	W	7440-33-7	7072.46.2	200	+/- .6
Zirconium	Zr	7440-67-7	7038.29.2	200	+/- .6
Molybdenum	Mo	7439-98-7	7018.29.3	100	+/- .3
Niobium	Nb	7440-03-1	7108.46.3	100	+/- .3
Antimony	Sb	7440-36-0	7026.46.3	100	+/- .3
Silver	Ag	7440-22-4	7000.29.1	40	+/- .12

Certified By: Carrie Bibbins

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

This standard was manufactured by an ISO 17025 Chemical Testing Lab (Certificate number 3031.01) accredited by The American Association of Laboratory Accreditation (A2LA). Manufacturer's Quality System audited and registered by NSF-ISR to ISO 9001:2008 (Certificate number IZ391-IS4).

Reagent

Sr-90_00001

Eckert & Ziegler
Analytics

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318
Tel 404·352·8677
Fax 404·352·2837
www.analyticsinc.com

CERTIFICATE OF CALIBRATION
Standard Radionuclide Source

80573-334
5 mL Liquid in Flame Sealed Vial

Customer: Test America St. Louis
P.O. No.: 2324797, Item 1

This standard radionuclide source was prepared gravimetrically from a calibrated master solution. The master solution was calibrated by liquid scintillation counting. Radionuclide purity and calibration were checked by germanium gamma-ray spectrometry and liquid scintillation counting. The nuclear decay rate and assay date for this source are given below. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 1, February, 1979, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Isotope	Half-Life, Days	Activity (Bq)	Uncertainty*, % Type u_A	u_B	U	Reference Date (12:00 PM EST)
Sr-90	10515.5	3.782E+04	0.1	0.9	1.8	09/17/2009

*Uncertainty: U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

Comments:
Impurities: γ-impurities <0.1%. 5.04317 grams 0.1M HCl solution with approximately 30 microg/g each of Sr and Y carriers. NOTE: This source also contains Y-90 in secular equilibrium with Sr-90. The Y-90 activity is equal to the Sr-90 activity. Since Sr-90 and Y-90 both decay 100% by beta emission, the total beta emission rate for the source is twice the certified Sr-90 activity. The half-life for Y-90 is 64.08 hours.

Source Prepared by: _____
W. Mao, Radiochemist

QA Approved: _____ Date: 9-22-09
D. M. Montgomery, QA Manager

ACCREDITED SOURCE CALIBRATION LABORATORY
HEALTH PHYSICS SOCIETY
FOUNDED 1956

Corporate Office
24937 Avenue Tibbitts Valencia, California 91355

Laboratory
1380 Seaboard Industrial Blvd. Atlanta, Georgia 30318

Reagent

Sr-90_00017

Eckert & Ziegler
Analytics

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318
Tel 404•352•8677
Fax 404•352•2837
www.analyticsinc.com

CERTIFICATE OF CALIBRATION
Standard Radionuclide Source

92352

Sr-90 5 mL Liquid in Flame Sealed Vial

Customer: TestAmerica St. Louis
P.O. No.: 2502682, Item 1 Product Code: 8090-5FSA-37kBq

This standard radionuclide source was prepared gravimetrically from a master solution, calibrated by Eckert & Ziegler Analytics. The master solution was calibrated by liquid scintillation counting. Radionuclide calibration and purity were checked by germanium gamma-ray spectrometry, liquid scintillation counting, and/or alpha spectrometry, as applicable. The nuclear decay rate and reference date for this source are given below. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 2, July 2007, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Isotope	Half-Life, Days	Activity (Bq)	Uncertainty* , % Type u_A	u_B	U	Reference Date (12:00 PM EST)
Sr-90	1.052E+04	3.749E+04	0.1	0.9	1.8	11/29/2012

***Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

Comments:
Impurities: γ-impurities<0.1%.
5.02357 g 0.1M HCl solution with approximately 30 µg/g each Sr and Y carriers.

NOTE: This source also contains Y-90 in secular equilibrium with Sr-90. The Y-90 activity is equal to the Sr-90 activity. Since Sr-90 and Y-90 both decay 100% by beta emission, the total activity for the source is twice the certified Sr-90 activity. The half-life for Y-90 is 64.08 hours.

Source Prepared by: _____
Z. Dimitrova, Radiochemist

QA Approved: _____ Date: 26 Nov 12
J.D. McCorvey, Counting Room Manager

ACCREDITED SOURCE CALIBRATION LABORATORY — HEALTH PHYSICS SOCIETY — FOUNDED 1956

RAD12-0042
Sr-90
hursts
None
Prep/Opened: 11/28/2012
Exp(1): 11/29/2062
Exp(2): 11/29/2062

51511
ID Sr-90_00017
Sr-90 Ampoule

Single Isotope Certificate Rev 3, 23 August 2012

Corporate Office
24937 Avenue Tibbitts Valencia, California 91355

Laboratory
1380 Seaboard Industrial Blvd. Atlanta, Georgia, 30318

Reagent

Sr-90_00018

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Reagent ID: Sr-90_00018

		Expiration Date:	11/29/2062
Description:	Sr-90 Calibration STD	Laboratory:	TestAmerica St. Louis
No. of Bottles:	1	Prepared By:	Hurst, Sarah
Storage Location:	RAD Separations Reagents - 1	Solvent:	0.1M HCL
Reagent Volume:	100.000 mL	Solvent Lot:	0
Creation Date:	11/28/2012		
Container(s):	51512		
Comment:	Rad12-0043		

Reagent Analyte Information

Analyte	Source ID	Source Exp. Date	Source Conc.	Source Conc. Units	Final Conc.	Final Conc. Units
Gross Beta	Sr-90_00017	11/29/2062	14925.64000	Bq/g	44774.23338	dpm/mL
Sr-90	Sr-90_00017	11/29/2062	7462.82000	Bq/g	22387.11669	dpm/mL

Source Reagents

Reagent	Description	Type	Expiration	Vendor	Vendor Lot #	Vendor Cat Lot #	Volume Used	Volume Units
Sr-90_00017	Sr-90 Ampoule	ASTD	11/29/62	Analytics	92352		4.99970	g

St. Louis Radiological Standard Reverification Form

Standard ID Number: Sr-90_00018 (51512)
True Value = 1976.75 pCi/sample or g
Date Analyzed: 2/10/2014

Radionuclide: Sr-90 (Low mass)

Replicates		
#1	1935	pCi/sample or g
#2	1941	pCi/sample or g
#3	1924	pCi/sample or g

Mean = 1933.333

1 sigma = 8.621678 1.96 sigma = 16.89849

True Value minus 5% = 1877.913 (True Value - 5%)
True Value plus 5% = 2075.588 (True Value + 5%)

Accuracy:
Mean value within 5% of Certified (True) Value? **Yes** **(Acceptance Criteria)**

Precision:
1.96 sigma Value Within 10% of Mean Value? **Yes** **(Acceptance Criteria)**

Standard Reverification Acceptable? **Yes**

Note: Criteria for reverification of radiological standards is taken from the DOE QSAS and LANL Statements of Work

Reviewed By/Date: Jody Watson 2/10/14

SOP Reference: STL-QA-0002, Current Revision

St. Louis Radiological Standard Reverification Form

Standard ID Number: Sr-90_00018 (51512)
True Value = 1948.75 pCi/sample or g
Date Analyzed: 2/10/2014

Radionuclide: Sr-90 (Medium mass)

Replicates		
#1	1911	pCi/sample or g
#2	1945	pCi/sample or g
#3	1893	pCi/sample or g

Mean = 1916.333

1 sigma = 26.40707 1.96 sigma = 51.75786

True Value minus 5% = 1851.313 (True Value - 5%)
True Value plus 5% = 2046.188 (True Value + 5%)

Accuracy:
Mean value within 5% of Certified (True) Value? **Yes** **(Acceptance Criteria)**

Precision:
1.96 sigma Value Within 10% of Mean Value? **Yes** **(Acceptance Criteria)**

Standard Reverification Acceptable? **Yes**

Note: Criteria for reverification of radiological standards is taken from the DOE QSAS and LANL Statements of Work

Reviewed By/Date: Jody Watson 2/10/14

SOP Reference: STL-QA-0002, Current Revision

St. Louis Radiological Standard Reverification Form

Standard ID Number: Sr-90_00018 (51512)
True Value = 1992 pCi/sample or g
Date Analyzed: 2/10/2014

Radionuclide: Sr-90 (High mass)

Replicates		
#1	1907	pCi/sample or g
#2	1930	pCi/sample or g
#3	1937	pCi/sample or g

Mean = 1924.667

1 sigma = 15.69501 1.96 sigma = 30.76222

True Value minus 5% = 1892.4 (True Value - 5%)
True Value plus 5% = 2091.6 (True Value + 5%)

Accuracy:
Mean value within 5% of Certified (True) Value? **Yes** **(Acceptance Criteria)**

Precision:
1.96 sigma Value Within 10% of Mean Value? **Yes** **(Acceptance Criteria)**

Standard Reverification Acceptable? **Yes**

Note: Criteria for reverification of radiological standards is taken from the DOE QSAS and LANL Statements of Work

Reviewed By/Date: Jody Watson 2/10/14

SOP Reference: STL-QA-0002, Current Revision

Protean Beta ICV-ACV recoveries from March 2013			
Protean Detector	**Low** pCi/sample	**Medium** pCi/sample	**High** pCi/sample
0	1962	1945	1971
1	2003	1947	1995
2	1960	1965	1998
3	1988	1942	1995
4	1977	1940	1997
5	1969	1949	2013
6	1986	1938	1986
7	1969	1964	1981
Average pCi/sample	1976.75	1948.75	1992

Protean Beta ICV-ACV recoveries from February 2014			
Protean Detector	**Low** pCi/sample	**Medium** pCi/sample	**High** pCi/sample
4	1935	1911	1907
5	1941	1945	1930
6	1924	1893	1937
Average pCi/sample	1933.33	1916.33	1924.67

Standard ID
Strontium 90
Sr-90_00018 #51512
Cert# 92352 Ref. date 11/29/12

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Analysis Report for Gross Alpha/Beta

Batch: M122640 **Operator:** 63903

Sample ID	WRKNO	Aliquot		Mass	Instr ID	CountTime		Ts	Tb	Dilution	Sigma	
	Analyte	Cs	Cb	XT	CPMs	CPMb	Eff	Activity	UncTot	UncCnt	MDA	DLC
ICVABT-51512;B1	NA	1.000E+000sample		0.0513 g	Protean4	2/10/14 22:54		5.00	1000.00	1.00	2.00	
	Gross Alpha	0	49	0.00	0.000E+000	4.900E-002	0.1157	**-1.908E-001**pCi/sample	5.869E-002	5.452E-002	3.382E+000	8.968E-001
	Gross Beta	9072	417	0.00	1.814E+003	4.170E-001	0.4224	**1.935E+003**pCi/sample	1.977E+002	4.063E+001	1.594E+000	7.165E-001
ICVABT-51512;B2	NA	1.000E+000sample		0.1114 g	Protean4	2/10/14 23:19		5.00	1000.00	1.00	2.00	
	Gross Alpha	1	49	0.00	2.000E-001	4.900E-002	0.0830	**8.194E-001**pCi/sample	2.174E+000	2.172E+000	4.713E+000	1.250E+000
	Gross Beta	8432	417	0.00	1.686E+003	4.170E-001	0.3973	**1.911E+003**pCi/sample	1.956E+002	4.164E+001	1.694E+000	7.616E-001
ICVABT-51512;B3	NA	1.000E+000sample		0.1813 g	Protean4	2/10/14 23:04		5.00	1000.00	1.00	2.00	
	Gross Alpha	1	49	0.00	2.000E-001	4.900E-002	0.0540	**1.260E+000**pCi/sample	3.343E+000	3.340E+000	7.248E+000	1.922E+000
	Gross Beta	8054	417	0.00	1.611E+003	4.170E-001	0.3804	**1.907E+003**pCi/sample	1.954E+002	4.251E+001	1.770E+000	7.956E-001

Laboratory Control Sample Information

SampID	WRKNO	Analyte	Activity	StdAdded	Recovery	LCL	UCL	ZFactor
					%			

Sample Duplicate Information

Sample ID	Dup Sample ID	Analyte	Sample Activity	Dup Activity	RPD	RER	DER	ZFactor

Matrix Spike Information

SampID	SampMSID	Analyte	Sample Activity	MS Activity	StdAdded	MSRecovery	ZFactor
						%	

Blanks Information

SampID	WRKNO	Analyte	Activity	UncTotal	ZFactor

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Analysis Report for Gross Alpha/Beta

Batch: M122640 **Operator:** 63903

Sample ID	WRKNO / Analyte	Aliquot Cs	Aliquot Cb	Mass XT	Instr ID CPMs	CountTime CPMb	CountTime Eff	Activity	Ts	Tb UncTot	Dilution UncCnt	Sigma MDA	DLC
ICVABT-51512;B1	NA	1.000E+000sample		0.0513 g	Protean5	2/10/14 23:04			5.00	1000.00	1.00	2.00	
	Gross Alpha	0	43	0.00	0.000E+000	4.300E-002	0.1145	**-1.692E-001**pCi/sample		5.510E-002	5.161E-002	3.337E+000	8.490E-001
	Gross Beta	9111	398	0.00	1.822E+003	3.980E-001	0.4228	**1.941E+003**pCi/sample		1.983E+002	4.068E+001	1.569E+000	6.992E-001
ICVABT-51512;B2	NA	1.000E+000sample		0.1114 g	Protean5	2/10/14 22:54			5.00	1000.00	1.00	2.00	
	Gross Alpha	0	43	0.00	0.000E+000	4.300E-002	0.0823	**-2.353E-001**pCi/sample		7.661E-002	7.176E-002	4.639E+000	1.180E+000
	Gross Beta	8552	398	0.00	1.710E+003	3.980E-001	0.3960	**1.945E+003**pCi/sample		1.990E+002	4.207E+001	1.675E+000	7.465E-001
ICVABT-51512;B3	NA	1.000E+000sample		0.1813 g	Protean5	2/10/14 23:19			5.00	1000.00	1.00	2.00	
	Gross Alpha	2	43	0.00	4.000E-001	4.300E-002	0.0532	**3.022E+000**pCi/sample		4.802E+000	4.790E+000	7.178E+000	1.826E+000
	Gross Beta	8046	398	0.00	1.609E+003	3.980E-001	0.3755	**1.930E+003**pCi/sample		1.977E+002	4.304E+001	1.766E+000	7.873E-001

Laboratory Control Sample Information

SampID	WRKNO	Analyte	Activity	StdAdded	Recovery %	LCL	UCL	ZFactor

Sample Duplicate Information

Sample ID	Dup Sample ID	Analyte	Sample Activity	Dup Activity	RPD	RER	DER	ZFactor

Matrix Spike Information

SampID	SampMSID	Analyte	Sample Activity	MS Activity	StdAdded	MSRecovery %	ZFactor

Blanks Information

SampID	WRKNO	Analyte	Activity	UncTotal	ZFactor

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Analysis Report for Gross Alpha/Beta

Batch: M122640 **Operator:** 63903

Sample ID	WRKNO	Aliquot		Mass		Instr ID	CountTime		Ts	Tb	Dilution	Sigma	
	Analyte	Cs	Cb	XT		CPMs	CPMb	Eff	Activity	UncTot	UncCnt	MDA	DLC
ICVABT-51512;B1	NA	1.000E+000	sample	0.0513	g	Protean6	2/10/14 23:19		5.00	1000.00	1.00	2.00	
	Gross Alpha	0	87	0.00	0.000E+000	8.700E-002	0.1165		-3.362E-001 pCi/sample	8.166E-002	7.210E-002	3.776E+000	1.186E+000
	Gross Beta	8992	520	0.00	1.798E+003	5.200E-001	0.4209		1.924E+003 pCi/sample	1.966E+002	4.059E+001	1.718E+000	8.029E-001
ICVABT-51512;B2	NA	1.000E+000	sample	0.1114	g	Protean6	2/10/14 23:04		5.00	1000.00	1.00	2.00	
	Gross Alpha	0	87	0.00	0.000E+000	8.700E-002	0.0842		-4.657E-001 pCi/sample	1.131E-001	9.985E-002	5.230E+000	1.642E+000
	Gross Beta	8356	520	0.00	1.671E+003	5.200E-001	0.3976		1.893E+003 pCi/sample	1.937E+002	4.142E+001	1.819E+000	8.499E-001
ICVABT-51512;B3	NA	1.000E+000	sample	0.1813	g	Protean6	2/10/14 22:54		5.00	1000.00	1.00	2.00	
	Gross Alpha	0	87	0.00	0.000E+000	8.700E-002	0.0559		-7.014E-001 pCi/sample	1.703E-001	1.504E-001	7.877E+000	2.474E+000
	Gross Beta	8127	520	0.00	1.625E+003	5.200E-001	0.3778		1.937E+003 pCi/sample	1.985E+002	4.300E+001	1.914E+000	8.945E-001

Laboratory Control Sample Information

SampID	WRKNO	Analyte	Activity	StdAdded	Recovery %	LCL	UCL	ZFactor

Sample Duplicate Information

Sample ID	Dup Sample ID	Analyte	Sample Activity	Dup Activity	RPD	RER	DER	ZFactor

Matrix Spike Information

SampID	SampMSID	Analyte	Sample Activity	MS Activity	StdAdded	MSRecovery %	ZFactor

Blanks Information

SampID	WRKNO	Analyte	Activity	UncTotal	ZFactor

RadCapture, version 4.2.06, released 2/9/2012

TestAmerica St. Louis

Standards Preparation Logbook Record

Nov-28-2012

Logbook: \\Qstlmo01\Stdslog\RAD_STD.std

RAD12-0042, Sr-90 Sr-90_00017 #51511 Analyst: hursts

Vendor: Analytics Lot No.: 92352
Solvent: None
Date Prep./Opened: 11-28-2012
Date Expires(1): 11-29-2062 (50 Years)
Date Expires(2): 11-29-2062 (50 Years)
Cert: 92352 Activity: 37490Bq Mass: 5.02357 Ref. Date: 11/29/12

Component	Initial Conc (dpm/g)	Final Conc (dpm/g)
Sr-90	447,769	447,769

RAD12-0043, Sr-90 Calibration STD Sr-90_00018 #51512 Analyst: hursts

Solvent: None Volume (ml): 100.00
Date Prep./Opened: 11-28-2012
Date Expires(1): 11-29-2062 (50 Years)
Date Expires(2): 11-29-2062 (50 Years)

Parent Std No.: RAD12-0042, Sr-90 Aliquot Amount (g): 4.9997
Parent Date Expires(1): 11-29-2062 Parent Date Expires(2): 11-29-2062

Component	Initial Conc (dpm/g)	Final Conc (dpm/mL)
Sr-90	447,769	22,387

Reviewed By: SD

St. Louis Radiological Standard Reverification Form

Standard ID Number: Rad12-0043
True Value = 2016.7 pCi/L or g
Date Analyzed: 11/30/2012

Radionuclide: Sr90

	Replicates	
#1	1964	pCi/L or g
#2	1958	pCi/L or g
#3	2015	pCi/L or g

Mean = 1979

1 sigma = 31.32092 1.96 sigma = 61.389

True Value minus 5% = 1915.865 (True Value - 5%)
True Value plus 5% = 2117.535 (True Value + 5%)

Accuracy:
Mean value within 5% of Certified (True) Value? **Yes** **(Acceptance Criteria)**

Precision:
1.96 sigma Value Within 10% of Mean Value? **Yes** **(Acceptance Criteria)**

Standard Reverification Acceptable? **Yes**

Note: Criteria for reverification of radiological standards is taken from the DOE QSAS and LANL Statements of Work

Reviewed By/Date: 11/30/12

SOP Reference: STL-QA-0002, Current Revision

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Analysis Report for Gross Alpha/Beta

Batch: M122629 **Operator:** 63903

Sample ID	WRKNO	Aliquot		Mass		Instr ID	CountTime		Ts	Tb	Dilution	Sigma	
	Analyte	Cs	Cb	XT		CPMs	CPMb	Eff	Activity	UncTot	UncCnt	MDA	DLC
verification-1b	NA	1.000E+000sample		0.0536	g	Purple16	11/30/12 10:42		8.00	1000.00	1.00	1.00	
	Gross Alpha	123	175	0.00		1.538E+001	1.750E-001	0.4314	**1.587E+001**pCi/sample	1.707E+000	1.448E+000	8.638E-001	3.593E-001
	Gross Beta	14954	485	0.00		1.869E+003	4.850E-001	0.4285	**1.964E+003**pCi/sample	9.953E+001	1.607E+001	1.211E+000	6.021E-001
verification-2b	NA	1.000E+000sample		0.0529	g	Purple17	11/30/12 10:43		8.00	1000.00	1.00	1.00	
	Gross Alpha	53	87	0.00		6.625E+000	8.700E-002	0.1306	**2.254E+001**pCi/sample	3.391E+000	3.138E+000	2.356E+000	8.365E-001
	Gross Beta	15152	362	0.00		1.894E+003	3.620E-001	0.4356	**1.958E+003**pCi/sample	9.919E+001	1.591E+001	1.077E+000	5.117E-001
verification-3b	NA	1.000E+000sample		0.0528	g	Purple18	11/30/12 10:43		8.00	1000.00	1.00	1.00	
	Gross Alpha	85	62	0.00		1.063E+001	6.200E-002	0.1313	**3.624E+001**pCi/sample	4.462E+000	3.954E+000	2.160E+000	7.027E-001
	Gross Beta	15378	395	0.00		1.922E+003	3.950E-001	0.4296	**2.015E+003**pCi/sample	1.020E+002	1.625E+001	1.125E+000	5.420E-001

Laboratory Control Sample Information

SampID	WRKNO	Analyte	Activity	StdAdded	Recovery	LCL	UCL	ZFactor
					%			

Sample Duplicate Information

Sample ID	Dup Sample ID	Analyte	Sample Activity	Dup Activity	RPD	RER	DER	ZFactor

Matrix Spike Information

SampID	SampMSID	Analyte	Sample Activity	MS Activity	StdAdded	MSRecovery	ZFactor
						%	

Blanks Information

SampID	WRKNO	Analyte	Activity	UncTotal	ZFactor

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Prep Report for Gross Alpha/Beta

Batch: M122629 **Prep Analyst:** 250

SampID	WRKNO	Aliquot		Gross	Tare	Mass	Dilution
verification-1b	NA	1.000E+000	sample	8.7067 g	8.6531 g	0.0536 g	1.00
verification-2b	NA	1.000E+000	sample	8.6615 g	8.6086 g	0.0529 g	1.00
verification-3b	NA	1.000E+000	sample	8.6935 g	8.6407 g	0.0528 g	1.00

purple 16 17 18

Spike Information

Sample ID	Standard ID	Analyte	Std Conc	Aliquot	Ref Date	StdAdded
	Rad12-0043	SR-90	22.387 dpm/mL	0.1 mL	11-29-12	

MS — Spiked By

LM — Spike Verified By

11-28-12 — Spike Date

Standard Operating Procedures

SOPNumber	Title	Revision
☐		

Reviewed By — 11/30/12 Review Date

MS — Analyst/Relenquished By — 11/28/12 Release Date

Received By — 11/28/12 Receipt Date

MS 11-30-12 ~~112~~ 112343897/MS/11-28-12

Balance ID / Initials / Date

Reagent

Sr-90_00023

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sr-90_00023

Reagent ID: Sr-90_00023

		Expiration Date:	04/23/2015
Description:	Sr-90 Gross Beta Spike	Laboratory:	TestAmerica St. Louis
No. of Bottles:	1	Prepared By:	Bernsen, Sarah C
Storage Location:	RAD Alpha/Beta STDs	Solvent:	0.1M HCl
Reagent Volume:	500.000 mL	Solvent Lot:	n/a
Creation Date:	04/22/2014		
Container(s):	351152		
Comment:	passed verification on 4/23/14		

351152
ID: Sr-90_00023
Exp: 04/23/15 Prpd: SCB Crt: 04/22/14
Sr-90 Gross Beta Spike

Reagent Analyte Information

Analyte	Source ID	Source Exp. Date	Source Conc.	Source Conc. Units	Final Conc.	Final Conc. Units
Gross Beta	Sr-90_00018	11/29/2062	44774.23300	dpm/mL	44.77423	dpm/mL
Sr-90	Sr-90_00018	11/29/2062	22387.11700	dpm/mL	22.38712	dpm/mL

Source Reagents

Reagent	Description	Type	Expiration	Vendor	Vendor Lot #	Vendor Cat Lot #	Volume Used	Volume Units
Sr-90_00018	Sr-90 Calibration STD		11/29/62				0.50000	mL

St. Louis Radiological Standard Reverification Form

Standard ID Number: Sr-90_00023
True Value = 97.47579 DPM/L or g
Date Analyzed: 4/23/2014

Radionuclide: Gross Beta

	Replicates	
#1	101.2	DPM/L or g
#2	100.4	DPM/L or g
#3	100	DPM/L or g

Mean = 100.5333

1 sigma = 0.61101 1.96 sigma = 1.19758

True Value minus 5% = 92.602 (True Value - 5%)
True Value plus 5% = 102.3496 (True Value + 5%)

Accuracy:
Mean value within 5% of Certified (True) Value? **Yes** **(Acceptance Criteria)**

Precision:
1.96 sigma Value Within 10% of Mean Value? **Yes** **(Acceptance Criteria)**

Standard Reverification Acceptable? **Yes**

Note: Criteria for reverification of radiological standards is taken from the DOE QSAS and LANL Statements of Work

Reviewed By/Date: Micha Korrinhizer 4/24/2014

SOP Reference: STL-QA-0002, Current Revision

$\frac{19.495}{38.99\ pCi} = \frac{97.475\ pCi}{L}$
$.2\ L$

For Gross Beta: ~~Always enter Sr90 value in to Decay Correct spreadsheet & use Sr90 value as true value~~ use corrected activity in pCi & divide by aliq.

Ex: $\frac{19.495\ pCi/L}{0.2\ L} = 97.475\ pCi/L$

on Decay Corr. spreadsheet

20 mL 4/23/14 400 mins.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Prep Report for Gross Alpha/Beta

Batch: M142830 **Prep Analyst:** 403651

SampID	WRKNO	Aliquot	Gross	Tare	Mass	Dilution
ver 1	NA Protean 13	2.000E+002 mL	8.6640 g	8.6220 g	0.0420 g	1.00
ver 2	NA 14	2.000E+002 mL	8.6411 g	8.5989 g	0.0422 g	1.00
ver 3	NA 15	2.000E+002 mL	8.6720 g	8.6307 g	0.0413 g	1.00

Spike Information

Sample ID	Standard ID	Analyte	Std Conc	Aliquot	Ref Date	StdAdded

SUB — Spiked By

NMP per SUB — Spike Verified By

4.23.14 — Spike Date

Standard Operating Procedures

SOPNumber	Title	Revision
☐		

Reviewed By — Review Date

SUB — Analyst/Relenquished By

4.23.14 — Release Date

mk — Received By

4/23/14 — Receipt Date

11214816615 | SUB | 4.23.14

Balance ID / Initials / Date

Sr-90 00023 1mL

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Analysis Report for Gross Alpha/Beta

Batch: M142830 **Operator:** 403135

Sample ID	WRKNO	Aliquot		Mass	Instr ID	CountTime		Ts	Tb	Dilution	Sigma	
	Analyte	Cs	Cb	XT	CPMs	CPMb	Eff	Activity	UncTot	UncCnt	MDA	DLC
ver 1	NA	2.000E+002mL		0.0420 g	Protean13	4/23/14 15:05		400.00	1000.00	1.00	2.00	
	Gross Alpha	28	50	3.27	7.000E-002	5.000E-002	0.1227	**3.672E-001**pCi/L	5.524E-001	5.508E-001	9.235E-001	4.775E-001
	Gross Beta	7890	450	3.27	1.973E+001	4.500E-001	0.4288	**1.012E+002**pCi/L	1.039E+001	2.344E+000	7.257E-001	4.117E-001
ver 2	NA	2.000E+002mL		0.0422 g	Protean14	4/23/14 15:06		400.00	1000.00	1.00	2.00	
	Gross Alpha	29	58	2.47	7.250E-002	5.800E-002	0.1202	**2.717E-001**pCi/L	5.806E-001	5.797E-001	1.005E+000	5.250E-001
	Gross Beta	7820	501	2.47	1.955E+001	5.010E-001	0.4274	**1.004E+002**pCi/L	1.030E+001	2.342E+000	7.649E-001	4.352E-001
ver 3	NA	2.000E+002mL		0.0413 g	Protean15	4/23/14 15:06		400.00	1000.00	1.00	2.00	
	Gross Alpha	38	68	4.40	9.500E-002	6.800E-002	0.1221	**4.982E-001**pCi/L	6.475E-001	6.450E-001	1.061E+000	5.597E-001
	Gross Beta	7736	507	4.40	1.934E+001	5.070E-001	0.4239	**1.000E+002**pCi/L	1.027E+001	2.350E+000	7.781E-001	4.425E-001

Laboratory Control Sample Information

SampID	WRKNO	Analyte	Activity	StdAdded	Recovery %	LCL	UCL	ZFactor

Sample Duplicate Information

Sample ID	Dup Sample ID	Analyte	Sample Activity	Dup Activity	RPD	RER	DER	ZFactor

Matrix Spike Information

SampID	SampMSID	Analyte	Sample Activity	MS Activity	StdAdded	MSRecovery %	ZFactor

Blanks Information

SampID	WRKNO	Analyte	Activity	UncTotal	ZFactor

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sr-90_00023

Reagent ID: Sr-90_00023

Description:	Sr-90 Gross Beta Spike	Expiration Date:	09/10/2014
No. of Bottles:	1	Laboratory:	TestAmerica St. Louis
Storage Location:	RAD Alpha/Beta STDs	Prepared By:	Bernsen, Sarah C
Reagent Volume:	500.000 mL	Solvent:	0.1M HCl
Creation Date:	04/22/2014	Solvent Lot:	n/a
Container(s):	351152		
Comment:			

Reagent Analyte Information

Analyte	Source ID	Source Exp. Date	Source Conc.	Source Conc. Units	Final Conc.	Final Conc. Units
Gross Beta	Sr-90_00018	11/29/2062	44774.23300	dpm/mL	44.77423	dpm/mL
Sr-90	Sr-90_00018	11/29/2062	22387.11700	dpm/mL	22.38712	dpm/mL

Source Reagents

Reagent	Description	Type	Expiration	Vendor	Vendor Lot #	Vendor Cat Lot #	Volume Used	Volume Units
Sr-90_00018	Sr-90 Calibration STD		11/29/62				0.50000	mL

Strontium 90

Initial Activity:	44.77423	dpm				
Reference Date:	11/29/2012					
Current Date:	4/23/2014		(or date at which you wish to determine activity)			
Elapsed Time:	510.000	days				
Half Life:	10409.625	days				
Exponential Term:	0.966610707					
Corrected Activity:	43.27925012	dpm	19.49515771	pCi	0.721321	Bq
Activity (Sr/Y-90)	86.55850024	dpm	38.99031542	pCi	1.442642	Bq

Reagent

STD SI_00009

INORGANIC VENTURES™
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 | 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number (010105).

ACCREDITED Testing Laboratory Certificate 863.01
ACCREDITED Reference Material Producer Certificate 863.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGSI1
Lot Number:	G2-SI03029
Matrix:	tr. HNO3 / tr. HF
Value/Analyte(s):	1 000 µg/mL Silicon
Starting Material:	SiO2
Starting Material Lot#:	1551
Starting Material Purity:	99.9993%

468740
ID: STD SI_00009
Exp:10/01/15 Prpd:CCB Opn:10/08/14
SI 1000PPM

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1,004 ± 5 µg/mL weighted mean

Certified Density: 1.003 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **1,005 ± 3 µg/mL**
ICP Assay NIST SRM 3150 Lot Number: 071204

Assay Method #2 **1,000 ± 5 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.004820	M	Er	<	0.012050	M	Mn	<	0.009640	O	S	<	0.042951	O	V	<	0.001546
O	Al	<	0.005154	M	Eu	<	0.007230	M	Mo	<	0.004820	M	Sb	<	0.001205	O	W	<	0.006872
M	As	<	0.024100	O	Fe		0.000689	n	Na	<		O	Sc	<	0.000344	M	Y	<	0.096401
M	Au	<	0.007230	M	Ga	<	0.002410	M	Nb	<	0.001205	M	Se	<	0.019280	M	Yb	<	0.002410
n	B	<		M	Gd	<	0.002410	M	Nd	<	0.004820	s	Si	<		O	Zn	<	0.000344
M	Ba	<	0.024100	M	Ge	<	0.014460	O	Ni	<	0.003951	M	Sm	<	0.002410	M	Zr	<	0.012050
O	Be	<	0.000344	M	Hf	<	0.004820	n	Os	<		M	Sn		0.000677				
M	Bi	<	0.000964	O	Hg	<	0.018898	O	P	<	0.008590	O	Sr	<	0.000120				
O	Ca		0.003102	M	Ho	<	0.001205	M	Pb	<	0.007230	O	Ta	<	0.010308				
M	Cd	<	0.007230	M	In	<	0.024100	M	Pd	<	0.012050	M	Tb	<	0.000723				
M	Ce	<	0.012050	M	Ir	<	0.012050	M	Pr	<	0.000723	M	Te	<	0.072301				
M	Co	<	0.007230	O	K		0.002757	M	Pt	<	0.004820	M	Th	<	0.002410				
O	Cr	<	0.002577	M	La	<	0.001205	M	Rb	<	0.002410	O	Ti		0.000689				
M	Cs	<	0.000723	O	Li	<	0.000034	M	Re	<	0.002410	M	Tl	<	0.002410				
O	Cu	<	0.001718	M	Lu	<	0.000964	M	Rh	<	0.002410	M	Tm	<	0.000964				
M	Dy	<	0.014460	O	Mg		0.000207	M	Ru	<	0.004820	M	U	<	0.004820				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Keep tightly sealed when not in use. Store and use at 20 ± 4°C. Do not pipette from the container. Do not return removed aliquots to container.

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 28.09 +4 6 Si(OH)x(F)y2-

Chemical Compatibility -Soluble in HCl, HF, H3PO4 H2SO4 and HNO3 as the Si(OH)x(F)y2-. Avoid neutral to basic media. Unstable at ppm levels with metals that would pull F- away (i.e. Do not mix with Alkaline or Rare Earths, or high levels of transition elements unless they are fluorinated. Stable with most inorganic anions with a tendency to hydrolyze forming silicic acid (silicic acid is soluble up to ∼100 ppm in water) in all dilute acids except HF.

Stability - 2-100 ppb levels - stability unknown - (alone or mixed with all other metals) as the Si(OH)x(F)y2-. 1-10,000 ppm single element solutions as the Si(OH)x(F)y2- chemically stable for years in 2-5 % HNO3 / trace HF in a LDPE container.

Si Containing Samples (Preparation and Solution) -Metal (Soluble in 1:1:1 H2O / HF / HNO3); Oxide - SiO2, amorphic (dissolve by heating in 1:1:1 H2O / HF / HNO3); Oxide - quartz (fuse in Pt0 with Na2CO3); Geological Samples(fuse in Pt0with Na2CO3 followed by HCl solution of the fuseate); Organic Matrices containing silicates and non volatile silicon compounds (dry ash at 4500C in Pt0 and dissolve by gently warming with 1:1:1 H2O / HF / H2SO4 or fuse / ash with Na2CO3 and dissolve fuseate with HCl / H2O); Silicone Oils - dimethyl silicones depolymerize to form volatile monomer units when heated (Measure directly in alcoholic KOH / xylene mixture where sample is treated first with the KOH at 60-1000C to "unzip" the Si- O-Si polymeric structure or digest with conc. H2SO4 / H2O2 followed by cooling and dissolution of the dehydrated silica with HF.) Note that the direct analysis of silicone oils in an organic solvent will result in false high results due to high vapor pressure of volatile monomer units like hexamethylcyclotrisiloxane. The KOH forms the K2+Si(CH3)2O= salt which is not volatile at room temperature.

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 28 amu	4000 - 8000 ppt	N/A	N2, 12C16O
ICP-OES 212.412 nm	0.02/0.01 µg/mL	1	Hf, Os, Mo, Ta
ICP-OES 251.611 nm	0.012/0.003 µg/mL	1	Ta, U, Zn, Th
ICP-OES 288.158 nm	0.03/0.004 µg/mL	1	Ta, Ce, Cr, Cd, Th

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

January 24, 2014

11.2 Expiration Date

EXPIRES
1 FEB 2015

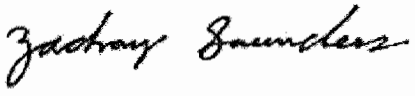
11.3 Period of Validity

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is handled and stored in accordance with instructions given in Sec 7.0 and used prior to the date given in Sec 11.2. This certification is nullified if the CRM/RM is damaged, contaminated, or otherwise modified.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

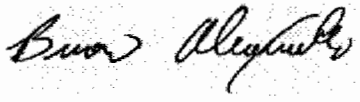
Certificate Prepared By:

Zach Saunders
Product Documentation Technician



Certificate Approved By:

Brian Alexander
PhD., Technical Process Director



Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

Th-229_00018

St. Louis Radiological Standard Reverification Form

Standard ID Number: Th-229_00018 (A)
True Value = 67.229 DPM/L or g
Date Analyzed: 9/2/2014

Radionuclide: Th-229

	Replicates	
#1	65.538	DPM/L or g
#2	64.749	DPM/L or g
#3	62.033	DPM/L or g

Mean = 64.10667

1 sigma = 1.838668 1.96 sigma = 3.603789

True Value minus 5% = 63.86755 (True Value - 5%)
True Value plus 5% = 70.59045 (True Value + 5%)

Accuracy:
Mean value within 5% of Certified (True) Value? **Yes** **(Acceptance Criteria)**

Precision:
1.96 sigma Value Within 10% of Mean Value? **Yes** **(Acceptance Criteria)**

Standard Reverification Acceptable? **Yes**

Note: Criteria for reverification of radiological standards is taken from the DOE QSAS and LANL Statements of Work

Reviewed By/Date: RTM 9/2/2014

SOP Reference: STL-QA-0002, Current Revision

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

960mins.

Aliquot Only

Batch No. : —

Balance ID : —

No.	Sample Number	Aliquot (g / mL)	Crucible ID	Dilution
248 ~~183~~ 1	Ver 1	0.1	RC = 115	
249 ~~185~~ 2	2	1	RC = 116	
250 ~~181~~ 3	3		RC = 117	
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				

Note: If a section below is not used, marked the N/A box and initial & date next to the N/A.
i.e. Mark the N/A box if a tracer is not added to the sample(s) then initial and date next to the N/A

Tracer ☐ N/A

Initials / Date

Isotope : Th-230
Std Sol'n No. : Th-230.00023
Vol (mL) : 0.3
Ref Activity (dpm/mL) :
Act Ref Date :

Samples Spiked and Traced By: SLB 8/27/14 (Initials / Date)

Verification Signature & Date: MBP/SLB 8/27/14 (Initials / Date)

LCS Standard ☐ N/A

Initials / Date

Isotope : Th-229
Std Sol'n ID. : Th-229.00018 BothLA
Vol (mL) : 0.1
Ref Activity (dpm/mL) : 67.229
Act Ref Date :

SOP's applied in preparing these samples. Mark box to left for all that apply:

☐	ST-RC-0003 Rev.	☐	ST-RC-0040 Rev.	☐	ST-RC-0110 Rev.
☐	ST-RC-0004 Rev.	☐	ST-RC-0041 Rev.	☐	ST-RC-0120 Rev.
☐	ST-RC-0014 Rev.	☐	ST-RC-0050 Rev.	☐	ST-RC-0232 Rev.
☐	ST-RC-0020 Rev.	☐	ST-RC-0090 Rev.	☐	ST-RC-0238 Rev.
☐	ST-RC-0021 Rev.	☐	ST-RC-0100 Rev.	☐	ST-RC-0240 Rev.
				☐	ST-RC-0241 Rev.
				☐	ST-RC-0242 Rev.
				☐	ST-RC-5016 Rev.
				☐	
				☐	

Isotope(s)

αβ ☐	Iso Pu ☐	Tc-99 ☐	Iso Cm ☐
Iso Am ☐	Ra ☐	Iso Th ☑	Pu-241 ☐
KPA ☐	Sr ☐	Iso U ☐	Th-229 ☐
Np ☐	TAR ☐	C-14 ☐	Cl-36 ☐

Count Time	Matrix
Long Count ☐	Soil ☐
Short Count ☐	H_2O ☐

Prepared By : SLB
Date : 8/27/14

Reviewed by:
Date:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Reagent ID: Th-229_00018

Description:	Th-229 Tracer	Expiration Date:	08/20/2015
No. of Bottles:	2	Laboratory:	TestAmerica St. Louis
Storage Location:	RAD Actinide STDs	Prepared By:	Bernsen, Sarah C
Reagent Volume:	500.000 mL	Solvent:	0.1M HNO3
Creation Date:	08/20/2014	Solvent Lot:	n/a
Container(s):	430571, 430625		
Comment:	500 mL split between bottle A and bottle B.		

Reagent Analyte Information

Analyte	Source ID	Source Exp. Date	Source Conc.	Source Conc. Units	Final Conc.	Final Conc. Units
Th-229	Th-229_00017	08/06/2064	2240.98600	dpm/mL	67.22958	dpm/mL

Source Reagents

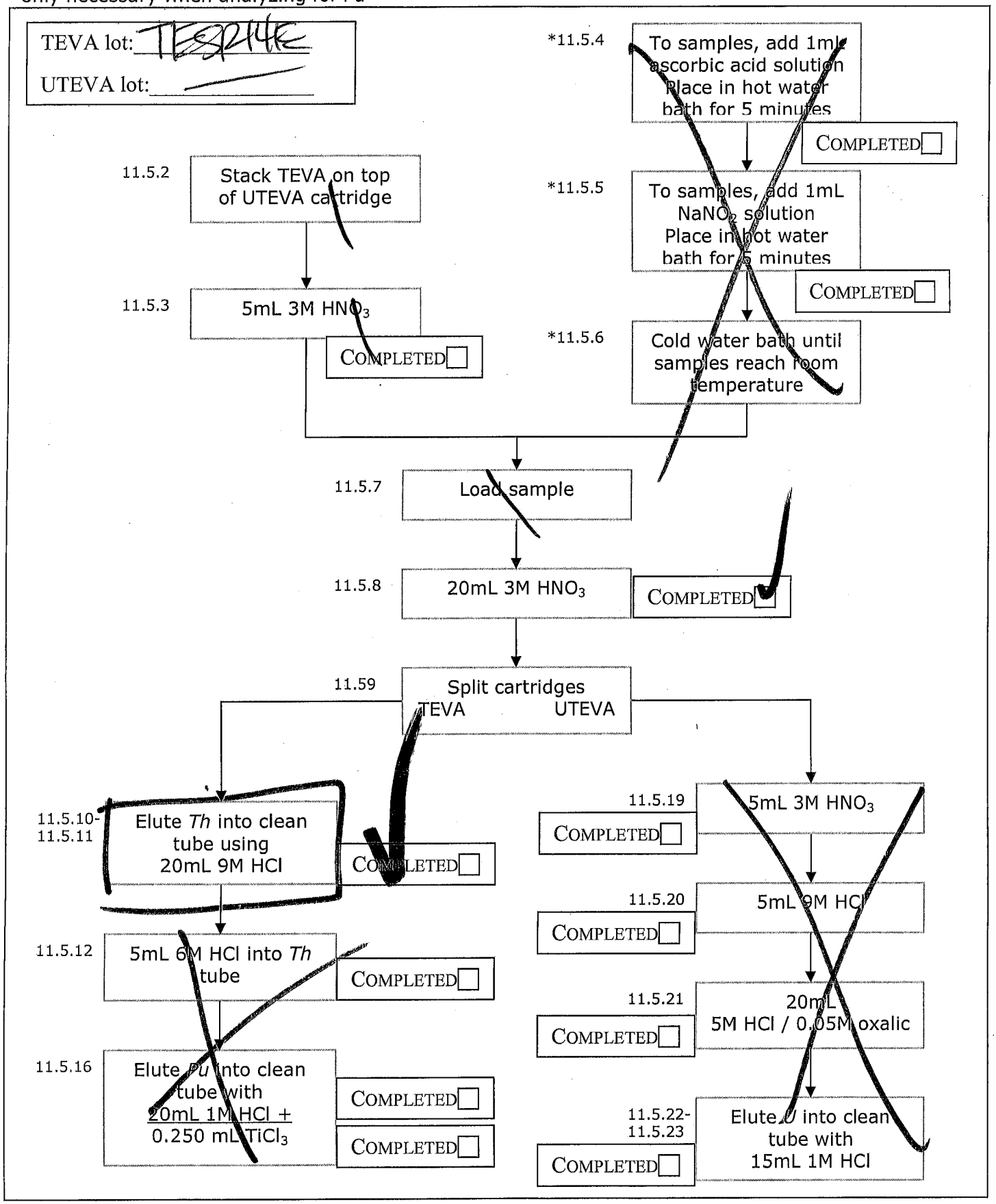
Reagent	Description	Type	Expiration	Vendor	Vendor Lot #	Vendor Cat Lot #	Volume Used	Volume Units
Th-229_00017	Th-229 Parent		08/06/64				15.00000	mL

Sequential Thorium, Plutonium and Uranium via TEVA/UTEVA ST-RC-0242

Batch: ver Th

All rinses should flow at 1 mL/minute (only 3M HNO_3 may be done at 3 mL/minute)

*only necessary when analyzing for *Pu*



Thorium-229

Initial Activity:		67.229	dpm					
Reference Date:		8/6/2014						
Current Date:		9/2/2014		(or date at which you wish to determine activity)				
Elapsed Time:		27	days					
Half Life:		2680935	days	64342440				
Exponential Term:		0.999993019						
Corrected Activity:		67.22853069	dpm	30.28312193	pCi			

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
8:35:28PM 9/2/2014

Sample

Sample Name: Verification 1
SampleType: Sample
:
Sample Collection Date:

Spectrum #1 Analysis #1
Sample Volume : 0.1000mL
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: Th-229_00018(a)
AnalysisID: 620409

Analyst: 60040

Tracer

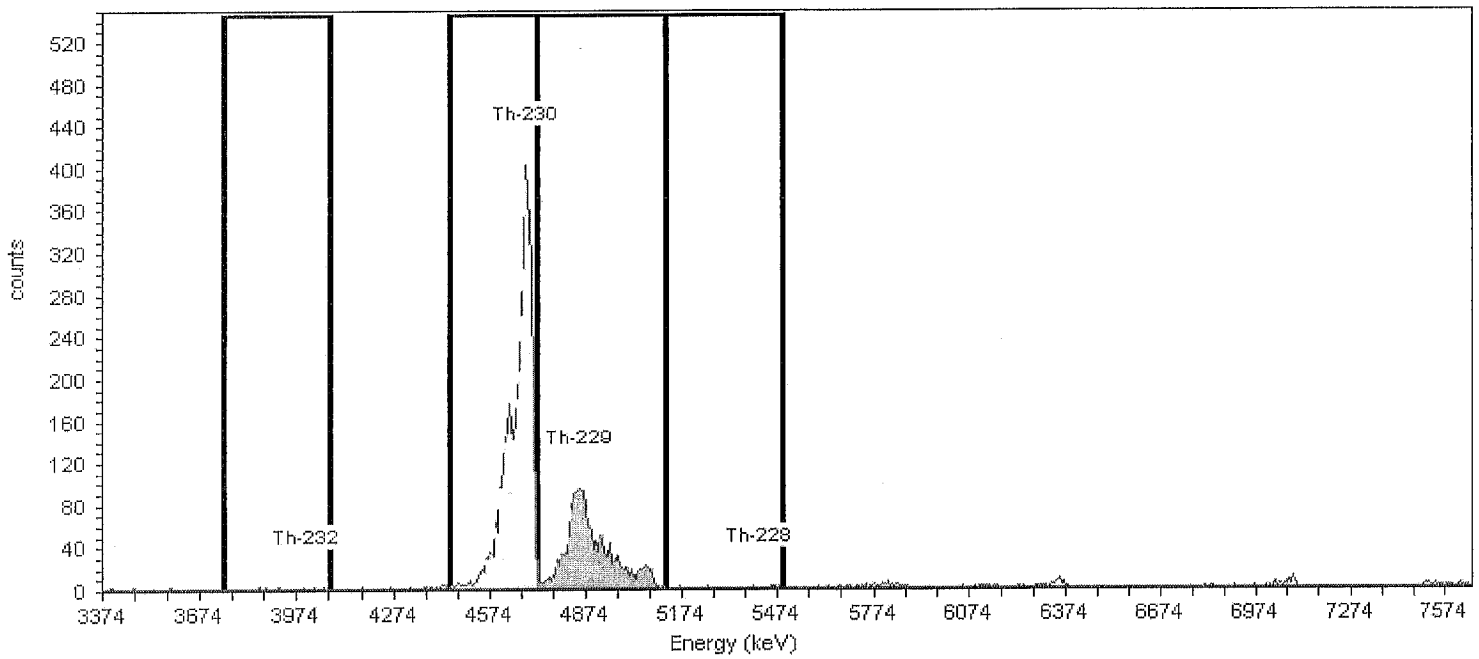
Tracer Name: Th-230_00023
Tracer Activity: 47.94 DPM/mL x (Vol.)0.30 mL = 14.38 DPM
Tracer Ref. Date: 4/11/2011 11:00:10AM

Tracer Nuclide: Th-230
Tracer Recovery: 98.42%

Acquisition

Detector: AV115
Serial Number: 49-037E4
Acquisition Start Date: 9/2/2014 2:33:49AM
Live Time: 960.00 min.
Real Time: 960.02 min.
Background Date: 8/20/2014 11:43:50PM
Background Info: Sample: ICB;AV115; Det: AV115; Spectrum #1; Aug-20-2014 23:43

Calibration Name: IC-9817;AV115-20140507
Calibration Date: 5/7/2014 10:49:29PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 26.26% +/- 0.32% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = Th-230_Tracer
Decay Correction: 9/2/2014 2:32:45AM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Thorium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
Th-232	3999.0	4,010.0	-11.0	3743.0	4072.0	11.4	100.2	7	3.0000	4.00	0.161	DPM/mL
Th-230	4688.0	4,687.5	0.5	4448.3	4724.2	27.6	99.7	3560	2.0000	3558.00	141.553	DPM/mL
Th-229	4848.0	4,845.3	2.7	4724.2	5119.5	80.8	99.8	1624	1.0000	1623.00	65.538	DPM/mL
Th-228	5420.0	5,423.3	-3.3	5119.0	5493.0	.0	99.8	6	3.0000	3.13	0.126	DPM/mL

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
8:35:42PM 9/2/2014

Sample

Sample Name: Verification 2
SampleType: Sample
:
Sample Collection Date:

Spectrum #1 Analysis #1
Sample Volume : 0.1000mL
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: Th-229_00018(a)
AnalysisID: 620383

Analyst: 60040

Tracer

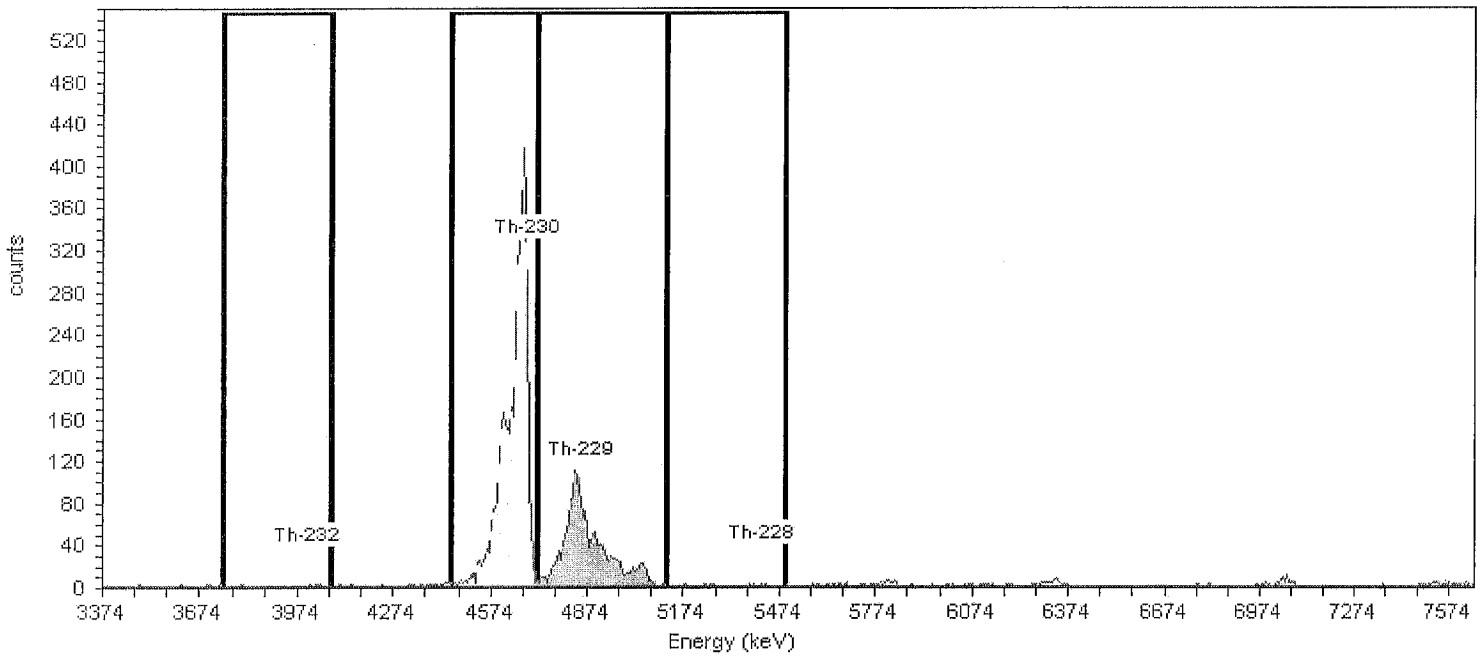
Tracer Name: Th-230_00023
Tracer Activity: 47.94 DPM/mL x (Vol.)0.30 mL = 14.38 DPM
Tracer Ref. Date: 4/11/2011 11:00:10AM

Tracer Nuclide: Th-230
Tracer Recovery: 95.43%

Acquisition

Detector: AV116
Serial Number: 49-034G1
Acquisition Start Date: 9/2/2014 2:33:51AM
Live Time: 960.00 min.
Real Time: 960.02 min.
Background Date: 8/20/2014 11:43:51PM
Background Info: Sample: ICB;AV116; Det: AV116; Spectrum #1; Aug-20-2014 23:43

Calibration Name: IC-9792;AV116-20140430
Calibration Date: 5/1/2014 1:16:57PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 27.04% +/- 0.31% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = Th-230_Tracer
Decay Correction: 9/2/2014 2:32:45AM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Thorium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
Th-232	3999.0	4,010.0	-11.0	3743.0	4072.0	25.7	100.2	6	0.0000	6.00	0.242	DPM/mL
Th-230	4688.0	4,687.5	0.5	4446.0	4717.0	25.1	99.7	3554	1.0000	3552.66	137.251	DPM/mL
Th-229	4848.0	4,845.3	2.7	4717.0	5119.0	80.5	99.8	1602	1.0000	1601.03	64.749	DPM/mL
Th-228	5420.0	5,423.3	-3.3	5119.0	5493.0	.0	99.8	9	3.0000	6.15	0.249	DPM/mL

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
8:36:23PM 9/2/2014

Sample

Sample Name: Verification 3
SampleType: Sample
:
Sample Collection Date:

Spectrum #1 Analysis #1
Sample Volume : 0.1000mL
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: Th-229_00018(a)
AnalysisID: 620410

Analyst: 60040

Tracer

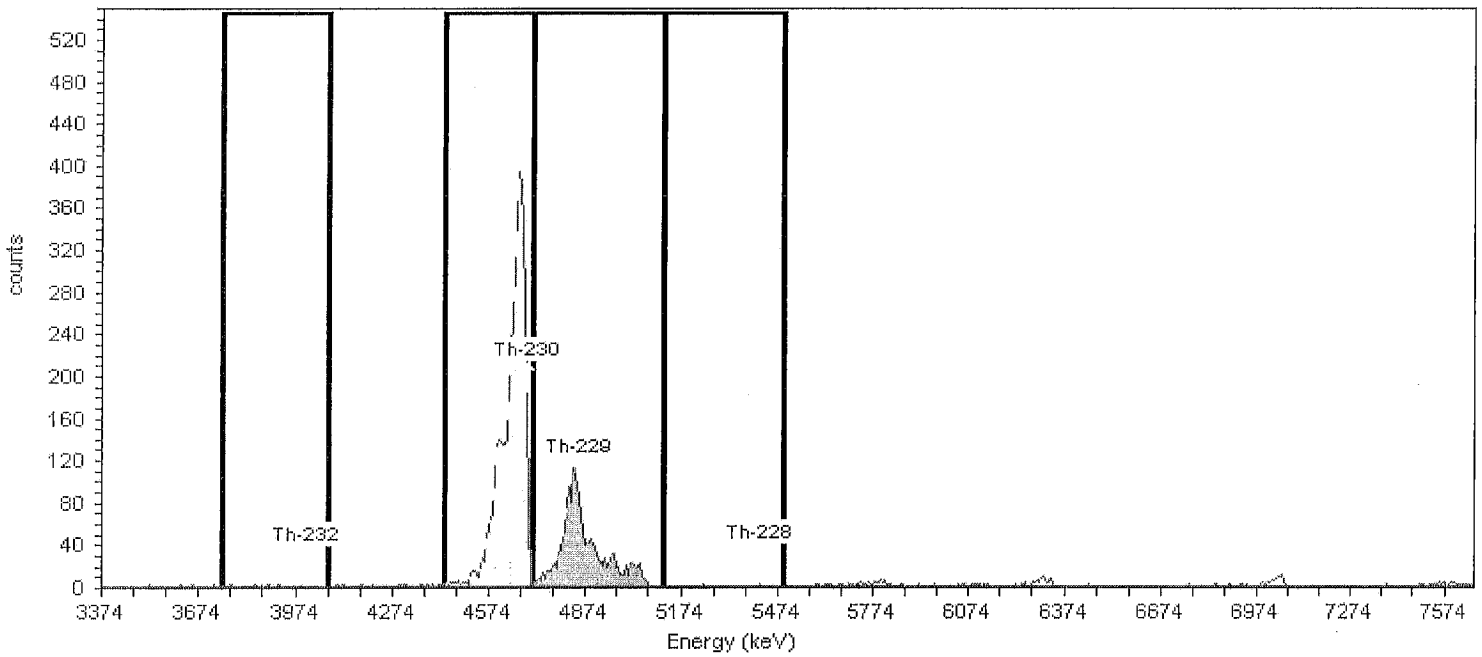
Tracer Name: Th-230_00023
Tracer Activity: 47.94 DPM/mL x (Vol.)0.30 mL = 14.38 DPM
Tracer Ref. Date: 4/11/2011 11:00:10AM

Tracer Nuclide: Th-230
Tracer Recovery: 98.20%

Acquisition

Detector: AV117
Serial Number: 49-037X4
Acquisition Start Date: 9/2/2014 2:33:53AM
Live Time: 960.00 min.
Real Time: 960.02 min.
Background Date: 8/20/2014 11:43:53PM
Background Info: Sample: ICB;AV117; Det: AV117; Spectrum #1; Aug-20-2014 23:43

Calibration Name: IC-9793;AV117-20140430
Calibration Date: 5/1/2014 1:17:04PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 25.86% +/- 0.32% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = Th-230_Tracer
Decay Correction: 9/2/2014 2:32:45AM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Thorium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
Th-232	3999.0	4,010.0	-11.0	3743.0	4072.0	120.6	100.2	5	2.0000	3.00	0.123	DPM/mL
Th-230	4688.0	4,687.5	0.5	4433.4	4709.3	21.9	99.7	3496	1.0000	3495.00	141.226	DPM/mL
Th-229	4848.0	4,845.3	2.7	4709.3	5119.5	70.8	99.8	1510	1.0000	1509.00	62.033	DPM/mL
Th-228	5420.0	5,423.3	-3.3	5119.0	5493.0	44.5	99.8	2	3.0000	-1.00	-0.041	DPM/mL

Reagent

Th-230_00001

Eckert & Ziegler
Analytics

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318
Tel 404·352·8677
Fax 404·352·2837
www.analyticsinc.com

CERTIFICATE OF CALIBRATION
Standard Radionuclide Source

84460-334
5 mL Liquid in Flame Sealed Vial

Customer: Test America/Earth City, MO
P.O. No.: 2414204, Item 1

This standard radionuclide source was prepared gravimetrically from a master solution, calibrated by Eckert & Ziegler Analytics. The master solution was calibrated by liquid scintillation counting. Radionuclide purity and calibration were checked by germanium gamma-ray spectrometry and liquid scintillation counting. The nuclear decay rate and reference date for this source are given below. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 1, February, 1979, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Isotope	Half-Life, Days	Activity (Bq)	Uncertainty*, % Type u_A	u_B	U	Reference Date (12:00 PM EST)
Th-230	2.753E+07	4.016E+03	0.1	0.9	1.8	04/11/2011

***Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

Comments:
Impurities: γ-impurities < 0.1 %, α-impurities < 0.01 %. 5.11451 grams 0.5M HNO3 solution.

Source Prepared by: _____
W. Mao, Radiochemist

QA Approved: _____ Date: 4/11/11
J. D. McCorvey, QA Manager Alternate

ACCREDITED SOURCE CALIBRATION LABORATORY
HEALTH PHYSICS SOCIETY
FOUNDED 1958

Corporate Office
24937 Avenue Tibbitts Valencia, California 91355

Laboratory
1380 Seaboard Industrial Blvd. Atlanta, Georgia, 30318

Reagent

Th-230_00002

Eckert & Ziegler
Analytics

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318
Tel 404·352·8677
Fax 404·352·2837
www.analyticsinc.com

CERTIFICATE OF CALIBRATION
Standard Radionuclide Source

84460-334
5 mL Liquid in Flame Sealed Vial

Customer: Test America/Earth City, MO
P.O. No.: 2414204, Item 1

This standard radionuclide source was prepared gravimetrically from a master solution, calibrated by Eckert & Ziegler Analytics. The master solution was calibrated by liquid scintillation counting. Radionuclide purity and calibration were checked by germanium gamma-ray spectrometry and liquid scintillation counting. The nuclear decay rate and reference date for this source are given below. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 1, February, 1979, and compliance with ANSI N42.22-1995,'"Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Isotope	Half-Life, Days	Activity (Bq)	Uncertainty*, % Type u_A	u_B	U	Reference Date (12:00 PM EST)
Th-230	2.753E+07	4.016E+03	0.1	0.9	1.8	04/11/2011

***Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

Comments:
Impurities: γ-impurities < 0.1 %, α-impurities < 0.01 %. 5.11451 grams 0.5M HNO3 solution.

Source Prepared by: _____
W. Mao, Radiochemist

QA Approved: _____ Date: 4/11/11
J. D. McCorvey, QA Manager Alternate

ACCREDITED SOURCE CALIBRATION LABORATORY · HEALTH PHYSICS SOCIETY · FOUNDED 1956

Corporate Office
24937 Avenue Tibbitts · Valencia, California 91355

Laboratory
1380 Seaboard Industrial Blvd · Atlanta, Georgia 30318

Reagent

Th-230_00003

Eckert & Ziegler
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CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

84460-334
5 mL Liquid in Flame Sealed Vial

Customer: Test America/Earth City, MO
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This standard radionuclide source was prepared gravimetrically from a master solution, calibrated by Eckert & Ziegler Analytics. The master solution was calibrated by liquid scintillation counting. Radionuclide purity and calibration were checked by germanium gamma-ray spectrometry and liquid scintillation counting. The nuclear decay rate and reference date for this source are given below. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 1, February, 1979, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

			Uncertainty*, %			
	Half-Life,	Activity	Type			Reference Date
Isotope	Days	(Bq)	u_A	u_B	U	(12:00 PM EST)
Th-230	2.753E+07	4.016E+03	0.1	0.9	1.8	04/11/2011

*Uncertainty: U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

Comments:
Impurities: γ-impurities < 0.1 %, α-impurities < 0.01 %. 5.11451 grams 0.5M HNO3 solution.

Source Prepared by: _____
W. Mao, Radiochemist

QA Approved: _____ Date: 4/11/11
J. D. McCorvey, QA Manager Alternate

ACCREDITED SOURCE CALIBRATION LABORATORY HEALTH PHYSICS SOCIETY

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Reagent ID: Th-230_00003

		Expiration Date:	04/11/2061
Description:	Th-230 Parent	Laboratory:	TestAmerica St. Louis
No. of Bottles:	1	Prepared By:	Hurst, Sarah
Storage Location:	RAD Separations Reagents - 1	Solvent:	1M HNO3
Reagent Volume:	100.000 mL	Solvent Lot:	0
Creation Date:	06/24/2011		
Container(s):	6340		
Comment:			

Reagent Analyte Information

Analyte	Source ID	Source Exp. Date	Source Conc.	Source Conc. Units	Final Conc.	Final Conc. Units
Gross Alpha	Th-230_00001	04/11/2061	785.21700	Bq/g	2397.01383	dpm/mL
Th-230	Th-230_00001	04/11/2061	785.21700	Bq/g	2397.01383	dpm/mL

Source Reagents

Reagent	Description	Type	Expiration	Vendor	Vendor Lot #	Vendor Cat Lot #	Volume Used	Volume Units
Th-230_00001	Th-230 Ampoule	ASTD	04/11/61	Eckert & Ziegler	84460-334		5.08780	g

St. Louis Radiological Standard Reverification Form

Standard ID Number: Th-230_00003 (6340)
True Value = 921.43 pCi/sample or g
Date Analyzed: 2/11/2014

Radionuclide: Th-230 (High mass)

	Replicates	
#1	909.2	pCi/sample or g
#2	919.3	pCi/sample or g
#3	911.7	pCi/sample or g

Mean = 913.4

1 sigma = 5.260228 1.96 sigma = 10.31005

True Value minus 5% = 875.3585 (True Value - 5%)
True Value plus 5% = 967.5015 (True Value + 5%)

Accuracy:
Mean value within 5% of Certified (True) Value? **Yes** **(Acceptance Criteria)**

Precision:
1.96 sigma Value Within 10% of Mean Value? **Yes** **(Acceptance Criteria)**

Standard Reverification Acceptable? **Yes**

Note: Criteria for reverification of radiological standards is taken from the DOE QSAS and LANL Statements of Work

Reviewed By/Date: Jody Watson 2/18/14

SOP Reference: STL-QA-0002, Current Revision

St. Louis Radiological Standard Reverification Form

Standard ID Number: Th-230_00003 (6340)
True Value = 1100.25 pCi/sample or g
Date Analyzed: 2/11/2014

Radionuclide: Th-230 (Medium mass

	Replicates	
#1	1100	pCi/sample or g
#2	1109	pCi/sample or g
#3	1098	pCi/sample or g

Mean = 1102.333

1 sigma = 5.859465 1.96 sigma = 11.48455

True Value minus 5% = 1045.238 (True Value - 5%)
True Value plus 5% = 1155.263 (True Value + 5%)

Accuracy:
Mean value within 5% of Certified (True) Value? **Yes** **(Acceptance Criteria)**

Precision:
1.96 sigma Value Within 10% of Mean Value? **Yes** **(Acceptance Criteria)**

Standard Reverification Acceptable? **Yes**

Note: Criteria for reverification of radiological standards is taken from the DOE QSAS and LANL Statements of Work

Reviewed By/Date: Jody Watson 2/18/14

SOP Reference: STL-QA-0002, Current Revision

St. Louis Radiological Standard Reverification Form

Standard ID Number: Th-230_00003 (6340)
True Value = 1319.88 pCi/sample or g
Date Analyzed: 2/11/2014

Radionuclide: Th-230 (Low mass)

	Replicates	
#1	1320	pCi/sample or g
#2	1304	pCi/sample or g
#3	1306	pCi/sample or g

Mean = 1310

1 sigma = 8.717798 1.96 sigma = 17.08688

True Value minus 5% = 1253.886 (True Value - 5%)
True Value plus 5% = 1385.874 (True Value + 5%)

Accuracy:
Mean value within 5% of Certified (True) Value? **Yes** **(Acceptance Criteria)**

Precision:
1.96 sigma Value Within 10% of Mean Value? **Yes** **(Acceptance Criteria)**

Standard Reverification Acceptable? **Yes**

Note: Criteria for reverification of radiological standards is taken from the DOE QSAS and LANL Statements of Work

Reviewed By/Date: Jody Watson 2/18/14

SOP Reference: STL-QA-0002, Current Revision

Protean Alpha ICV-ACV recoveries from August 2013			
Protean Detector	**Low** pCi/sample	**Medium** pCi/sample	**High** pCi/sample
0	1338	1095	923.3
1	1320	1121	931.5
2	1308	1081	921.6
3	1294	1118	925.7
4	1310	1091	930.4
5	1332	1093	908.8
6	1346	1099	926.5
7	1311	1104	903.6
Average pCi/sample	1319.875	1100.25	921.425

Protean Alpha ICV-ACV recoveries from February 2014			
Protean Detector	**Low** pCi/sample	**Medium** pCi/sample	**High** pCi/sample
0	1320	1100	909.2
1	1304	1109	919.3
2	1306	1098	911.7
Average pCi/sample	1310.00	1102.33	913.40

Standard ID
Thorium-230
Th-230_00003 #6340
Cert # 84460-334 Ref. date 4/11/11

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Analysis Report for Gross Alpha/Beta

Batch: M132736 **Operator:** 63903

Sample ID	WRKNO / Analyte	Aliquot Cs	Cb	Mass XT	Instr ID CPMs	CPMb	CountTime Eff	Ts Activity	Tb UncTot	Dilution UncCnt	Sigma MDA	DLC
ICVABT-6340;A1	NA	1.000E+000sample		0.0220 g	Protean0		2/10/14 22:54	30.00	1000.00	1.00	2.00	
	Gross Alpha	12315	39	0.00	4.105E+002	3.900E-002	0.1401	**1.320E+003**pCi/sample	1.524E+002	2.379E+001	6.777E-001	2.698E-001
	Gross Beta	4342	529	0.00	1.447E+002	5.290E-001	0.4365	**1.488E+002**pCi/sample	1.555E+001	4.533E+000	5.507E-001	3.188E-001
ICVABT-6340;A2	NA	1.000E+000sample		0.0542 g	Protean0		2/11/14 0:01	30.00	1000.00	1.00	2.00	
	Gross Alpha	8755	39	0.00	2.918E+002	3.900E-002	0.1195	**1.100E+003**pCi/sample	1.276E+002	2.352E+001	7.944E-001	3.162E-001
	Gross Beta	3314	529	0.00	1.105E+002	5.290E-001	0.4211	**1.176E+002**pCi/sample	1.246E+001	4.106E+000	5.709E-001	3.304E-001
ICVABT-6340;A3	NA	1.000E+000sample		0.0718 g	Protean0		2/10/14 23:30	30.00	1000.00	1.00	2.00	
	Gross Alpha	6609	39	0.00	2.203E+002	3.900E-002	0.1091	**9.092E+002**pCi/sample	1.060E+002	2.237E+001	8.698E-001	3.462E-001
	Gross Beta	2866	529	0.00	9.553E+001	5.290E-001	0.4135	**1.035E+002**pCi/sample	1.105E+001	3.888E+000	5.813E-001	3.365E-001

Laboratory Control Sample Information

SampID	WRKNO	Analyte	Activity	StdAdded	Recovery %	LCL	UCL	ZFactor

Sample Duplicate Information

Sample ID	Dup Sample ID	Analyte	Sample Activity	Dup Activity	RPD	RER	DER	ZFactor

Matrix Spike Information

SampID	SampMSID	Analyte	Sample Activity	MS Activity	StdAdded	MSRecovery %	ZFactor

Blanks Information

SampID	WRKNO	Analyte	Activity	UncTotal	ZFactor

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Analysis Report for Gross Alpha/Beta

Batch: M132736 **Operator:** 63903

Sample ID	WRKNO / Analyte	Aliquot Cs	Aliquot Cb	Mass XT	Instr ID CPMs	CountTime CPMb	CountTime Eff	Ts Activity	Tb UncTot	Dilution UncCnt	Sigma MDA	DLC
ICVABT-6340;A1	NA	1.000E+000sample		0.0220 g	Protean1	2/10/14 23:30		30.00	1000.00	1.00	2.00	
	Gross Alpha	12345	58	0.00	4.115E+002	5.800E-002	0.1421	**1.304E+003**pCi/sample	1.505E+002	2.347E+001	7.515E-001	3.242E-001
	Gross Beta	4337	490	0.00	1.446E+002	4.900E-001	0.4378	**1.482E+002**pCi/sample	1.550E+001	4.518E+000	5.320E-001	3.059E-001
ICVABT-6340;A2	NA	1.000E+000sample		0.0542 g	Protean1	2/10/14 22:54		30.00	1000.00	1.00	2.00	
	Gross Alpha	8943	58	0.00	2.981E+002	5.800E-002	0.1211	**1.109E+003**pCi/sample	1.286E+002	2.345E+001	8.822E-001	3.805E-001
	Gross Beta	3334	490	0.00	1.111E+002	4.900E-001	0.4221	**1.181E+002**pCi/sample	1.250E+001	4.108E+000	5.518E-001	3.173E-001
ICVABT-6340;A3	NA	1.000E+000sample		0.0718 g	Protean1	2/11/14 0:01		30.00	1000.00	1.00	2.00	
	Gross Alpha	6776	58	0.00	2.259E+002	5.800E-002	0.1107	**9.193E+002**pCi/sample	1.071E+002	2.234E+001	9.654E-001	4.164E-001
	Gross Beta	2787	490	0.00	9.290E+001	4.900E-001	0.4146	**1.004E+002**pCi/sample	1.074E+001	3.824E+000	5.617E-001	3.230E-001

Laboratory Control Sample Information

SampID	WRKNO	Analyte	Activity	StdAdded	Recovery %	LCL	UCL	ZFactor

Sample Duplicate Information

Sample ID	Dup Sample ID	Analyte	Sample Activity	Dup Activity	RPD	RER	DER	ZFactor

Matrix Spike Information

SampID	SampMSID	Analyte	Sample Activity	MS Activity	StdAdded	MSRecovery %	ZFactor

Blanks Information

SampID	WRKNO	Analyte	Activity	UncTotal	ZFactor

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Analysis Report for Gross Alpha/Beta

Batch: M132736 **Operator:** 63903

Sample ID	WRKNO	Aliquot		Mass		Instr ID	CountTime		Ts	Tb	Dilution	Sigma	
	Analyte	Cs	Cb	XT		CPMs	CPMb	Eff	Activity	UncTot	UncCnt	MDA	DLC
ICVABT-6340;A1	NA	1.000E+000sample		0.0220	g	Protean2	2/11/14 0:01		30.00	1000.00	1.00	2.00	
	Gross Alpha	12227	43	0.00		4.076E+002	4.300E-002	0.1406	**1.306E+003**pCi/sample	1.507E+002	2.362E+001	6.946E-001	2.822E-001
	Gross Beta	4402	583	0.00		1.467E+002	5.830E-001	0.4392	**1.499E+002**pCi/sample	1.566E+001	4.536E+000	5.700E-001	3.326E-001
ICVABT-6340;A2	NA	1.000E+000sample		0.0542	g	Protean2	2/10/14 23:30		30.00	1000.00	1.00	2.00	
	Gross Alpha	8755	43	0.00		2.918E+002	4.300E-002	0.1197	**1.098E+003**pCi/sample	1.273E+002	2.347E+001	8.155E-001	3.314E-001
	Gross Beta	3355	583	0.00		1.118E+002	5.830E-001	0.4218	**1.188E+002**pCi/sample	1.258E+001	4.125E+000	5.936E-001	3.464E-001
ICVABT-6340;A3	NA	1.000E+000sample		0.0718	g	Protean2	2/10/14 22:54		30.00	1000.00	1.00	2.00	
	Gross Alpha	6627	43	0.00		2.209E+002	4.300E-002	0.1091	**9.117E+002**pCi/sample	1.063E+002	2.240E+001	8.947E-001	3.636E-001
	Gross Beta	2857	583	0.00		9.523E+001	5.830E-001	0.4134	**1.031E+002**pCi/sample	1.102E+001	3.883E+000	6.057E-001	3.534E-001

Laboratory Control Sample Information

SampID	WRKNO	Analyte	Activity	StdAdded	Recovery %	LCL	UCL	ZFactor

Sample Duplicate Information

Sample ID	Dup Sample ID	Analyte	Sample Activity	Dup Activity	RPD	RER	DER	ZFactor

Matrix Spike Information

SampID	SampMSID	Analyte	Sample Activity	MS Activity	StdAdded	MSRecovery %	ZFactor

Blanks Information

SampID	WRKNO	Analyte	Activity	UncTotal	ZFactor

Reagent

Th-230_00015

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Analytics

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Tel 404•352•8677
Fax 404•352•2837
www.analyticsinc.com

CERTIFICATE OF CALIBRATION
Standard Radionuclide Source

92523
Th-230 5 mL Liquid in Flame Sealed Vial

Customer: TestAmerica St. Louis
P.O. No.: 2502650, Item 2 Product Code: 8230-5FSA-4kBq

This standard radionuclide source was prepared gravimetrically from a master solution, calibrated by Eckert & Ziegler Analytics. The master solution was calibrated by liquid scintillation counting. Radionuclide calibration and purity were checked by germanium gamma-ray spectrometry, liquid scintillation counting, and/or alpha spectrometry, as applicable. The nuclear decay rate and reference date for this source are given below. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 2, July 2007, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Isotope	Half-Life, Days	Activity (Bq)	Uncertainty* , % Type u_A	u_B	U	Reference Date (12:00 PM EST)
Th-230	2.753E+07	3.979E+03	0.1	0.9	1.8	11/29/2012

***Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

Comments:
Impurities: α-impurities 1.5915 Bq; γ-impurities (other than decay products)<0.1%.
5.07636 g 0.5M HNO3 solution. Carrier free.

Source Prepared by: M. I. Taskaeva, Radiochemist

QA Approved: J.D. McCorvey, Counting Room Manager Date: 27 Nov 12

51464
ID Th-230_00015
Th-230 Ampoule

RAD12-0040
Th-230 Ampoule
hursts
None
Prep/Opened: 11/28/2012
Exp(1): 11/28/2062
Exp(2): 11/28/2062

ACCREDITED SOURCE CALIBRATION LABORATORY HEALTH PHYSICS SOCIETY FOUNDED 1956

Single Isotope Certificate Rev 3, 23 August 2012

Reagent

Th-230_00016

Eckert & Ziegler
Analytics

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318
Tel 404•352•8677
Fax 404•352•2837
www.analyticsinc.com

CERTIFICATE OF CALIBRATION
Standard Radionuclide Source

92523

Th-230 5 mL Liquid in Flame Sealed Vial

Customer: TestAmerica St. Louis
P.O. No.: 2502650, Item 2 Product Code: 8230-5FSA-4kBq

This standard radionuclide source was prepared gravimetrically from a master solution, calibrated by Eckert & Ziegler Analytics. The master solution was calibrated by liquid scintillation counting. Radionuclide calibration and purity were checked by germanium gamma-ray spectrometry, liquid scintillation counting, and/or alpha spectrometry, as applicable. The nuclear decay rate and reference date for this source are given below. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 2, July 2007, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Isotope	Half-Life, Days	Activity (Bq)	Uncertainty*, % Type u_A	u_B	U	Reference Date (12:00 PM EST)
Th-230	2.753E+07	3.979E+03	0.1	0.9	1.8	11/29/2012

*Uncertainty: U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

Comments:
Impurities: α-impurities 1.5915 Bq; γ-impurities (other than decay products)<0.1%.
5.07636 g 0.5M HNO3 solution. Carrier free.

Source Prepared by: M. I. Taskaeva, Radiochemist

QA Approved: J.D. McCorvey, Counting Room Manager Date: 27 Nov 12

51464
ID Th-230_00015
Th-230 Ampoule

RAD12-0040
Th-230 Ampoule
hursts
None
Prep/Opened: 11/28/2012
Exp(1): 11/28/2062
Exp(2): 11/28/2062

ACCREDITED SOURCE CALIBRATION LABORATORY HEALTH PHYSICS SOCIETY FOUNDED 1958

Corporate Office
24937 Avenue Tibbitts Valencia, California 91355

Laboratory
1380 Seaboard Industrial Blvd. Atlanta, Georgia, 30318

TestAmerica St. Louis

Standards Preparation Logbook Record

Nov-28-2012

Logbook: \\Qstlmo01\Stdslog\RAD_STD.std

RAD12-0040, Th-230 Ampoule Th-230_00015 # 51464 Analyst: hursts

Vendor: Analytics Lot No.: 92523
Solvent: None
Date Prep./Opened: 11-28-2012 Date Consumed: 11-28-2012
Date Expires(1): 11-28-2062 (50 Years)
Date Expires(2): 11-28-2062 (50 Years)
Cert: 92523 Activity: 3979Bq Reference Date: 11/29/12 Mass: 5.07636

Component	Initial Conc (dpm/g)	Final Conc (dpm/g)
Th-230	47,030	47,030

RAD12-0041, Th-230 Calibration Standard Th-230_00016 # 51465 Analyst: hursts

Solvent: 0.5M HNO3 Volume (ml): 100.00
Date Prep./Opened: 11-28-2012
Date Expires(1): 11-29-2062 (50 Years)
Date Expires(2): 11-29-2062 (50 Years)

Parent Std No.: RAD12-0040, Th-230 Ampoule Aliquot Amount (g): 5.0489
Parent Date Expires(1): 11-28-2062 Parent Date Expires(2): 11-28-2062

Component	Initial Conc (dpm/g)	Final Conc (dpm/mL)
Th-230	47,030	2,374.5

Reviewed By: SH

Page 1 of 1

St. Louis Radiological Standard Reverification Form

Standard ID Number: Rad12-0041
True Value = 1069.59 pCi/mL
Date Analyzed: 11/30/2012

Radionuclide: Th-230 Gross Alpha

	Replicates	
#1	1071	pCi/mL
#2	1027	pCi/mL
#3	1085	pCi/mL

Mean = 1061

1 sigma = 30.26549 1.96 sigma = 59.32036

True Value minus 5% = 1016.111 (True Value - 5%)
True Value plus 5% = 1123.07 (True Value + 5%)

Accuracy:
Mean value within 5% of Certified (True) Value? Yes **(Acceptance Criteria)**

Precision:
1.96 sigma Value Within 10% of Mean Value? Yes **(Acceptance Criteria)**

Standard Reverification Acceptable? Yes

Note: Criteria for reverification of radiological standards is taken from the DOE QSAS and LANL Statements of Work

Reviewed By/Date: JL 11/30/12

SOP Reference: STL-QA-0002, Current Revision

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Analysis Report for Gross Alpha/Beta

Batch: M122628 **Operator:** 63903

Sample ID	WRKNO	*Aliquot*		*Mass*	*Instr ID*	*CountTime*		*Ts*	*Tb*	*Dilution*	*Sigma*	
	Analyte	Cs	Cb	XT	CPMs	CPMb	Eff	Activity	UncTot	UncCnt	MDA	DLC
verification 1a	NA	*1.000E+000mL*		*0.0546 g*	*Purple16*	*11/30/12 13:03*		*8.00*	*1000.00*	*1.00*	*1.00*	
	Gross Alpha	2528	175	0.00	3.160E+002	1.750E-001	0.1328	**1.071E+006**pCi/L	6.469E+004	2.132E+004	2.807E+003	1.167E+003
	Gross Beta	792	485	0.00	9.900E+001	4.850E-001	0.4280	**1.037E+005**pCi/L	6.370E+003	3.702E+003	1.212E+003	6.028E+002
verification 2a	NA	*1.000E+000mL*		*0.0536 g*	*Purple17*	*11/30/12 13:03*		*8.00*	*1000.00*	*1.00*	*1.00*	
	Gross Alpha	2364	87	0.00	2.955E+002	8.700E-002	0.1295	**1.027E+006**pCi/L	6.225E+004	2.113E+004	2.376E+003	8.436E+002
	Gross Beta	764	362	0.00	9.550E+001	3.620E-001	0.4353	**9.846E+004**pCi/L	6.084E+003	3.576E+003	1.078E+003	5.121E+002
verification 3a	NA	*1.000E+000mL*		*0.0531 g*	*Purple18*	*11/30/12 13:04*		*8.00*	*1000.00*	*1.00*	*1.00*	
	Gross Alpha	2521	62	0.00	3.151E+002	6.200E-002	0.1308	**1.085E+006**pCi/L	6.551E+004	2.161E+004	2.168E+003	7.052E+002
	Gross Beta	788	395	0.00	9.850E+001	3.950E-001	0.4295	**1.029E+005**pCi/L	6.325E+003	3.680E+003	1.125E+003	5.421E+002

Laboratory Control Sample Information

SampID	WRKNO	Analyte	Activity	StdAdded	Recovery %	LCL	UCL	ZFactor

Sample Duplicate Information

Sample ID	Dup Sample ID	Analyte	Sample Activity	Dup Activity	RPD	RER	DER	ZFactor

Matrix Spike Information

SampID	SampMSID	Analyte	Sample Activity	MS Activity	StdAdded	MSRecovery %	ZFactor

Blanks Information

SampID	WRKNO	Analyte	Activity	UncTotal	ZFactor

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Prep Report for Gross Alpha/Beta

Batch: M122628 **Prep Analyst:** 250

SampID	WRKNO	Aliquot	Gross	Tare	Mass	Dilution
verification 1a	NA	6.500E-001 mL	8.6982 g	8.6436 g	0.0546 g	1.00
		Orange 5	protean 14		16	
verification 2a	NA	6.500E-001 mL	8.6698 g	8.6162 g	0.0536 g	1.00
		7	15		17	
verification 3a	NA	6.500E-001 mL	8.6466 g	8.5935 g	0.0531 g	1.00
		8			18	

Spike Information

Sample ID	Standard ID	Analyte	Std Conc	Aliquot	Ref Date	StdAdded
	Rad12-0041	Th-230	2374.5 dpm/mL	1.00 mL	11-29-12	

MS — Spiked By

LM per MS — Spike Verified By

11-28-12 — Spike Date

Standard Operating Procedures

SOPNumber	Title	Revision
☐		

Reviewed By — 11/30/12 Review Date

MS — Analyst/Relenquished By — 11-28-12 Release Date — Received By — 11/28/12 Receipt Date

1123433897/MS/11-28-12

Balance ID / Initials / Date

Reagent

Th-230_00019

TestAmerica St. Louis

Standards Preparation Logbook Record

Aug-13-2013

Logbook: \\Qstlmo01\Stdslog\RAD_STD.std

RAD13-0028, Th-230 Ampoule — Analyst: marrss

Vendor: Analytics Lot No.: 92776
Solvent: None
Date Prep./Opened: 08-13-2013
Date Expires(1): 08-08-2063 (50 Years)
Date Expires(2): 08-08-2063 (50 Years)
Activity: 3.728 E+03 Bq, Ref date: 08/08/2013, Solution mass: 5.09261g, Source ID: 92776

Component	Initial Conc (dpm/g)	Final Conc (dpm/g)
Th-230 Th-230-00019 #181198	43,922	43,922

RAD13-0029, Th-230 Parent — Analyst: marrss

Solvent: ~~None~~ 1M HNO3 SUB 8/13/13 Volume (ml): 100.00
Date Prep./Opened: 08-13-2013
Date Expires(1): 08-08-2063 (50 Years)
Date Expires(2): 08-08-2063 (50 Years)

Parent Std No.: RAD13-0028, Th-230 Ampoule Aliquot Amount (g): 5.0731
Parent Date Expires(1): 08-08-2063 Parent Date Expires(2): 08-08-2063

Component	Initial Conc (dpm/g)	Final Conc (dpm/mL)
Th-230	43,922	2,228.2

Reviewed By: SUB

Th-230 Parent

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Reagent ID: Th-230_00019

		Expiration Date:	08/08/2063
Description:	Th-230 Parent	Laboratory:	TestAmerica St. Louis
No. of Bottles:	1	Prepared By:	Bernsen, Sarah C
Storage Location:	RAD Actinide STDs	Solvent:	1M HNO3
Reagent Volume:	100.000 mL	Solvent Lot:	n/a
Creation Date:	08/13/2013		
Container(s):	181198		
Comment:			

Reagent Analyte Information

Analyte	Source ID	Source Expiration Date	Source Conc.	Source Conc. Units	Final Conc.	Final Conc. Units
Th-230	Th-230_00018	08/08/2063	43922.46	dpm/g	2228.23072	dpm/mL

Source Reagents

Reagent	Description	Type	Expiration	Vendor	Vendor Lot #	Vendor Cat Lot #	Volume Used	Volume Units
Th-230_00018	Th-230 Ampoule	ASTD	08/08/63	Eckert & Ziegler	92776		5.07310	mL

Eckert & Ziegler
Analytics

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318
Tel 404•352•8677
Fax 404•352•2837
www.analyticsinc.com

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

92776

Th-230 5 mL Liquid in Flame Sealed Vial

Customer: TestAmerica
P.O. No.: 2532686, Item 1 Product Code: 8230-5FSA-4kBq

This standard radionuclide source was prepared gravimetrically from a master solution, calibrated by Eckert & Ziegler Analytics. The master solution was calibrated by liquid scintillation counting. Radionuclide calibration and purity were checked by germanium gamma-ray spectrometry, liquid scintillation counting, and/or alpha spectrometry, as applicable. The nuclear decay rate and reference date for this source are given below. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 2, July 2007, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Isotope	Half-Life, Days	Activity (Bq)	Uncertainty* , % Type u_A	u_B	U	Reference Date (12:00 PM EST)
Th-230	2.753E+07	3.728E+03	0.1	0.9	1.8	08/08/2013

***Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

Comments:
Impurities: α-impurities 0.04%; γ-impurities (other than decay products)<0.1%.
5.09261 g 0.5M HNO3 solution. Carrier free.

Source Prepared by: R. Ormsby
R. Ormsby, Radiochemist

QA Approved:
J.D. McCorvey, Counting Room Manager

Date: 6AUG13

RAD13-0029
Th-230 Parent
marrss
None
Prep/Opened: 8/13/2013
Exp(1): 8/8/2063
Exp(2): 8/8/2063

181198
ID: Th-230_00019
Exp: 08/08/63 Prpd: SH Cal. 08/13/13
Th-230 Parent

ACCREDITED SOURCE CALIBRATION LABORATORY HEALTH PHYSICS SOCIETY FOUNDED 1956

Single Isotope Certificate Rev 3, 23 August 2012

Corporate Office
24937 Avenue Tibbitts Valencia, California 91355

Laboratory
1380 Seaboard Industrial Blvd. Atlanta, Georgia, 30318

Reagent

Th-230_00023

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Th - 230_ 00023

Reagent ID: Th-230_00023

		Expiration Date:	01/28/2015
Description:	Th-230 Spike	Laboratory:	TestAmerica St. Louis
No. of Bottles:	1	Prepared By:	Bernsen, Sarah C
Storage Location:	RAD Actinide STDs	Solvent:	1M HNO3
Reagent Volume:	200.000 mL	Solvent Lot:	0
Creation Date:	02/04/2013		
Container(s):	304693		
Comment:	Rad13-0003 Re-certified from Th-230_00017		

Reagent Analyte Information

Analyte	Source ID	Source Exp. Date	Source Conc.	Source Conc. Units	Final Conc.	Final Conc. Units
Th-230	Th-230_00006	04/11/2061	2397.01400	dpm/mL	47.94028	dpm/mL

Source Reagents

Reagent	Description	Type	Expiration	Vendor	Vendor Lot #	Vendor Cat Lot #	Volume Used	Volume Units
Th-230_00006	Th-230 Parent		04/11/61				4.00000	mL

St. Louis Radiological Standard Reverification Form

Standard ID Number: Th-230_00017
True Value = 47.94 DPM/L or g
Date Analyzed: 1/28/2014

Radionuclide: Th-230

	Replicates	
#1	49.462	DPM/L or g
#2	48.579	DPM/L or g
#3	49.802	DPM/L or g

Mean = 49.281

1 sigma = 0.631271

1.96 sigma = 1.237291

True Value minus 5% = 45.543 (True Value - 5%)
True Value plus 5% = 50.337 (True Value + 5%)

Accuracy:
Mean value within 5% of Certified (True) Value? **Yes** **(Acceptance Criteria)**

Precision:
1.96 sigma Value Within 10% of Mean Value? **Yes** **(Acceptance Criteria)**

Standard Reverification Acceptable? **Yes**

Note: Criteria for reverification of radiological standards is taken from the DOE QSAS and LANL Statements of Work

Reviewed By/Date: RTM 1/29/2014

SOP Reference: STL-QA-0002, Current Revision

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Th-230 Verification

Aliquot Only

Batch No. : —

Balance ID : —

Note: If a section below is not used, marked the N/A box and initial & date next to the N/A.
i.e. Mark the N/A box if a tracer is not added to the sample(s) then initial and date next to the N/A

No.	Sample Number	Aliquot (g / mL)	Crucible ID	Dilution
1	verification-1	0.3	112	960 min.
2	2	1	113	
3	3		114	
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				

Tracer ☐ N/A

Initials / Date

Isotope : Th-229

Std Sol'n No. : Th-229-00012

Vol (mL) : 0.1

Ref Activity (dpm/mL) : 67.929

Act Ref Date : 07-14-2010

Samples Spiked and Traced By: SLB 1/28/14
Initials / Date

Verification Signature & Date: NB 1/28/14
Initials / Date

LCS Standard ☐ N/A

Initials / Date

Isotope : Th-230

Std Sol'n ID. : Th-230-00017

Vol (mL) : 0.3

Ref Activity (dpm/mL) : 47.94

Act Ref Date : 04-11-2011

SOP's applied in preparing these samples. Mark box to left for all that apply:

☐	ST-RC-0003 Rev.	☐	ST-RC-0040 Rev.	☐	ST-RC-0110 Rev.		
☐	ST-RC-0004 Rev.	☐	ST-RC-0041 Rev.	☐	ST-RC-0120 Rev.		
☐	ST-RC-0014 Rev.	☐	ST-RC-0050 Rev.	☐	ST-RC-0232 Rev.		
☐	ST-RC-0020 Rev.	☐	ST-RC-0090 Rev.	☐	ST-RC-0238 Rev.		
☐	ST-RC-0021 Rev.	☑	ST-RC-0100 Rev.	☐	ST-RC-0240 Rev.		
				☐	ST-RC-0241 Rev.		
				☑	ST-RC-0242 Rev.		
				☐	ST-RC-5016 Rev.		
				☐			
				☐			

Isotope(s)

αβ ☐	Iso Pu ☐	Tc-99 ☐	Iso Cm ☐
Iso Am ☐	Ra ☐	Iso Th ☑	Pu-241 ☐
KPA ☐	Sr ☐	Iso U ☐	Th-229 ☐
Np ☐	TAR ☐	C-14 ☐	Cl-36 ☐

Count Time	Matrix
Long Count ☐	Soil ☐
Short Count ☐	H_2O ☐

Prepared By : SLB

Date : 1/28/14

Reviewed by: _____

Date: _____

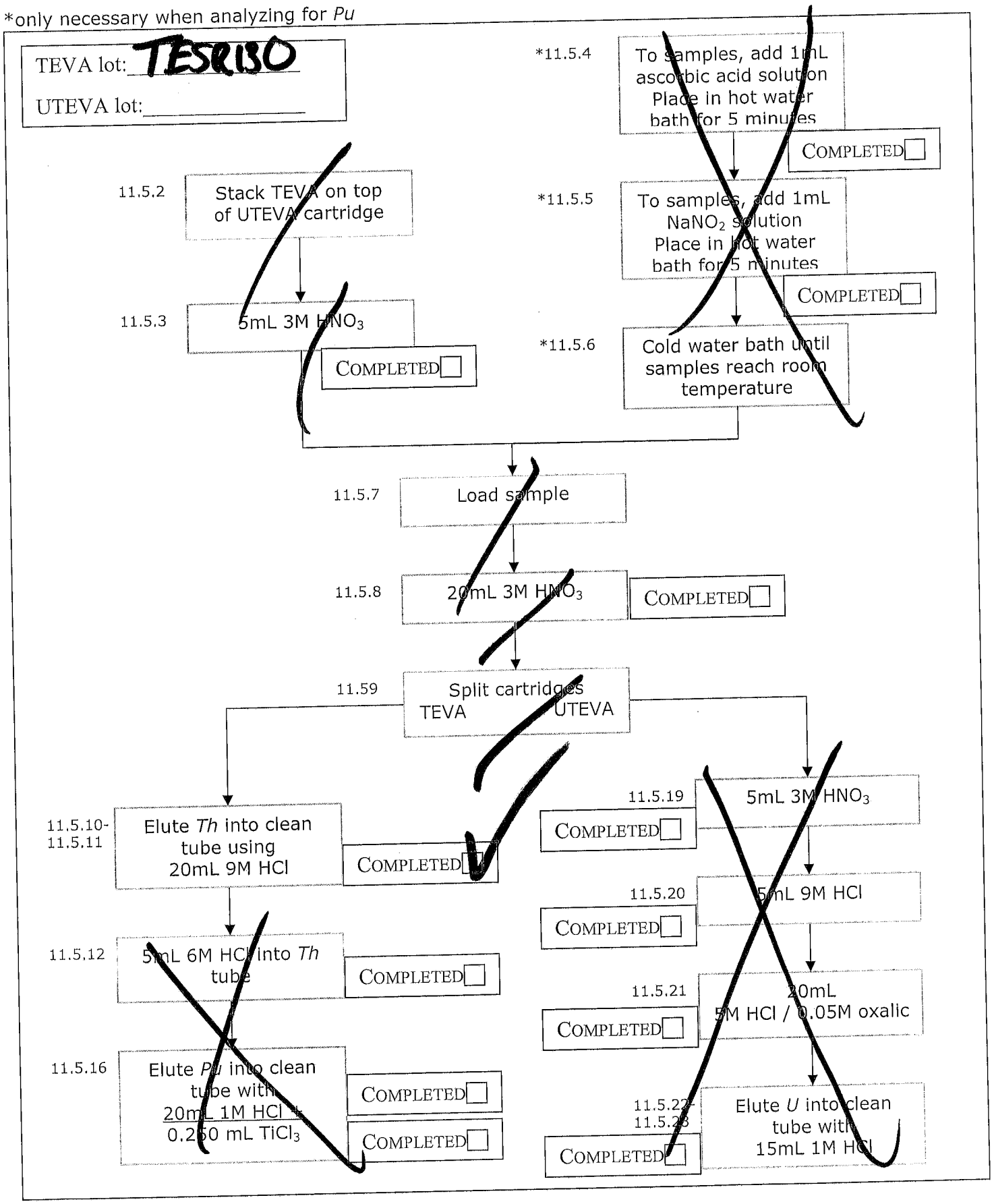
\\Slsvr01\RAD\MasterForms\RAD-0045 Rev(3)

Sequential Thorium, Plutonium and Uranium via TEVA/UTEVA ST-RC-0242

Batch:_____

All rinses should flow at 1 mL/minute (only 3M HNO_3 may be done at 3 mL/minute)

*only necessary when analyzing for *Pu*



Form: RAD-0063, Revised 09/18/13

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
6:19:33PM 1/29/2014

Sample

Sample Name: Verification 1
SampleType: Sample
:
Sample Collection Date:

Spectrum #1 Analysis #1
Sample Volume : 0.3000mL
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: Th-230_00017_Re-Verify
AnalysisID: 597024

Analyst: 60040

Tracer

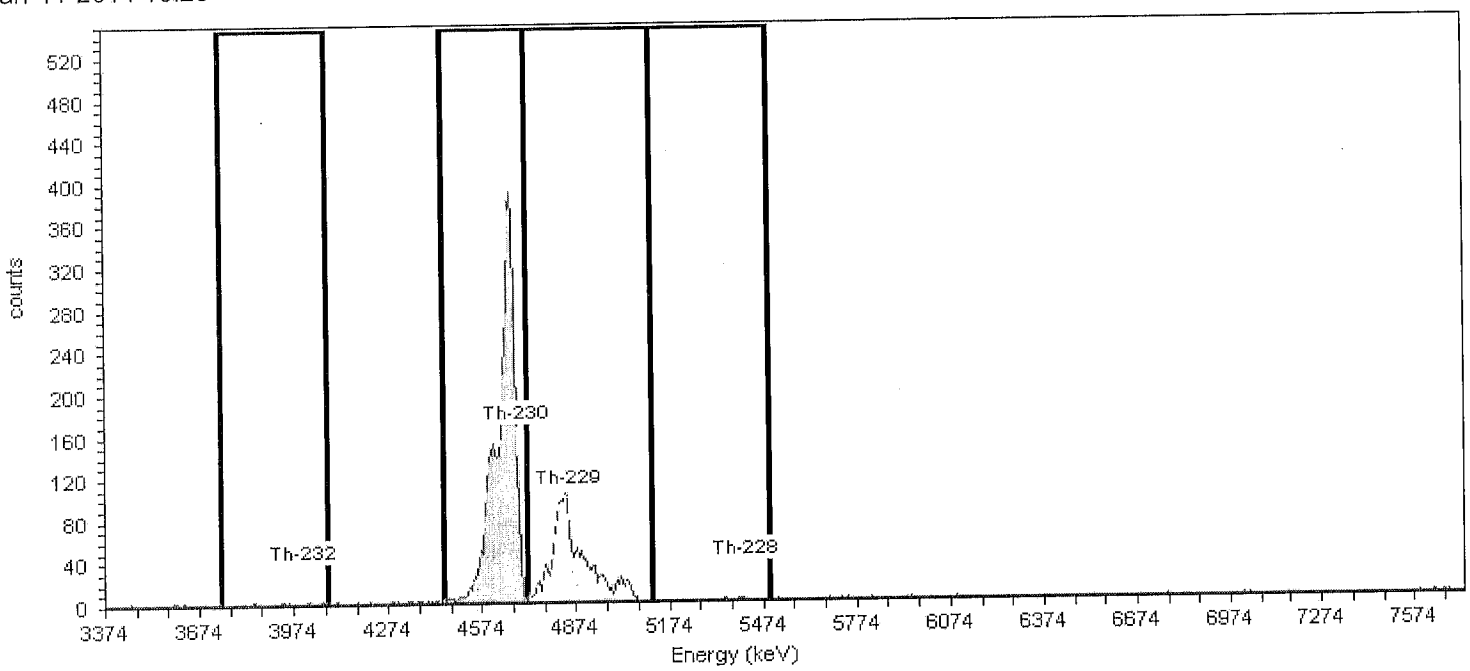
Tracer Name: Th-229_00012
Tracer Activity: 67.93 DPM/mL x (Vol.)0.10 mL = 6.79 DPM
Tracer Ref. Date: 7/14/2010 11:00:17AM

Tracer Nuclide: Th-229
Tracer Recovery: 88.83%

Acquisition

Detector: AV112
Serial Number: 49-037G7
Acquisition Start Date: 1/28/2014 7:31:48PM
Live Time: 960.00 min.
Real Time: 960.01 min.
Background Date: 1/11/2014 4:25:27PM
Background Info: Sample: ICB;AV112; Det: AV112; Spectrum #1; Jan-11-2014 16:25

Calibration Name: IC-8876;AV112-20130514
Calibration Date: 5/14/2013 8:47:13PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 26.87% +/- 0.31% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = Th2007_ROI
Decay Correction: 1/28/2014 7:30:15PM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Thorium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
Th-232	3999.0	4,010.0	-11.0	3743.0	4072.0	.0	100.2	6	0.0000	6.46	0.094	DPM/mL
Th-230	4688.0	4,687.5	0.5	4446.0	4717.0	20.4	99.7	3391	2.0000	3389.32	49.462	DPM/mL
Th-229	4848.0	4,845.3	2.7	4717.0	5119.0	74.0	99.6	1552	2.0000	1550.25	20.113	DPM/mL
Th-228	5420.0	5,423.3	-3.3	5119.0	5493.0	44.4	99.8	4	2.0000	2.00	0.029	DPM/mL

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
6:19:42PM 1/29/2014

Sample

Sample Name: Verification 2
SampleType: Sample
:
Sample Collection Date:

Spectrum #1 Analysis #1
Sample Volume : 0.3000mL
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: Th-230_00017_Re-Verify
AnalysisID: 597025

Analyst: 60040

Tracer

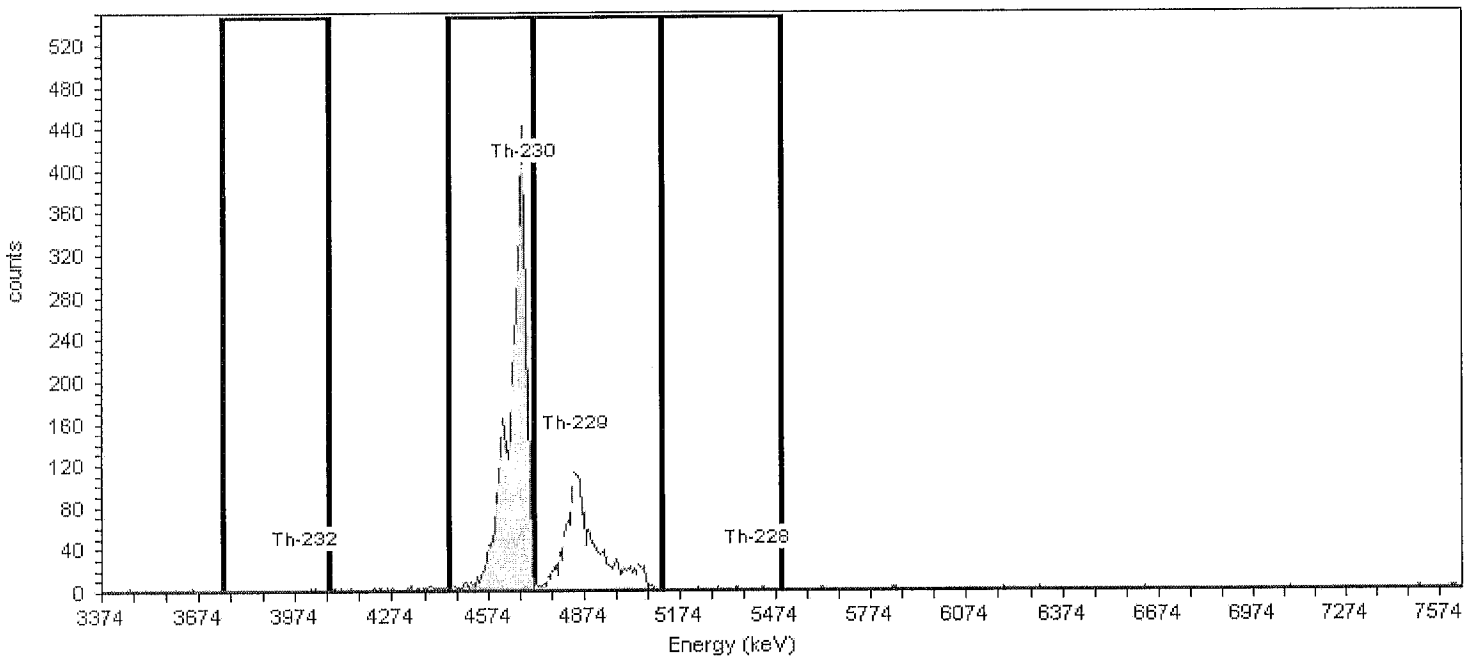
Tracer Name: Th-229_00012
Tracer Activity: 67.93 DPM/mL x (Vol.)0.10 mL = 6.79 DPM
Tracer Ref. Date: 7/14/2010 11:00:17AM

Tracer Nuclide: Th-229
Tracer Recovery: 92.22%

Acquisition

Detector: AV113
Serial Number: 49-037X5
Acquisition Start Date: 1/28/2014 7:31:50PM
Live Time: 960.00 min.
Real Time: 960.01 min.
Background Date: 1/11/2014 4:25:29PM
Background Info: Sample: ICB;AV113; Det: AV113; Spectrum #1; Jan-11-2014 16:25

Calibration Name: IC-8877;AV113-20130514
Calibration Date: 5/14/2013 8:47:28PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 26.66% +/- 0.32% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = Th2007_ROI
Decay Correction: 1/28/2014 7:30:15PM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Thorium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
Th-232	3999.0	4,010.0	-11.0	3743.0	4072.0	10.5	100.2	2	2.0000	0.00	0.000	DPM/mL
Th-230	4688.0	4,687.5	0.5	4446.0	4717.0	30.5	99.7	3429	0.0000	3429.40	48.579	DPM/mL
Th-229	4848.0	4,845.3	2.7	4717.0	5119.0	72.2	99.6	1598	1.0000	1597.09	20.881	DPM/mL
Th-228	5420.0	5,423.3	-3.3	5119.0	5493.0	163.8	99.8	4	3.0000	1.00	0.014	DPM/mL

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
6:19:51PM 1/29/2014

Sample

Sample Name: Verification 3
SampleType: Sample
:
Sample Collection Date:

Spectrum #1 Analysis #1
Sample Volume : 0.3000mL
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: Th-230_00017_Re-Verify
AnalysisID: 597026

Analyst: 60040

Tracer

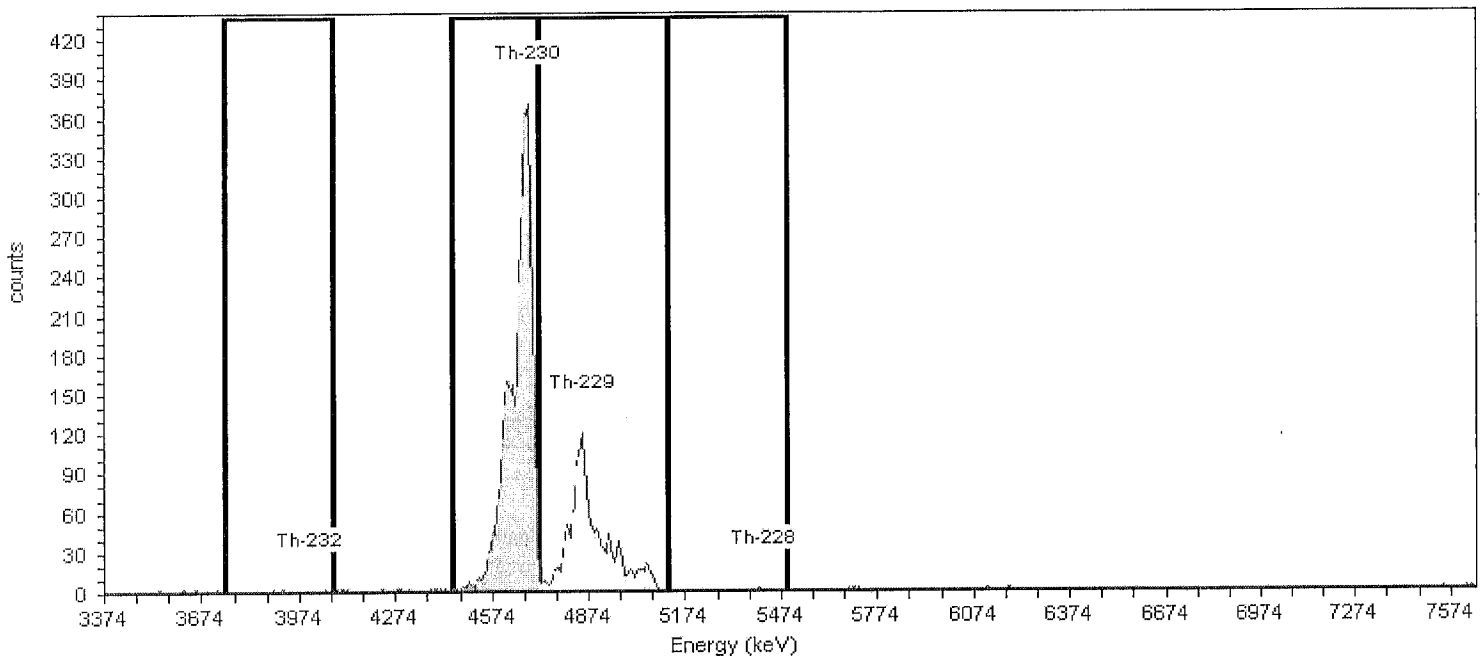
Tracer Name: Th-229_00012
Tracer Activity: 67.93 DPM/mL x (Vol.)0.10 mL = 6.79 DPM
Tracer Ref. Date: 7/14/2010 11:00:17AM

Tracer Nuclide: Th-229
Tracer Recovery: 92.05%

Acquisition

Detector: AV114
Serial Number: 49-037E7
Acquisition Start Date: 1/28/2014 7:31:52PM
Live Time: 960.00 min.
Real Time: 960.01 min.
Background Date: 1/11/2014 4:25:31PM
Background Info: Sample: ICB;AV114; Det: AV114; Spectrum #1; Jan-11-2014 16:25

Calibration Name: IC-9520;AV114-20130514
Calibration Date: 5/14/2013 8:47:43PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 26.73% +/- 0.37% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = Th2007_ROI
Decay Correction: 1/28/2014 7:30:15PM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Thorium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
Th-232	3999.0	4,010.0	-11.0	3743.0	4072.0	10.7	100.2	3	0.4250	2.57	0.036	DPM/mL
Th-230	4688.0	4,687.5	0.5	4446.0	4717.0	33.9	99.7	3518	0.0000	3517.66	49.802	DPM/mL
Th-229	4848.0	4,845.3	2.7	4717.0	5119.0	72.2	99.6	1598	0.0000	1597.97	20.842	DPM/mL
Th-228	5420.0	5,423.3	-3.3	5119.0	5493.0	44.5	99.8	1	1.0000	0.00	0.000	DPM/mL

Reagent

Th-230_00024

455587
ID: Th-230_00024
Exp: 09/25/15 Prpd: SCB Crt: 09/22/14
Th-230 Gross Alpha Spike

St. Louis Radiological Standard Reverification Form

Standard ID Number: Th-230_00024
True Value = 22.282 DPM/L or g
Date Analyzed: 9/25/2014

Radionuclide: Th-230

	Replicates	
#1	22.16	DPM/L or g
#2	22.8	DPM/L or g
#3	24.12	DPM/L or g

Mean = 23.02667

1 sigma = 0.999467 1.96 sigma = 1.958954

True Value minus 5% = 21.1679 (True Value - 5%)
True Value plus 5% = 23.3961 (True Value + 5%)

Accuracy:
Mean value within 5% of Certified (True) Value? Yes **(Acceptance Criteria)**

Precision:
1.96 sigma Value Within 10% of Mean Value? Yes **(Acceptance Criteria)**

Standard Reverification Acceptable? Yes

Note: Criteria for reverification of radiological standards is taken from the DOE QSAS and LANL Statements of Work

Reviewed By/Date: RTM 9/30/2014

SOP Reference: STL-QA-0002, Current Revision

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:28:07AM 9/30/2014

Sample

Sample Name: Verification1 Type: Sample
Spectrum #2 Analysis #1
:
Sample Collection Date:
Comment:

Sample Volume : 0.30 Sample Units: mL
First Stage Dilution: N/A
Aliquot: N/A Aliquot Fraction: N/A
Dilution 2: N/A
Lab Preparation:

Batch

Batch Name: Th-230_00024
:
Description:

Client Name: Undefined
Client Contact:
Analyst: 60040

Tracer

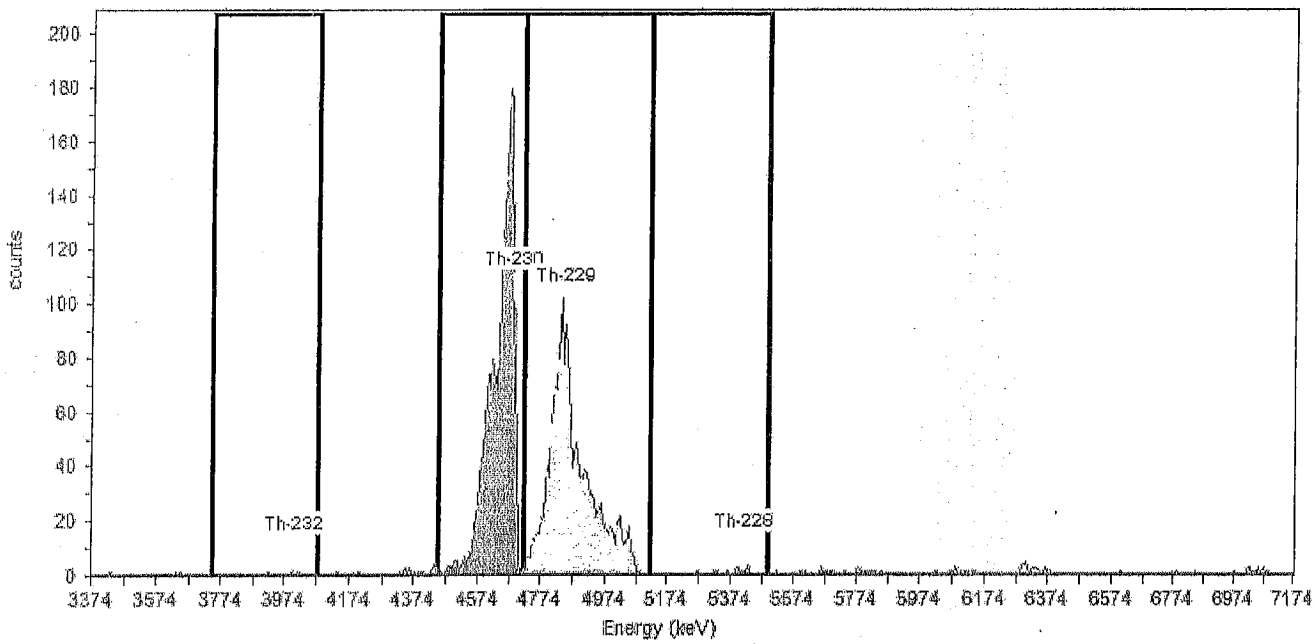
Tracer Name: Th-229_00018
Tracer Activity: 67.23 DPM / mL x (Vol.) 0.10 mL = 6.72 DPM
Tracer Ref. Date: 8/6/2014 4:36:53PM

Tracer Nuclide: Th-229
Tracer Recovery: 88.98%

Acquisition

Detector: AV247 SN: 51-027F3
Acquisition Start Date: 9/25/2014 8:58:54PM
Live Time: 960.00 min.
Real Time: 960.00 min.
Background Date: 9/14/2014 7:35:50PM
Bkgd Info: Sample: ICB;AV247; Det: AV247; Spectrum #1; 9/14/2014 7:35:50 PM

Energy Calibration: IC-8875;AV247-20140701
Efficiency Calibration:IC-8875;AV247-20140701
Calibration Date: 7/1/2014 5:29:01PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 26.06% +/- 0.36% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = Th2007_ROI
Decay Correction:9/23/2014 7:22:45PM
MDA Constants: Kα = 1.64 , Kβ = 1.64

Nuclide Library: Thorium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
Th-232	3999.0	4,010.0	-11.0	3743.0	4072.0	117.3	100.2	3	3.0000	0.00	0.000E+000	DPM/mL
Th-230	4688.0	4,687.5	0.5	4446.0	4717.0	23.3	99.7	1606	0.0000	1605.92	2.412E+001	DPM/mL
Th-229	4848.0	4,845.3	2.7	4717.0	5119.0	81.6	99.6	1492	1.0000	1491.00	1.994E+001	DPM/mL
Th-228	5420.0	5,423.3	-3.3	5119.0	5493.0	52.8	99.8	12	6.9134	5.09	7.652E-002	DPM/mL

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:28:13AM 9/30/2014

Sample

Sample Name: Verification2 Type: Sample
Spectrum #2 Analysis #1
:
Sample Collection Date:
Comment:

Sample Volume : 0.30 Sample Units: mL
First Stage Dilution: N/A
Aliquot: N/A Aliquot Fraction: N/A
Dilution 2: N/A
Lab Preparation:

Batch

Batch Name: Th-230_00024
:
Description:

Client Name: Undefined
Client Contact:
Analyst: 60040

Tracer

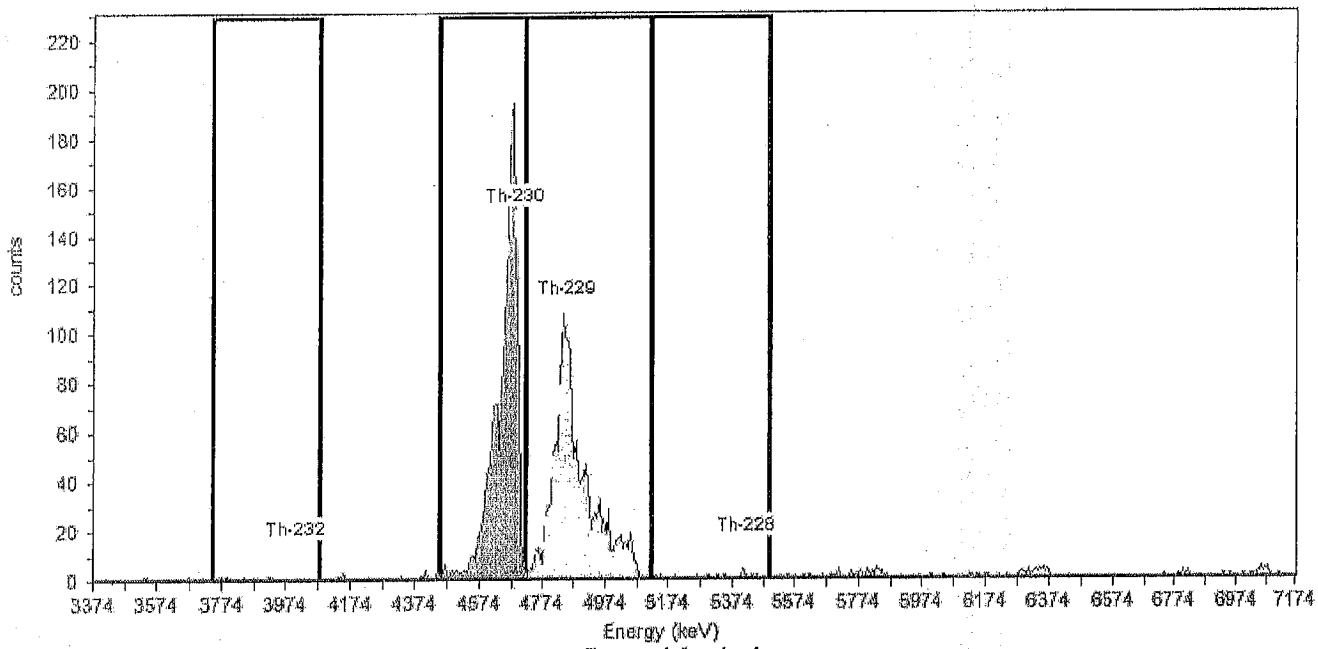
Tracer Name: Th-229_00018
Tracer Activity: 67.23 DPM / mL x (Vol.) 0.10 mL = 6.72 DPM
Tracer Ref. Date: 8/6/2014 4:36:53PM

Tracer Nuclide: Th-229
Tracer Recovery: 91.61%

Acquisition

Detector: AV248 SN: 51-005P4
Acquisition Start Date: 9/25/2014 8:58:54PM
Live Time: 960.00 min.
Real Time: 960.01 min.
Background Date: 9/14/2014 7:35:50PM
Bkgd Info: Sample: ICB;AV248; Det: AV248; Spectrum #1; 9/14/2014 7:35:50 PM

Energy Calibration: IC-8876;AV248-20140701
Efficiency Calibration:IC-8876;AV248-20140701
Calibration Date: 7/1/2014 5:29:05PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 25.83% +/- 0.30% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = Th2007_ROI
Decay Correction:9/23/2014 7:22:45PM
MDA Constants: Kα = 1.64 , Kβ = 1.64

Nuclide Library: Thorium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
Th-232	3999.0	4,010.0	-11.0	3743.0	4072.0	54.9	100.2	4	0.0000	4.43	6.480E-002	DPM/mL
Th-230	4688.0	4,687.5	0.5	4446.0	4717.0	27.0	99.7	1551	2.0000	1548.94	2.280E+001	DPM/mL
Th-229	4848.0	4,845.3	2.7	4717.0	5119.0	79.2	99.6	1522	0.0639	1521.87	2.053E+001	DPM/mL
Th-228	5420.0	5,423.3	-3.3	5119.0	5493.0	57.3	99.8	13	18.0639	-5.06	-7.463E-002	DPM/mL

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:28:19AM 9/30/2014

Sample

Sample Name: Verification3 Type: Sample
Spectrum #2 Analysis #1
:
Sample Collection Date:
Comment:

Sample Volume : 0.30 Sample Units: mL
First Stage Dilution: N/A
Aliquot: N/A Aliquot Fraction: N/A
Dilution 2: N/A
Lab Preparation:

Batch

Batch Name: Th-230_00024
:
Description:

Client Name: Undefined
Client Contact:
Analyst: 60040

Tracer

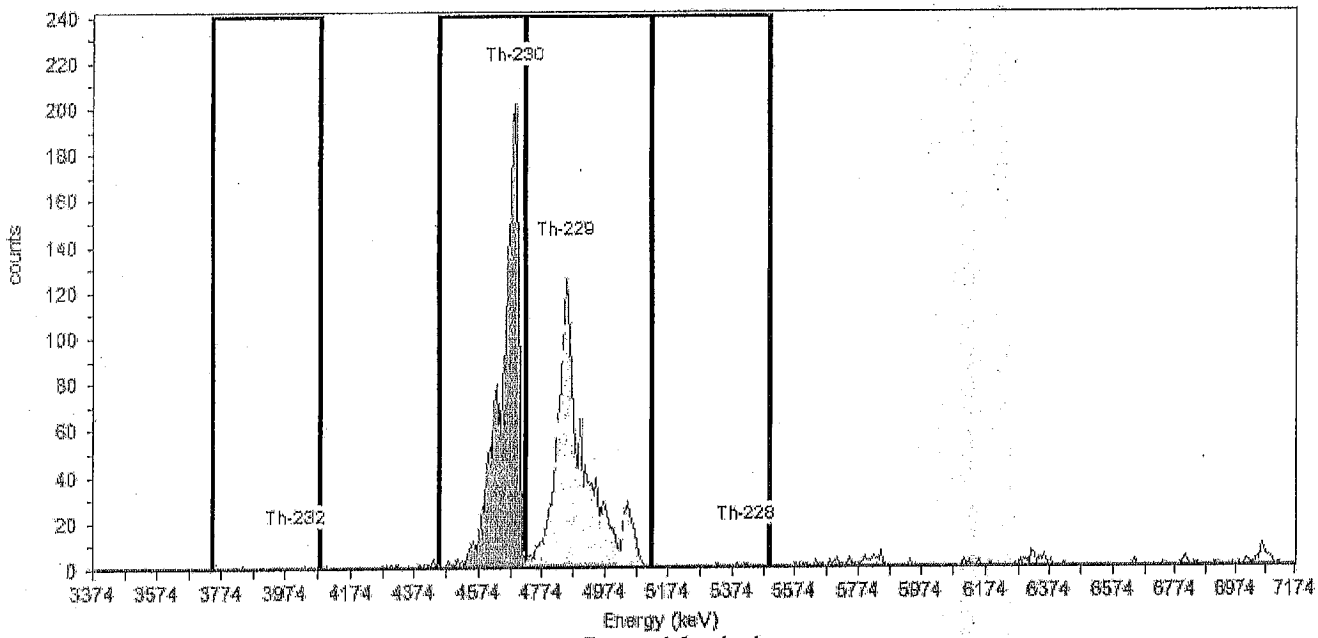
Tracer Name: Th-229_00018
Tracer Activity: 67.23 DPM / mL x (Vol.) 0.10 mL = 6.72 DPM
Tracer Ref. Date: 8/6/2014 4:36:53PM

Tracer Nuclide: Th-229
Tracer Recovery: 95.42%

Acquisition

Detector: AV250 SN: 51-027F2
Acquisition Start Date: 9/25/2014 8:58:54PM
Live Time: 960.00 min.
Real Time: 960.01 min.
Background Date: 9/14/2014 7:35:51PM
Bkgd Info: Sample: ICB;AV250; Det: AV250; Spectrum #1; 9/14/2014 7:35:51 PM

Energy Calibration: IC-9520;AV250-20140701
Efficiency Calibration:IC-9520;AV250-20140701
Calibration Date: 7/1/2014 5:29:13PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 26.40% +/- 0.36% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = Th2007_ROI
Decay Correction:9/23/2014 7:22:45PM
MDA Constants: Kα = 1.64 , Kβ = 1.64

Nuclide Library: Thorium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
Th-232	3999.0	4,010.0	-11.0	3743.0	4072.0	9.7	100.2	2	0.0000	2.00	2.751E-002	DPM/mL
Th-230	4688.0	4,687.5	0.5	4446.0	4717.0	31.9	99.7	1603	0.0000	1602.72	2.216E+001	DPM/mL
Th-229	4848.0	4,845.3	2.7	4717.0	5119.0	68.4	99.6	1621	1.0000	1620.03	2.138E+001	DPM/mL
Th-228	5420.0	5,423.3	-3.3	5119.0	5493.0	50.4	99.8	4	13.0000	-9.00	-1.246E-001	DPM/mL

Gross Alpha (Th-230) verification

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Actinide Prep

Batch No. : —

Balance ID : —

Note: If a section below is not used, marked the N/A box and initial & date next to the N/A. i.e. Mark the N/A box if a tracer is not added to the sample(s) then initial and date next to the N/A

No.	Sample Number	Aliquot (g / mL)	Crucible ID (960 min)	Dilution
192 ~~1~~	verification-1	0.3	RC=247	
195 2	2	1	RC=248	
196 ~~3~~	3		RC=250	
4			5% Mean failed	
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				

Tracer ☐ N/A

Initials / Date

Isotope : Th-229

Std Sol'n No. : Th-229_00018

Vol (mL) : 0.1

Ref Activity (dpm/mL) : 67.22958

Act Ref Date : 08-06-14

Samples Spiked and Traced By: SUB 9-22-14 (Initials / Date)

Verification Signature & Date: WB 9/22/14 (Initials / Date)

LCS Standard ☐ N/A

Initials / Date

Isotope : Th-230

Std Sol'n ID. : Th-230_00024

Vol (mL) : 0.3

Ref Activity (dpm/mL) : 22.282

Act Ref Date : 08-08-13

SOP's applied in preparing these samples. Mark box to left for all that apply:

☐ ST-RC-0003 Rev.		☐ ST-RC-0040 Rev.		☐ ST-RC-0110 Rev.	
☐ ST-RC-0004 Rev.		☐ ST-RC-0041 Rev.		☐ ST-RC-0120 Rev.	
☐ ST-RC-0014 Rev.		☐ ST-RC-0050 Rev.		☐ ST-RC-0232 Rev.	
☐ ST-RC-0020 Rev.		☐ ST-RC-0090 Rev.		☐ ST-RC-0238 Rev.	
☐ ST-RC-0021 Rev.		☑ ST-RC-0100 Rev.		☐ ST-RC-0240 Rev.	
				☐ ST-RC-0241 Rev.	
				☑ ST-RC-0242 Rev.	
				☐ ST-RC-5016 Rev.	
				☐	
				☐	

Isotope(s)

αβ ☐	Iso Pu ☐	Tc-99 ☐	Iso Cm ☐
Iso Am ☐	Ra ☐	Iso Th ☑	Pu-241 ☐
KPA ☐	Sr ☐	Iso U ☐	Th-229 ☐
Np ☐	TAR ☐	C-14 ☐	Cl-36 ☐

Count Time	Matrix
Long Count ☐	Soil ☐
Short Count ☐	H_2O ☐

Prepared By : SUB

Date : ~~9-1~~ 9-22-14

SUB 9-22-14

Reviewed by:

Date:

Page 1

\\Slsvr01\RAD\MasterForms\RAD-0045 Rev(3)

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Th - 230 _ 00024

Reagent ID: Th-230_00024

Description:	Th-230 Gross Alpha Spike	Expiration Date:	02/06/2015
No. of Bottles:	1	Laboratory:	TestAmerica St. Louis
Storage Location:	RAD Alpha/Beta STDs	Prepared By:	Bernsen, Sarah C
Reagent Volume:	250.000 mL	Solvent:	1M HNO3
Creation Date:	09/22/2014	Solvent Lot:	0
Container(s):	455587		
Comment:			

Reagent Analyte Information

Analyte	Source ID	Source Exp. Date	Source Conc.	Source Conc. Units	Final Conc.	Final Conc. Units
Gross Alpha	Th-230_00019	08/08/2063	2228.23100	dpm/mL	22.28231	dpm/mL
Th-230	Th-230_00019	08/08/2063	2228.23100	dpm/mL	22.28231	dpm/mL

Source Reagents

Reagent	Description	Type	Expiration	Vendor	Vendor Lot #	Vendor Cat Lot #	Volume Used	Volume Units
Th-230_00019	Th-230 Parent		08/08/63				2.50000	mL

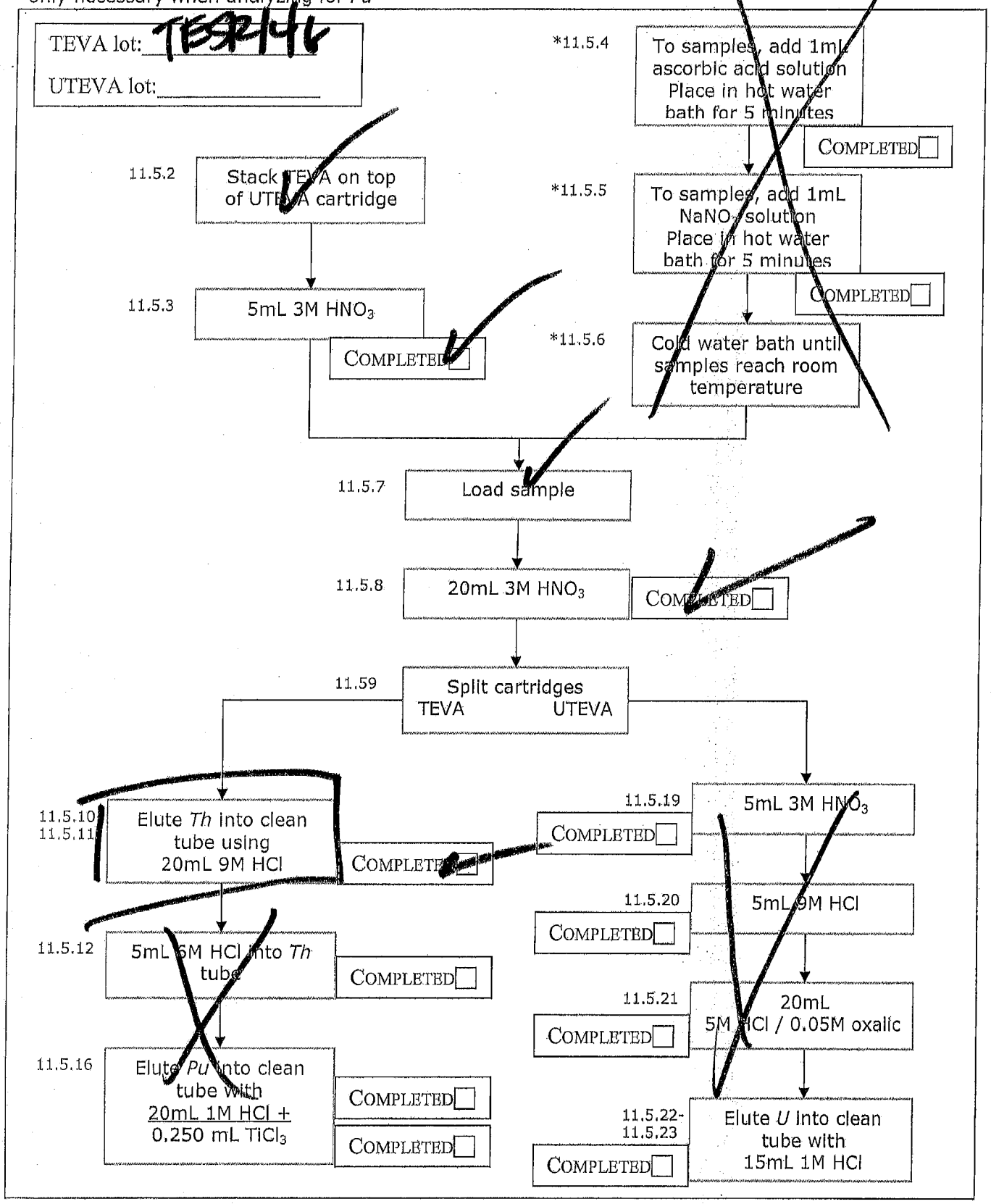
Sequential Thorium, Plutonium and Uranium via TEVA/UTEVA ST-RC-0242

Batch: Th Ur.

MB 9/23

All rinses should flow at 1 mL/minute (only 3M HNO_3 may be done at 3 mL/minute)

*only necessary when analyzing for *Pu*



Form: RAD-0063, Revised 09/18/13

Reagent

U-232_00003

Eckert & Ziegler
Analytics

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318
Tel 404·352·8677
Fax 404·352·2837
www.analyticsinc.com

CERTIFICATE OF CALIBRATION
Standard Radionuclide Source

85539-334

5 mL Liquid in Flame Sealed Vial

Customer: Test America/Earth City, MO
P.O. No.: 2434448, Item 1

This standard radionuclide source was prepared gravimetrically from a master solution, calibrated by Eckert & Ziegler Analytics. The master solution was calibrated by liquid scintillation counting. Radionuclide purity and calibration were checked by germanium gamma-ray spectrometry and liquid scintillation counting. The nuclear decay rate and reference date for this source are given below. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 1, February, 1979, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Isotope	Half-Life, Days	Activity (Bq)	Uncertainty*, % Type u_A	u_B	U	Reference Date (12:00 PM EST)
U-232	2.517E+04	1.725E+04	0.5	2.4	4.9	08/25/2011

***Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

Comments:
Impurities: U-232 daughters, γ-impurities (other than decay products) < 0.1 %.

Source Prepared by: M. I. Taskaeva, Radiochemist

QA Approved: J. D. McCorvey, QA Manager Alternate Date: 8/25/11

ACCREDITED SOURCE CALIBRATION LABORATORY HEALTH PHYSICS SOCIETY FOUNDED 1956

Corporate Office
24937 Avenue Tibbitts Valencia, California 91355

Laboratory
1380 Seaboard Industrial Blvd. Atlanta, Georgia, 30318

Reagent

U-232_00028

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

U - 232 - 00028

456736
ID: U-232_00028
Exp: 09/30/15 Prpd: SCB Crt: 09/23/14
U-232 Clean Tracer

Reagent ID: U-232_00028

		Expiration Date:	09/30/2015
Description:	U-232 Clean Tracer	Laboratory:	TestAmerica St. Louis
No. of Bottles:	1	Prepared By:	Bernsen, Sarah C
Storage Location:	RAD Actinide STDs	Solvent:	DI Water
Reagent Volume:	250.000 mL	Solvent Lot:	0
Creation Date:	09/23/2014		
Container(s):	456736		
Comment:	Prepared according to SOP ST-RC-0244, Rev.16 section 7.28 to different volume. 2 mL of parent to ~100 mL, 3g potassium sulfate, pH adjusted with 2M sulfuric acid. 25 mL of 1% lead nitrate. pH checked. Final volume 250 mL (instead of 100 mL).		

Reagent Analyte Information

Analyte	Source ID	Source Exp. Date	Source Conc.	Source Conc. Units	Final Conc.	Final Conc. Units
U-232	U-232_00009	08/25/2061	10280.70700	dpm/mL	82.24566	dpm/mL

Source Reagents

Reagent	Description	Type	Expiration	Vendor	Vendor Lot #	Vendor Cat Lot #	Volume Used	Volume Units
U-232_00009	U-232 Parent		08/25/61				2.00000	mL

St. Louis Radiological Standard Reverification Form

Standard ID Number: U-232_00028
True Value = 79.72088 DPM/L or g
Date Analyzed: 9/30/2014

Radionuclide: U-232 clean

	Replicates	
#1	78.189	DPM/L or g
#2	74.447	DPM/L or g
#3	77.297	DPM/L or g

Mean = 76.64433

1 sigma = 1.954513

1.96 sigma = 3.830846

True Value minus 5% = 75.73483 (True Value - 5%)
True Value plus 5% = 83.70692 (True Value + 5%)

Accuracy:
Mean value within 5% of Certified (True) Value? **Yes** **(Acceptance Criteria)**

Precision:
1.96 sigma Value Within 10% of Mean Value? **Yes** **(Acceptance Criteria)**

Standard Reverification Acceptable? **Yes**

Note: Criteria for reverification of radiological standards is taken from the DOE QSAS and LANL Statements of Work

Reviewed By/Date: Michaela L. Korrinhizer 10/1/2014

SOP Reference: STL-QA-0002, Current Revision

Uranium-232					
Initial Activity:	82.24565	dpm			
Reference Date:	8/25/2011				
Current Date:	9/30/2014		(or date at which you wish to determine activity)		
Elapsed Time:	1132	days			
Half Life:	25165.725	days	603977.4		
Exponential Term:	0.969302034				
Corrected Activity:	79.72087587	dpm	35.91030445	pCi	

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
5:12:13PM 10/1/2014

Sample

Sample Name: Verification 1
SampleType: Sample
:
Sample Collection Date:

Spectrum #1 Analysis #1
Sample Volume : 0.1000mL
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: U-232_00028_Clean
AnalysisID: 621980

Analyst: 60040

Tracer

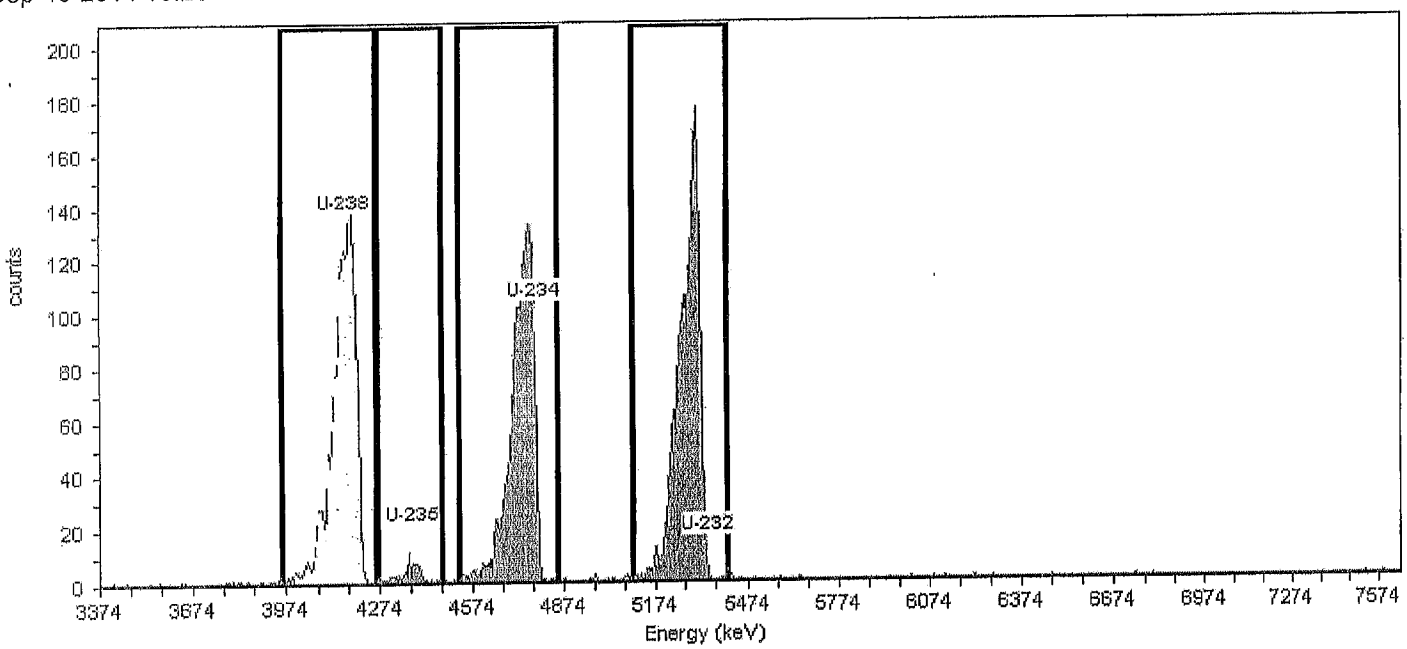
Tracer Name: UNAT Spike_00001
Tracer Activity: 72.27 DPM/mL x (Vol.)0.10 mL = 7.23 DPM
Tracer Ref. Date: 3/30/2008 11:00:22AM

Tracer Nuclide: U-238
Tracer Recovery: 84.88%

Acquisition

Detector: AV103
Serial Number: 49-037F3
Acquisition Start Date: 9/30/2014 7:28:49PM
Live Time: 960.00 min.
Real Time: 960.01 min.
Background Date: 9/19/2014 3:26:33PM
Background Info: Sample: ICB;AV103; Det: AV103; Spectrum #1; Sep-19-2014 15:26

Calibration Name: IC-9794;AV103-20140501
Calibration Date: 5/1/2014 5:53:36PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 26.03% +/- 0.32% TPU(2 sigma)



General Analysis

Analysis Method: ROI Analysis, Set Name = UROI
Decay Correction: 9/30/2014 7:27:32PM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Uranium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
U-238	4157.5	4,196.0	-38.5	3956.1	4261.9	76.6	100.0	1533	0.0000	1533.00	61.340	DPM/mL
U-235	4381.2	4,396.0	-14.8	4269.3	4470.7	48.5	80.2	64	2.0000	62.00	3.644	DPM/mL
U-234	4776.4	4,775.8	0.6	4530.3	4851.0	77.4	99.8	1472	2.0000	1470.00	69.434	DPM/mL
U-232	5343.2	5,320.3	22.9	5097.1	5410.3	63.8	100.1	1662	2.0000	1660.00	78.189	DPM/mL

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
5:12:04PM 10/1/2014

Sample

Sample Name: Verification 2
SampleType: Sample
:
Sample Collection Date:

Spectrum #1 Analysis #1
Sample Volume : 0.1000mL
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: U-232_00028_Clean
AnalysisID: 621981

Analyst: 60040

Tracer

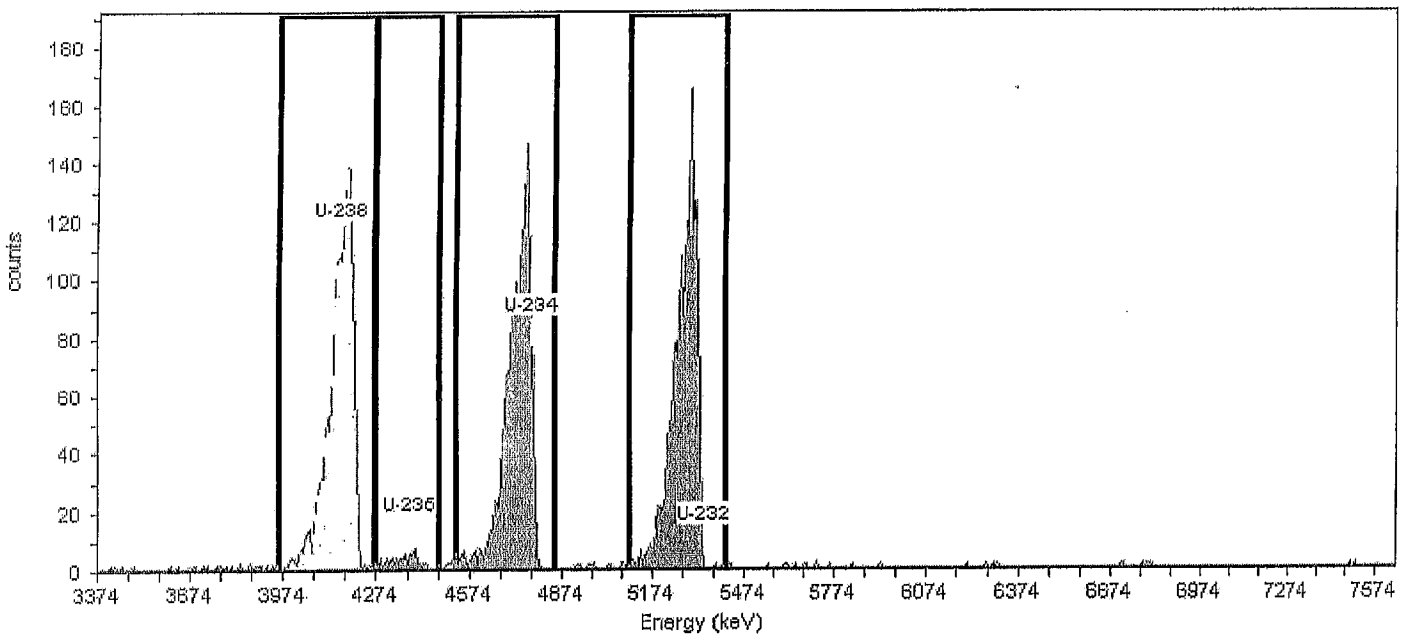
Tracer Name: UNAT Spike_00001
Tracer Activity: 72.27 DPM/mL x (Vol.)0.10 mL = 7.23 DPM
Tracer Ref. Date: 3/30/2008 11:00:22AM

Tracer Nuclide: U-238
Tracer Recovery: 82.24%

Acquisition

Detector: AV104
Serial Number: 49-037E5
Acquisition Start Date: 9/30/2014 7:28:49PM
Live Time: 960.00 min.
Real Time: 960.01 min.
Background Date: 9/19/2014 3:26:35PM
Background Info: Sample: ICB;AV104; Det: AV104; Spectrum #1; Sep-19-2014 15:26

Calibration Name: IC-9795;AV104-20140501
Calibration Date: 5/1/2014 5:53:43PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 25.99% +/- 0.34% TPU(2 sigma)



General Analysis

Analysis Method: ROI Analysis, Set Name = UROI
Decay Correction: 9/30/2014 7:27:32PM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Uranium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
U-238	4157.5	4,196.0	-38.5	3956.1	4261.9	76.7	100.0	1489	6.0000	1483.00	59.433	DPM/mL
U-235	4381.2	4,396.0	-14.8	4269.3	4470.7	96.9	80.2	68	0.0000	68.00	4.132	DPM/mL
U-234	4776.4	4,775.8	0.6	4530.3	4851.0	85.2	99.8	1492	3.0000	1489.00	72.703	DPM/mL
U-232	5343.2	5,320.3	22.9	5097.1	5410.3	80.3	100.1	1532	3.0000	1529.00	74.447	DPM/mL

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
5:11:54PM 10/1/2014

Sample

Sample Name: Verification 3
SampleType: Sample
:
Sample Collection Date:

Spectrum #1 Analysis #1
Sample Volume : 0.1000mL
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: U-232_00028_Clean
AnalysisID: 621982

Analyst: 60040

Tracer

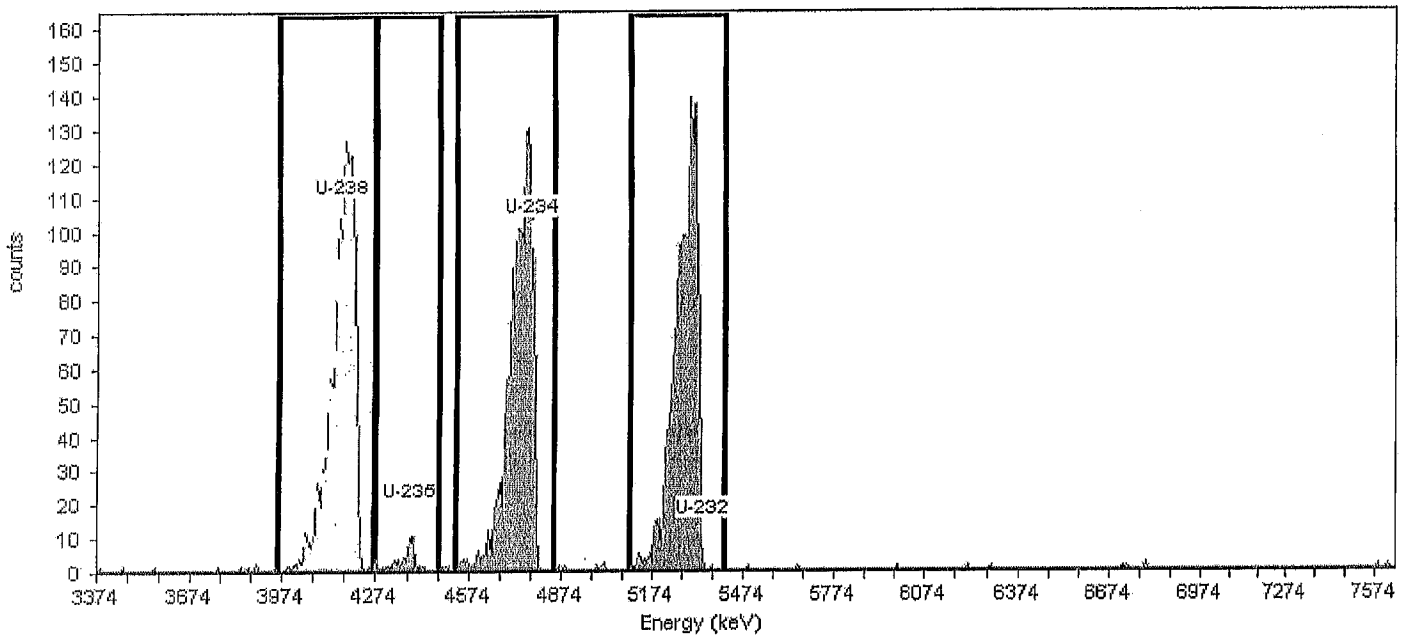
Tracer Name: UNAT Spike_00001
Tracer Activity: 72.27 DPM/mL x (Vol.)0.10 mL = 7.23 DPM
Tracer Ref. Date: 3/30/2008 11:00:22AM

Tracer Nuclide: U-238
Tracer Recovery: 82.46%

Acquisition

Detector: AV105
Serial Number: 49-037F1
Acquisition Start Date: 9/30/2014 7:28:50PM
Live Time: 960.00 min.
Real Time: 960.01 min.
Background Date: 9/19/2014 3:26:37PM
Background Info: Sample: ICB;AV105; Det: AV105; Spectrum #1; Sep-19-2014 15:26

Calibration Name: IC-9817;AV105-20140501
Calibration Date: 5/1/2014 5:53:50PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 24.05% +/- 0.30% TPU(2 sigma)



General Analysis

Analysis Method: ROI Analysis, Set Name = UROI
Decay Correction: 9/30/2014 7:27:32PM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Uranium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
U-238	4157.5	4,196.0	-38.5	3956.1	4261.9	73.2	100.0	1377	1.0000	1376.00	59.593	DPM/mL
U-235	4381.2	4,396.0	-14.8	4269.3	4470.7	23.1	80.2	52	1.0000	51.00	3.340	DPM/mL
U-234	4776.4	4,775.8	0.6	4530.3	4851.0	81.9	99.8	1393	1.0000	1392.00	73.252	DPM/mL
U-232	5343.2	5,320.3	22.9	5097.1	5410.3	87.1	100.1	1478	5.0000	1473.00	77.297	DPM/mL

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
11:10:20PM 10/1/2014

Sample

Sample Name: Verification 1
SampleType: Sample
:
Sample Collection Date:

Spectrum #1 Analysis #1
Sample Volume : 1.0000mL
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: U-232_00028_Th_Clean
AnalysisID: 621985

Analyst: 60040

Tracer

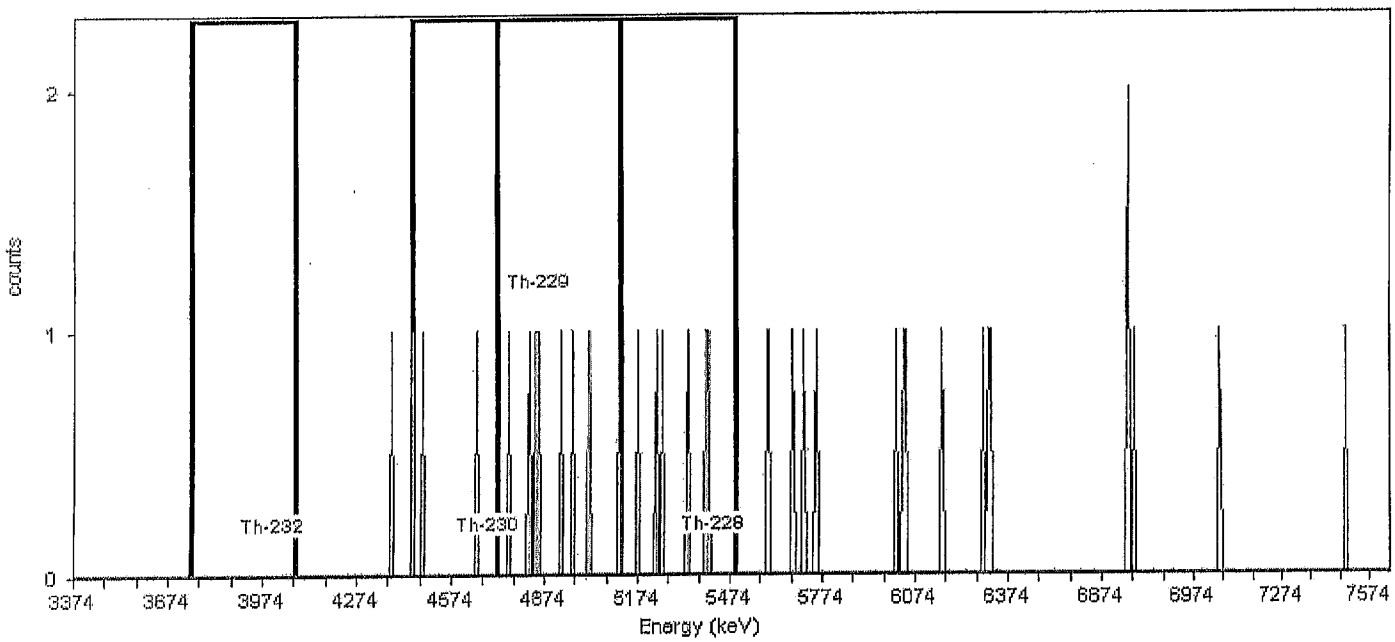
Tracer Name: Undefined
Tracer Activity:
Tracer Ref. Date:

Tracer Nuclide: External Recovery
Tracer Recovery: 100.00%

Acquisition

Detector: AV106
Serial Number: 49-037F6
Acquisition Start Date: 9/30/2014 7:30:38PM
Live Time: 960.00 min.
Real Time: 960.01 min.
Background Date: 9/19/2014 3:26:39PM
Background Info: Sample: ICB;AV106; Det: AV106; Spectrum #1; Sep-19-2014 15:26

Calibration Name: IC-9884;AV106-20140501
Calibration Date: 5/1/2014 5:53:57PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 26.42% +/- 0.37% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = Th2007_ROI
Decay Correction: 9/30/2014 7:29:07PM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Thorium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
Th-232	3999.0	4,010.0	-11.0	3743.0	4072.0	.0	100.2	0	2.0000	-2.00	-0.008	DPM/mL
Th-230	4688.0	4,687.5	0.5	4446.0	4717.0	39.9	99.7	3	3.0000	-0.31	-0.001	DPM/mL
Th-229	4848.0	4,845.3	2.7	4717.0	5119.0	.3	99.8	7	5.0000	2.06	0.008	DPM/mL
Th-228	5420.0	5,423.3	-3.3	5119.0	5493.0	.0	99.8	6	3.0000	3.06	0.012	DPM/mL

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
11:10:38PM 10/1/2014

Sample

Sample Name: Verification 2
SampleType: Sample
:
Sample Collection Date:

Spectrum #1 Analysis #1
Sample Volume : 1.0000mL
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: U-232_00028_Th_Clean
AnalysisID: 621983

Analyst: 60040

Tracer

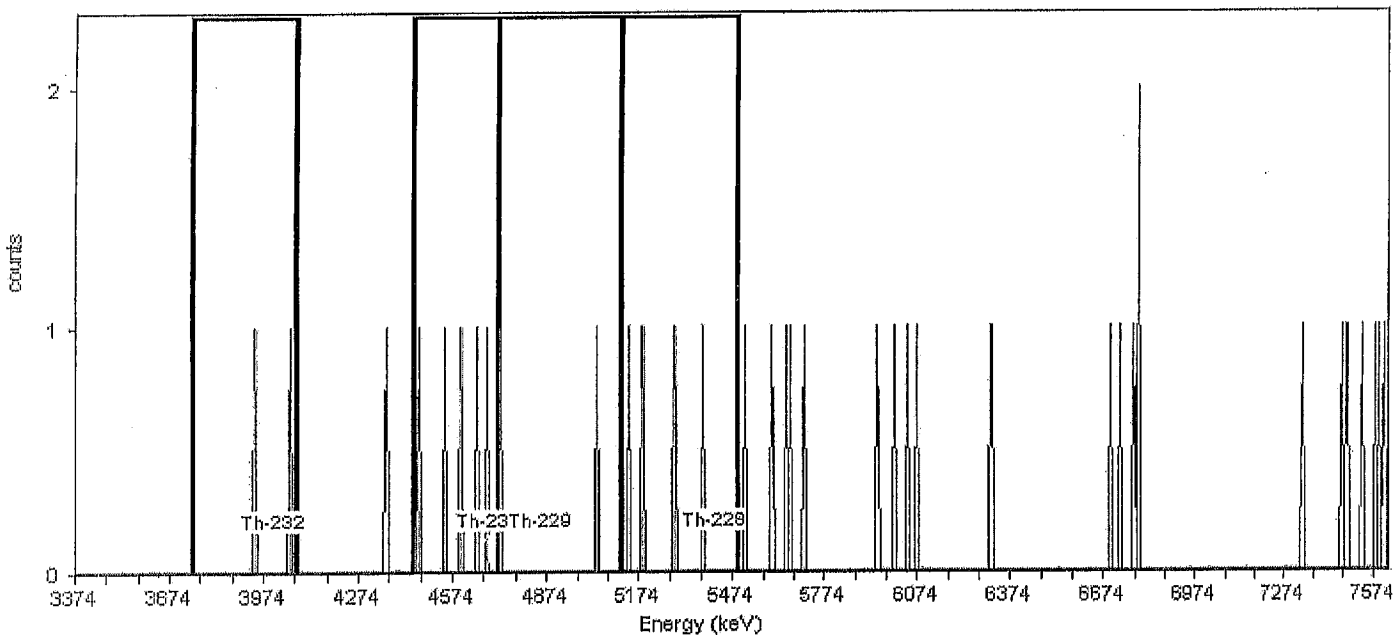
Tracer Name: Undefined
Tracer Activity:
Tracer Ref. Date:

Tracer Nuclide: External Recovery
Tracer Recovery: 100.00%

Acquisition

Detector: AV107
Serial Number: 49-037X7
Acquisition Start Date: 9/30/2014 7:30:39PM
Live Time: 960.00 min.
Real Time: 960.00 min.
Background Date: 9/19/2014 3:26:41PM
Background Info: Sample: ICB;AV107; Det: AV107; Spectrum #1; Sep-19-2014 15:26

Calibration Name: IC-9885;AV107-20140501
Calibration Date: 5/1/2014 5:54:04PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 25.60% +/- 0.38% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = Th2007_ROI
Decay Correction: 9/30/2014 7:29:07PM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Thorium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
Th-232	3999.0	4,010.0	-11.0	3743.0	4072.0	10.7	100.2	2	0.0000	2.00	0.008	DPM/mL
Th-230	4688.0	4,687.5	0.5	4446.0	4717.0	10.1	99.7	5	1.0000	4.03	0.016	DPM/mL
Th-229	4848.0	4,845.3	2.7	4717.0	5119.0	18.0	99.8	1	1.0000	0.03	0.000	DPM/mL
Th-228	5420.0	5,423.3	-3.3	5119.0	5493.0	20.4	99.8	4	2.0000	2.00	0.008	DPM/mL

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
11:10:49PM 10/1/2014

Sample

Sample Name: Verification 3
SampleType: Sample
:
Sample Collection Date:

Spectrum #1 Analysis #1
Sample Volume : 1.0000mL
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: U-232_00028_Th_Clean
AnalysisID: 621984

Analyst: 60040

Tracer

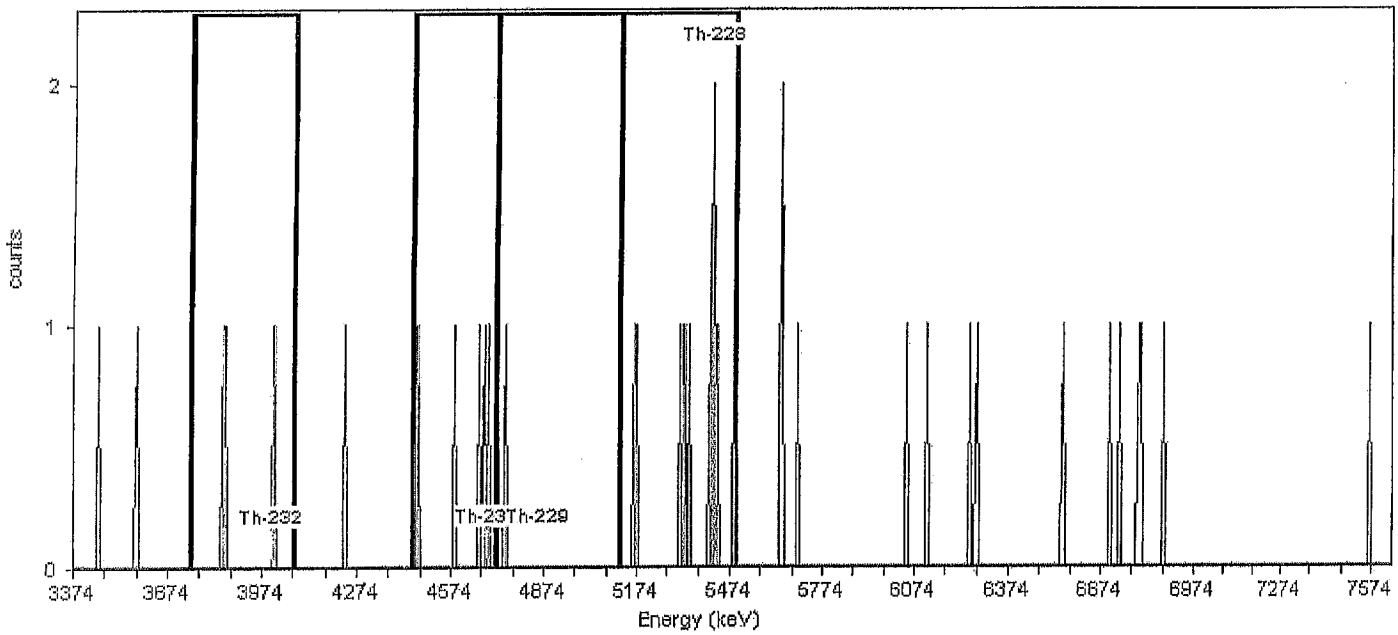
Tracer Name: Undefined
Tracer Activity:
Tracer Ref. Date:

Tracer Nuclide: External Recovery
Tracer Recovery: 100.00%

Acquisition

Detector: AV108
Serial Number: 49-037W1
Acquisition Start Date: 9/30/2014 7:30:41PM
Live Time: 960.00 min.
Real Time: 960.00 min.
Background Date: 9/19/2014 3:26:42PM
Background Info: Sample: ICB;AV108; Det: AV108; Spectrum #1; Sep-19-2014 15:26

Calibration Name: IC-9886;AV108-20140501
Calibration Date: 5/1/2014 5:54:10PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 26.31% +/- 0.35% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = Th2007_ROI
Decay Correction: 9/30/2014 7:29:07PM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Thorium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
Th-232	3999.0	4,010.0	-11.0	3743.0	4072.0	44.6	100.2	3	3.0000	0.00	0.000	DPM/mL
Th-230	4688.0	4,687.5	0.5	4446.0	4717.0	10.9	99.7	5	2.0310	2.97	0.012	DPM/mL
Th-229	4848.0	4,845.3	2.7	4717.0	5119.0	34.6	99.8	1	1.0310	-0.03	0.000	DPM/mL
Th-228	5420.0	5,423.3	-3.3	5119.0	5493.0	75.9	99.8	11	4.0000	7.00	0.028	DPM/mL

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

U-232 clean verification

Actinide Prep

Batch No. : —

Balance ID : —

No.	Sample Number	Aliquot (g / mL)	Crucible ID	Dilution
103 1	verification - 1	0.1	102	
104 2	2	1	107	
105 3	3	1	108	
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				

Note: If a section below is not used, marked the N/A box and initial & date next to the N/A. i.e. Mark the N/A box if a tracer is not added to the sample(s) then initial and date next to the N/A

Tracer ☐ N/A — Initials / Date

Isotope : UNAT
Std Sol'n No. : UNAT Spike -00001
Vol (mL) : 0.1
Ref Activity (dpm/mL) : 234- 70.691 / 235- 3.370 / 238- 72.264
Act Ref Date : 03-30-08

Samples Spiked and Traced By: Initials / Date

Verification Signature & Date: Initials / Date

LCS Standard ☐ N/A — Initials / Date

Isotope : U-232 clean
Std Sol'n ID. : U-232-00028
Vol (mL) : 0.1
Ref Activity (dpm/mL) : 82.245165
Act Ref Date : 08-25-11

SOP's applied in preparing these samples. Mark box to left for all that apply:

☐ ST-RC-0003 Rev.	☐ ST-RC-0040 Rev.	☐ ST-RC-0110 Rev.
☐ ST-RC-0004 Rev.	☐ ST-RC-0041 Rev.	☐ ST-RC-0120 Rev.
☐ ST-RC-0014 Rev.	☐ ST-RC-0050 Rev.	☐ ST-RC-0232 Rev.
☐ ST-RC-0020 Rev.	☐ ST-RC-0090 Rev.	☐ ST-RC-0238 Rev.
☐ ST-RC-0021 Rev.	☐ ST-RC-0100 Rev.	☐ ST-RC-0240 Rev.
		☐ ST-RC-0241 Rev.
		☐ ST-RC-0242 Rev.
		☐ ST-RC-5016 Rev.

Isotope(s)

αβ ☐	Iso Pu ☐	Tc-99 ☐	Iso Cm ☐
Iso Am ☐	Ra ☐	Iso Th ☐	Pu-241 ☐
KPA ☐	Sr ☐	Iso U ☒	Th-229 ☐
Np ☐	TAR ☐	C-14 ☐	Cl-36 ☐

Count Time	Matrix
Long Count ☒	Soil ☐
Short Count ☐	H_2O ☐

Prepared By : SNB
Date : 9-25-14

Reviewed by: _____
Date: _____

\\Slsvr01\RAD\MasterForms\RAD-0045 Rev(3)

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Reagent ID: U-232_00028

		Expiration Date:	05/11/2015
Description:	U-232 Clean Tracer	Laboratory:	TestAmerica St. Louis
No. of Bottles:	1	Prepared By:	Bernsen, Sarah C
Storage Location:	RAD Actinide STDs	Solvent:	DI Water
Reagent Volume:	250.000 mL	Solvent Lot:	0
Creation Date:	09/23/2014		
Container(s):	456736		
Comment:	Prepared according to SOP ST-RC-0244, Rev.16 section 7.28 to different volume. 2 mL of parent to ~100 mL, 3g potassium sulfate, pH adjusted with 2M sulfuric acid. 25 mL of 1% lead nitrate. pH checked. Final volume 250 mL (instead of 100 mL).		

Reagent Analyte Information

Analyte	Source ID	Source Exp. Date	Source Conc.	Source Conc. Units	Final Conc.	Final Conc. Units
U-232	U-232_00009	08/25/2061	10280.70700	dpm/mL	82.24566	dpm/mL

Source Reagents

Reagent	Description	Type	Expiration	Vendor	Vendor Lot #	Vendor Cat Lot #	Volume Used	Volume Units
U-232_00009	U-232 Parent		08/25/61				2.00000	mL

Sequential Thorium, Plutonium and Uranium via TEVA/UTEVA ST-RC-0242

Batch: U232 Clean Ur.

MB 9/26

All rinses should flow at 1 mL/minute (only 3M HNO_3 may be done at 3 mL/minute)

*only necessary when analyzing for *Pu*

TEVA lot: TES214G

UTEVA lot: UTB214D

11.5.2 Stack TEVA on top of UTEVA cartridge

11.5.3 5mL 3M HNO_3 — COMPLETED ☐

*11.5.4 To samples, add 1mL ascorbic acid solution Place in hot water bath for 5 minutes — COMPLETED ☐

*11.5.5 To samples, add 1mL $NaNO_2$ solution Place in hot water bath for 5 minutes — COMPLETED ☐

*11.5.6 Cold water bath until samples reach room temperature

11.5.7 Load sample

11.5.8 20mL 3M HNO_3 — COMPLETED ☑

11.59 Split cartridges TEVA UTEVA

11.5.10-11.5.11 Elute *Th* into clean tube using 20mL 9M HCl — COMPLETED ☑

11.5.12 5mL 6M HCl into *Th* tube — COMPLETED ☐

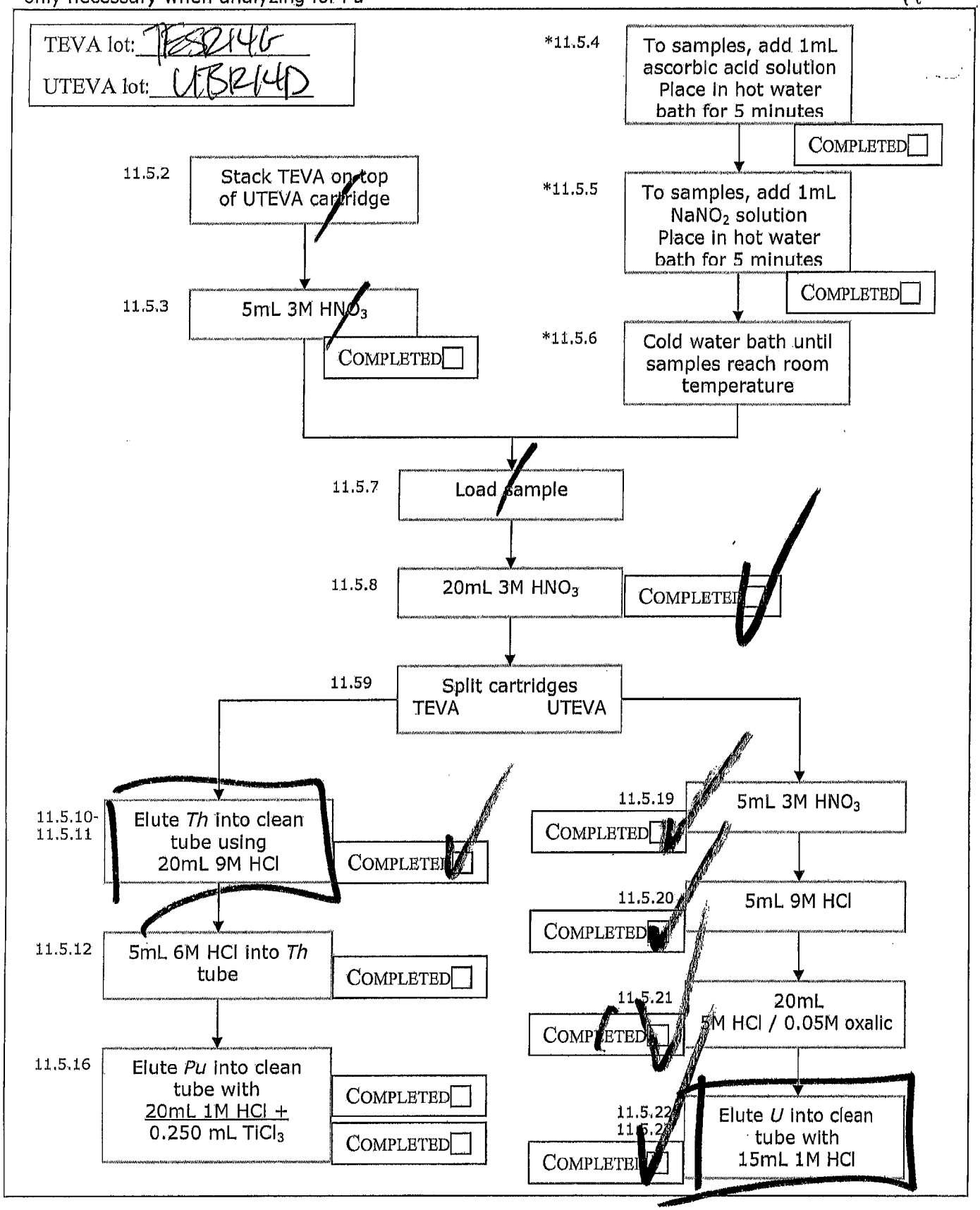
11.5.16 Elute *Pu* into clean tube with 20mL 1M HCl + 0.250 mL $TiCl_3$ — COMPLETED ☐ COMPLETED ☐

11.5.19 5mL 3M HNO_3 — COMPLETED ☑

11.5.20 5mL 9M HCl — COMPLETED ☑

11.5.21 20mL 5M HCl / 0.05M oxalic — COMPLETED ☑

11.5.22 11.5.23 Elute *U* into clean tube with 15mL 1M HCl — COMPLETED ☑



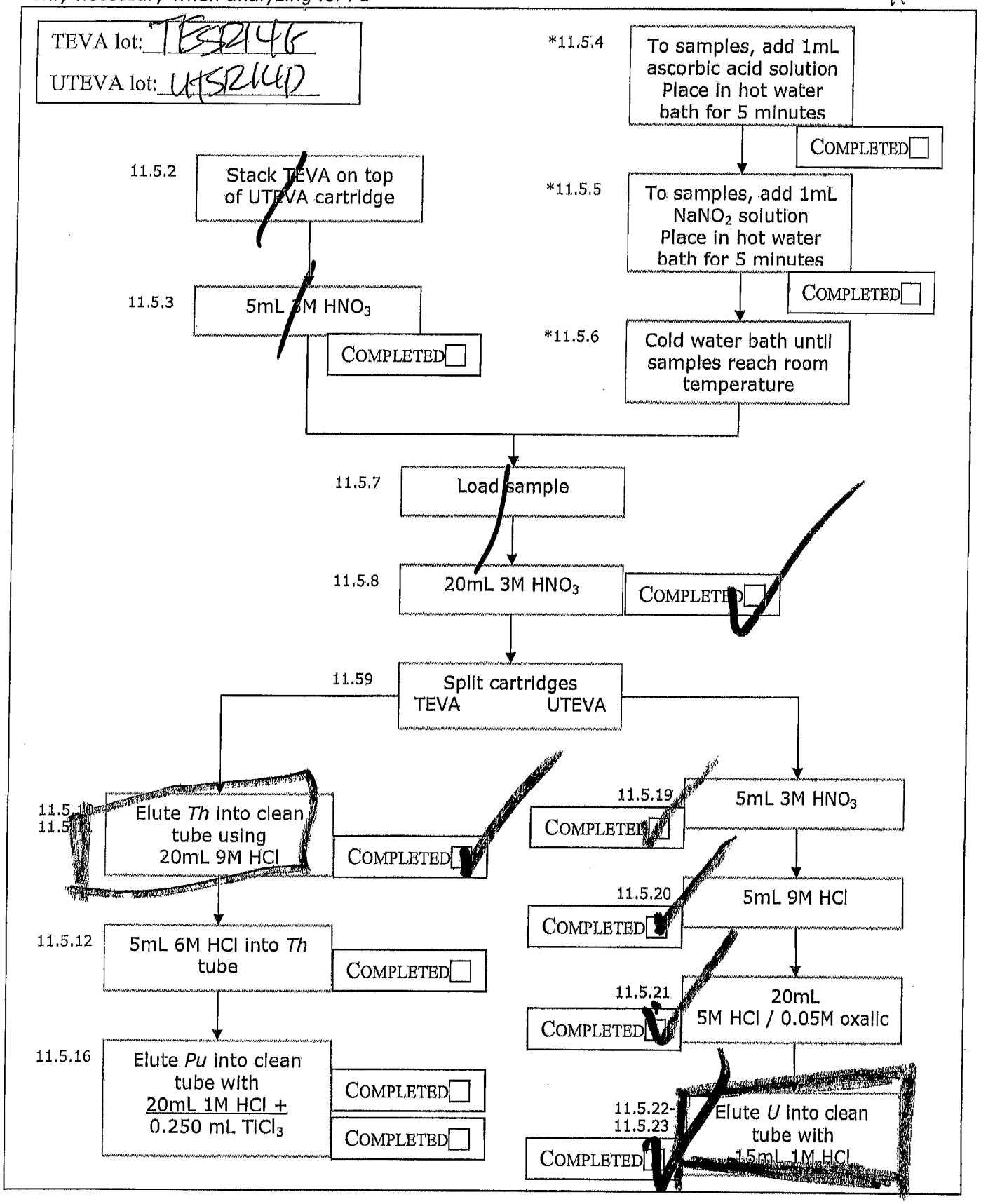
Form: RAD-0063, Revised 09/18/13

Sequential Thorium, Plutonium and Uranium via TEVA/UTEVA ST-RC-0242

Batch: U732 clean ver.

All rinses should flow at 1 mL/minute (only 3M HNO_3 may be done at 3 mL/minute)

*only necessary when analyzing for *Pu*



Reagent

UNAT Ampoule_00001

New Brunswick Laboratory
U.S. Department of Energy

Certificate of Analysis

CRM 145

Uranyl (Normal) Nitrate Assay and Isotopic Solution

Uranium Mass Fraction: **0.0101356 g U/g solution ± 0.0000011 g U/g solution**
[10.1356 mg U/g solution ± 0.0011 mg U/g solution]

	$^{234}U/^{238}U$	$^{235}U/^{238}U$
Atom Ratio:	**0.000052841**	**0.0072543**
Atom Ratio Uncertainty:	**0.000000082**	**0.0000040**

	^{234}U	^{235}U	^{238}U
Atom Percent:	**0.0052458**	**0.72017**	**99.27458**
Atom Percent Uncertainty:	**0.0000081**	**0.00039**	**0.00039**
Weight Percent:	**0.0051579**	**0.71114**	**99.28370**
Weight Percent Uncertainty:	**0.0000080**	**0.00038**	**0.00038**

Relative Atomic Weight: **238.028918**
Relative Atomic Weight Uncertainty: **0.000012**

Note: ^{233}U and ^{236}U were not detected. The detection limit of uranium ratios for the technique used is 5×10^{-9}.

This Certified Reference Material (CRM) is a uranium concentration and isotopic solution standard intended for use in calibration of and/or quality control for uranium analysis methods. Each unit of CRM 145 consists of approximately 20-mL of uranyl nitrate solution in 1M nitric acid, contained in a sealed glass ampoule.

NOTE: The vial should be handled under proper radiologically-controlled conditions at all times.

The certified uranium content value is based on the mass of high-purity metal dissolved and diluted to a known solution mass. The stated uranium concentration was calculated as the prepared value and verified experimentally by the NBL-modified Davies and Gray titration. The certified uranium isotopic composition and atomic weight is based upon measurements performed on multiple samples by two different measurement techniques on a Thermal Ionization Mass Spectrometer (TIMS), calibrated using CRM U030-A as primary comparator and CRM 129-A as a quality control sample. The isotopic values are shared with CRM 112-A, uranium (normal) metal standard which was the source of uranium used to produce the solutions.

RAD13-0018
UNAT Spike
marrss
None
Prep/Opened: 5/3/2013
Exp(1): 5/10/2014
Exp(2): 5/10/2014

All uncertainties for the certified values are expressed as expanded uncertainties (U) where $U = k*u_c$, where u_c is the

September 30, 2010
Argonne, Illinois

www.nbl.doe.gov

Jon Neuhoff, Director
New Brunswick Laboratory

(Revision of Certificate dated March 30, 2008)

127971
ID: UNAT_00008
Exp: 05/10/14 Prpd: SB Crt: 05/03/13
UNAT spike

combined standard uncertainty and the coverage factor k = 2. Uncertainties were determined according to the JCGM 100:2008 *Guide to the Expression of Uncertainty in Measurement*. The coverage factor of 2 was chosen to provide an approximate 95% level of confidence. The input quantities associated with the uranium content included uncertainties due to weighing, CRM 112-A purity, and buoyancy factors. The input quantities associated with the uranium isotopic composition included uncertainties from the certified value for CRM U030-A, measurement precision, and background corrections associated with the analytical techniques.

The CRM was produced by dissolving uranium metal in a single batch and container, with extensive mixing of the resultant solution followed by dispensation into individual bottles. Subsequent measurements of a random sampling of the total lot produced did not indicate any inhomogeneity in uranium concentration or isotopic composition. The minimum sample sizes taken from packaged units and measured were 30 mg U by titration and 1 μg U by TIMS. The NBL makes no recommendation as to the minimum sample size to be used to ensure concentration or isotopic homogeneity.

Users are cautioned that once the vial is opened, the uranium concentration and/or isotopic composition of the material may be affected by evaporative losses or environmental contamination. User's should take appropriate precautions to safeguard the material before, during and after use to ensure valid certificate values.

Recommended Procedure for Ampoule Handling and Dispensing of Solution

1. The ampoule contains a strongly acidic solution of uranium. Appropriate precautions should be taken.

2. Before opening the ampoule, ensure that any dried uranium or condensed liquid in the neck or body of the ampoule is re-dissolved into solution. This can be accomplished by inverting the ampoule repeatedly.

3. The glass ampoules are scored at the neck for ease of opening. However, glass burrs and fragments pose a cut hazard to anyone opening the ampoules. Appropriate precautions should be taken.

4. Lightly moisten the scored line on the neck with distilled water to help ensure a clean break at the score.

5. Because of the narrow neck of the ampoule it may be difficult or impossible to pour the solution out. Here is one possible method:

    a. Obtain approximately 12-cm length of plastic capillary tubing (e.g. i.d. 0f 0.1", o.d. of 0.16").
    b. Insert one end of the capillary tubing fully into the ampoule
    c. Fold the remaining length of tubing along the outside of the ampoule, ensuring that the tube is not crimped and will allow the free flow of air through the tube and into the ampoule.
    d. Holding the ampoule and tubing in one hand, and a beaker or dispensing bottle in another, invert the ampoule over the container allowing the solution to drain into it.
    e. The capillary tubing allows air to flow into the ampoule, eliminating the "airlock" created by the narrow neck of the open ampoule.

6. The user should be wary of evaporative losses once the ampoule is opened, and prevent uranium contamination of the sample. It is recommended that the entire solution be accurately weighed and aliquanted as soon as possible after opening the sample. Precautions should be taken (clean glass/plastic ware, air filtration, etc) to prevent uranium contamination of the CRM with subsequent perturbation of the isotopic composition.

Reagent

UNAT Spike_00001

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

UNAT Spike_00001

Reagent ID: UNAT Spike_00001

Description:	UNAT_spike UNAT_00009	Expiration Date:	11/13/2014
No. of Bottles:	1	Laboratory:	TestAmerica St. Louis
Storage Location:	RAD Actinide STDs	Prepared By:	Bramblett, Megan L
Reagent Volume:	200.000 mL	Solvent:	1M HNO3
Creation Date:	11/11/2013	Solvent Lot:	n/a
Container(s):	243735		
Comment:			

243735
ID: UNAT Spike_00001
Exp: 11/13/14 Prpd: MLM Crt: 11/11/13
UNAT_spike UNAT_00009

Reagent Analyte Information

Analyte	Source ID	Source Expiration Date	Source Conc.	Source Conc. Units	Final Conc.	Final Conc. Units
U-234	UNAT Parent_00001	03/30/2058	706.91200	dpm/mL	70.69123	dpm/mL
U-235	UNAT Parent_00001	03/30/2058	33.70600	dpm/mL	3.37064	dpm/mL
U-238	UNAT Parent_00001	03/30/2058	722.65000	dpm/mL	72.26499	dpm/mL

Source Reagents

Reagent	Description	Type	Expiration	Vendor	Vendor Lot #	Vendor Cat Lot #	Volume Used	Volume Units
UNAT Parent_00001	UNAT Parent		03/30/58				20.00000	mL

St. Louis Radiological Standard Reverification Form

Standard ID Number: UNAT_00009
True Value = 70.69123 DPM/L or g
Date Analyzed: 11/13/2013

Radionuclide: U-234

	Replicates	
#1	72.62	DPM/L or g
#2	68.99	DPM/L or g
#3	71.84	DPM/L or g

Mean = 71.15

1 sigma = 1.910838 1.96 sigma = 3.745242

True Value minus 5% = 67.15667 (True Value - 5%)
True Value plus 5% = 74.22579 (True Value + 5%)

Accuracy:
Mean value within 5% of Certified (True) Value? **Yes** **(Acceptance Criteria)**

Precision:
1.96 sigma Value Within 10% of Mean Value? **Yes** **(Acceptance Criteria)**

Standard Reverification Acceptable? **Yes**

Note: Criteria for reverification of radiological standards is taken from the DOE QSAS and LANL Statements of Work

Reviewed By/Date: RTM 11/14/2013

SOP Reference: STL-QA-0002, Current Revision

St. Louis Radiological Standard Reverification Form

Standard ID Number: UNAT_00009
True Value = 72.264991 DPM/L or g
Date Analyzed: 11/13/2013

Radionuclide: U-238

	Replicates	
#1	75.65	DPM/L or g
#2	69.41	DPM/L or g
#3	72.64	DPM/L or g

Mean = 72.56667

1 sigma = 3.120646 1.96 sigma = 6.116467

True Value minus 5% = 68.65174 (True Value - 5%)
True Value plus 5% = 75.87824 (True Value + 5%)

Accuracy:
Mean value within 5% of Certified (True) Value? **Yes** **(Acceptance Criteria)**

Precision:
1.96 sigma Value Within 10% of Mean Value? **Yes** **(Acceptance Criteria)**

Standard Reverification Acceptable? **Yes**

Note: Criteria for reverification of radiological standards is taken from the DOE QSAS and LANL Statements of Work

Reviewed By/Date: RTM 11/14/2013

SOP Reference: STL-QA-0002, Current Revision

Sample

Sample Name: Verification 1 Type: Sample
Spectrum #2 Analysis #1
:
Sample Collection Date:
Comment:

Sample Volume : 0.10 Sample Units: mL
First Stage Dilution: N/A
Aliquot: N/A Aliquot Fraction: N/A
Dilution 2: N/A
Lab Preparation:

Batch

Batch Name: UNATSpike_00001
:
Description:

Client Name: Undefined
Client Contact:
Analyst: 60040

Tracer

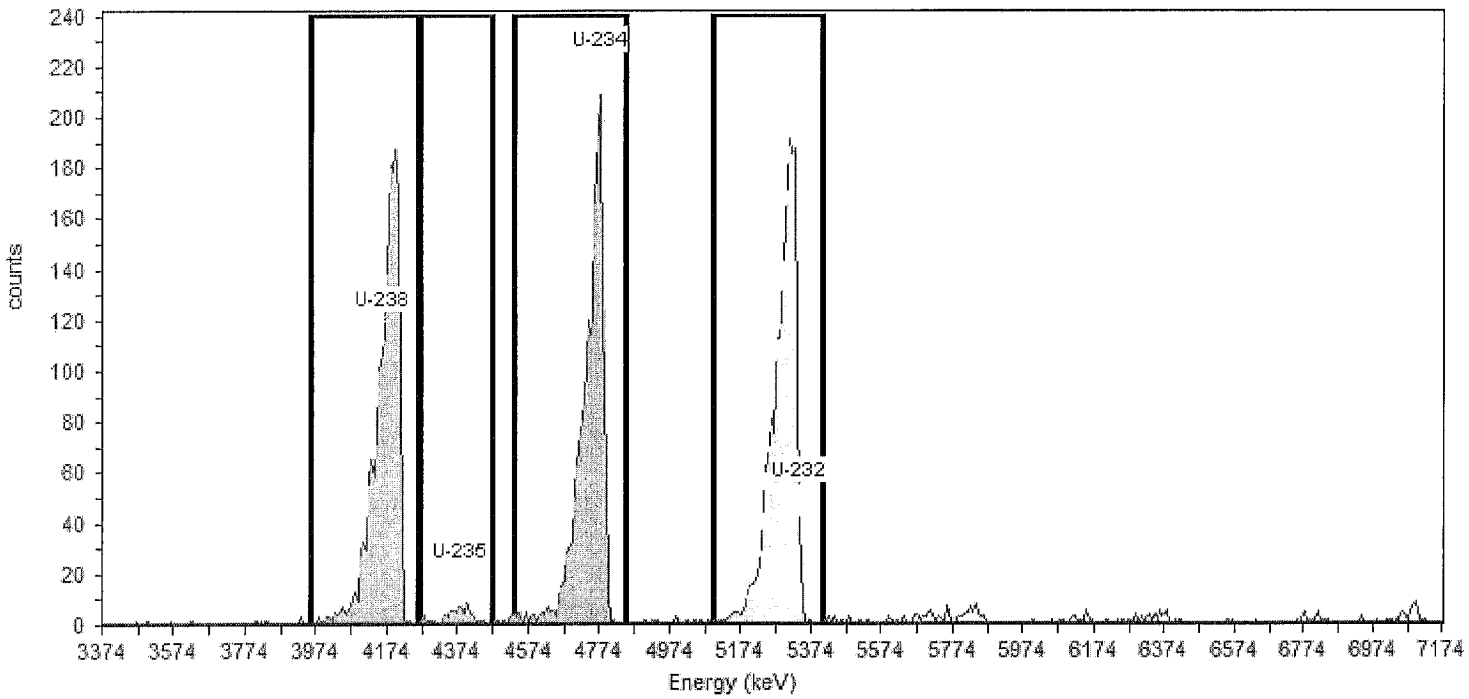
Tracer Name: U-232_00020
Tracer Activity: 82.25 DPM / mL x (Vol.) 0.10 mL = 8.22 DPM
Tracer Ref. Date: 8/25/2011 4:56:42PM

Tracer Nuclide: U-232
Tracer Recovery: 89.79%

Acquisition

Detector: AV248 SN: 51-005P4
Acquisition Start Date: 11/13/2013 9:57:05PM
Live Time: 960.00 min.
Real Time: 960.00 min.
Background Date: 10/17/2013 1:19:22AM
Bkgd Info: Sample: ICB;AV248; Det: AV248; Spectrum #1; 10/17/2013 1:19:22 AM

Energy Calibration: IC-8877;AV248-20130620
Efficiency Calibration:IC-8877;AV248-20130620
Calibration Date: 6/20/2013 11:03:01PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 26.38% +/- 0.31% TPU(2 sigma)



General Analysis

Analysis Method: ROI Analysis, Set Name = UROI
Decay Correction:11/13/2013 1:51:53AM
MDA Constants: Kα = 1.64 , Kβ = 1.64

Nuclide Library: Uranium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity DPM/mL	2.00Sigma TPU DPM/mL	Critical Level DPM/mL	MDA DPM/mL
U-238	4157.453	3956.099	4261.858	64.114	100.0	1,720.00	0.0000	1,720	7.565E+001	9.204E+000	0.000E+000	1.190E-001
U-235	4381.179	4269.316	4470.670	66.924	80.2	66.00	0.0000	66	3.619E+000	9.846E-001	0.000E+000	1.484E-001
U-234	4776.430	4530.331	4851.005	65.069	99.8	1,654.00	6.0000	1,648	7.262E+001	8.872E+000	2.511E-001	6.215E-001
U-232	5343.203	5097.104	5410.321	69.400	100.1	1,837.00	5.0000	1,832	7.385E+001	8.202E+000	2.335E-001	5.886E-001

Sample

Sample Name: Verification 2 Type: Sample
Spectrum #2 Analysis #1
:
Sample Collection Date:
Comment:

Sample Volume : 0.10 Sample Units: mL
First Stage Dilution: N/A
Aliquot: N/A Aliquot Fraction: N/A
Dilution 2: N/A
Lab Preparation:

Batch

Batch Name: UNATSpike_00001
:
Description:

Client Name: Undefined
Client Contact:
Analyst: 60040

Tracer

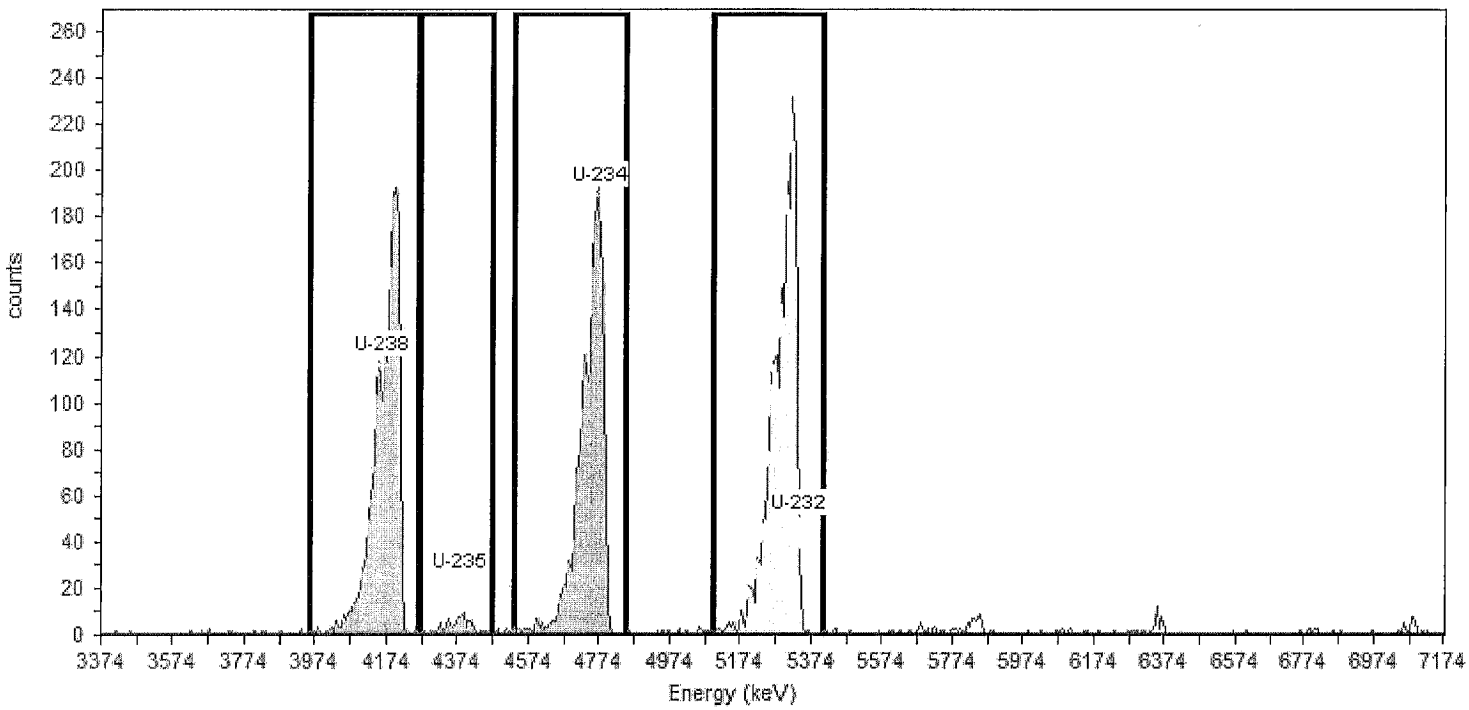
Tracer Name: U-232_00020
Tracer Activity: 82.25 DPM / mL x (Vol.) 0.10 mL = 8.22 DPM
Tracer Ref. Date: 8/25/2011 4:56:42PM

Tracer Nuclide: U-232
Tracer Recovery: 94.44%

Acquisition

Detector: AV249 SN: 51-005EE5
Acquisition Start Date: 11/13/2013 9:57:05PM
Live Time: 960.00 min.
Real Time: 960.00 min.
Background Date: 10/17/2013 1:19:22AM
Bkgd Info: Sample: ICB;AV249; Det: AV249; Spectrum #1; 10/17/2013 1:19:22 AM

Energy Calibration: IC-9520;AV249-20130620
Efficiency Calibration:IC-9520;AV249-20130620
Calibration Date: 6/20/2013 11:03:06PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 27.78% +/- 0.38% TPU(2 sigma)



General Analysis

Analysis Method: ROI Analysis, Set Name = UROI
Decay Correction:11/13/2013 1:51:53AM
MDA Constants: Kα = 1.64 , Kβ = 1.64

Nuclide Library: Uranium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity DPM/mL	2.00Sigma TPU DPM/mL	Critical Level DPM/mL	MDA DPM/mL
U-238	4157.453	3956.099	4261.858	74.002	100.0	1,748.00	0.0000	1,748	6.941E+001	8.399E+000	0.000E+000	1.075E-001
U-235	4381.179	4269.316	4470.670	60.410	80.2	68.00	1.0000	67	3.317E+000	9.014E-001	1.152E-001	3.644E-001
U-234	4776.430	4530.331	4851.005	68.212	99.8	1,738.00	4.0000	1,734	6.899E+001	8.357E+000	1.851E-001	4.779E-001
U-232	5343.203	5097.104	5410.321	74.844	100.1	2,035.00	6.0000	2,029	7.767E+001	8.568E+000	2.310E-001	5.717E-001

Sample

Sample Name: Verification 3 Type: Sample
Spectrum #2 Analysis #1
:
Sample Collection Date:
Comment:

Sample Volume : 0.10 Sample Units: mL
First Stage Dilution: N/A
Aliquot: N/A Aliquot Fraction: N/A
Dilution 2: N/A
Lab Preparation:

Batch

Batch Name: UNATSpike_00001
:
Description:

Client Name: Undefined
Client Contact:
Analyst: 60040

Tracer

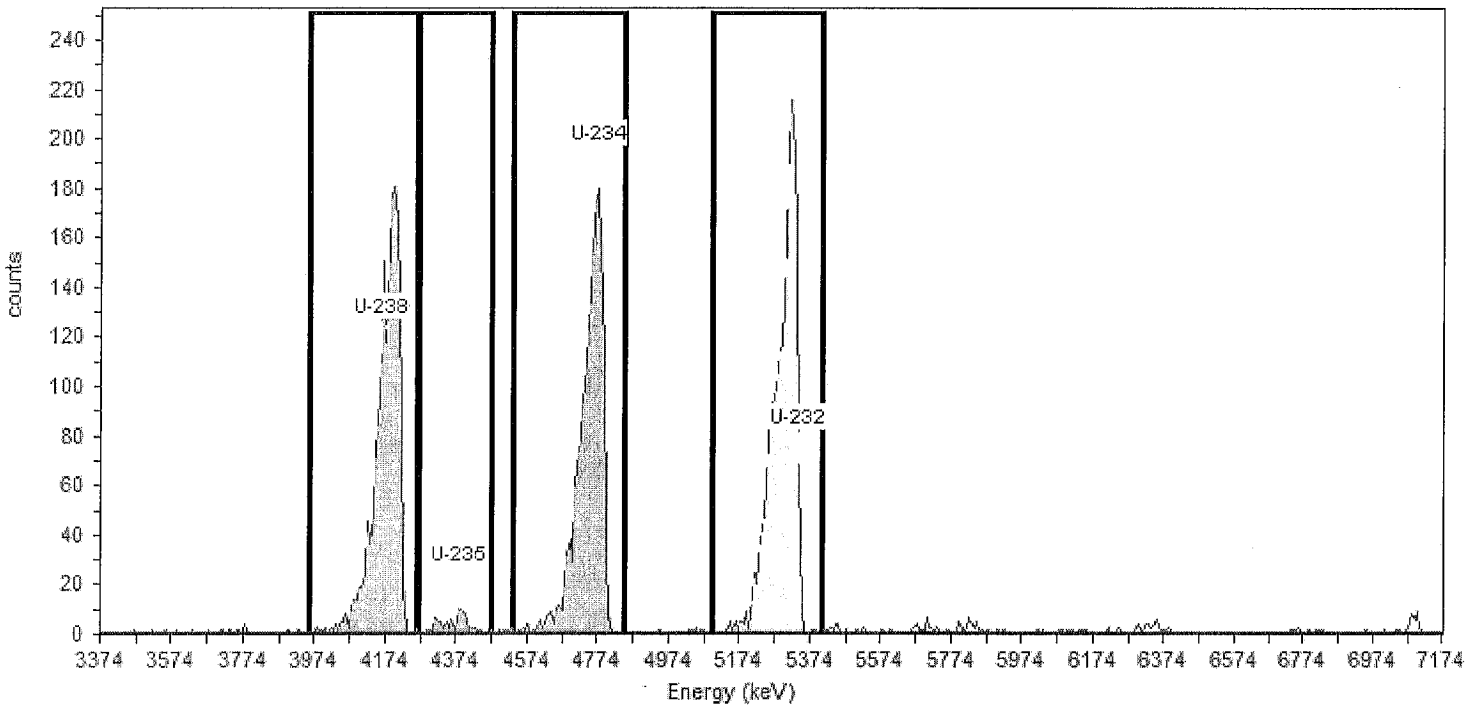
Tracer Name: U-232_00020
Tracer Activity: 82.25 DPM / mL x (Vol.) 0.10 mL = 8.22 DPM
Tracer Ref. Date: 8/25/2011 4:56:42PM

Tracer Nuclide: U-232
Tracer Recovery: 91.57%

Acquisition

Detector: AV250 SN: 51-027F2
Acquisition Start Date: 11/13/2013 9:57:05PM
Live Time: 960.00 min.
Real Time: 960.01 min.
Background Date: 10/17/2013 1:19:23AM
Bkgd Info: Sample: ICB;AV250; Det: AV250; Spectrum #1; 10/17/2013 1:19:23 AM

Energy Calibration: IC-8879;AV250-20130620
Efficiency Calibration:IC-8879;AV250-20130620
Calibration Date: 6/20/2013 11:03:10PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 26.67% +/- 0.35% TPU(2 sigma)



General Analysis

Analysis Method: ROI Analysis, Set Name = UROI
Decay Correction:11/13/2013 1:51:53AM
MDA Constants: Kα = 1.64 , Kβ = 1.64

Nuclide Library: Uranium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity DPM/mL	2.00Sigma TPU DPM/mL	Critical Level DPM/mL	MDA DPM/mL
U-238	4157.453	3956.099	4261.858	67.349	100.0	1,706.00	3.0000	1,703	7.264E+001	8.844E+000	1.719E-001	4.592E-001
U-235	4381.179	4269.316	4470.670	90.510	80.2	73.00	0.0000	73	3.882E+000	1.012E+000	0.000E+000	1.439E-001
U-234	4776.430	4530.331	4851.005	67.867	99.8	1,683.00	2.0000	1,681	7.184E+001	8.755E+000	1.406E-001	3.969E-001
U-232	5343.203	5097.104	5410.321	70.227	100.1	1,893.00	4.0000	1,889	7.532E+001	8.352E+000	2.026E-001	5.230E-001

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Actinide Prep

UNAT

Batch No. : ——

Balance ID : ——

Note: If a section below is not used, marked the N/A box and initial & date next to the N/A.
i.e. Mark the N/A box if a tracer is not added to the sample(s) then initial and date next to the N/A

No.	Sample Number	Aliquot (g / mL)	~~MS~~	Initials shift
1	Verification 1	0.1	147	RC=248
2	2	↓	148	RC=249
3	3	↓	149	RC=250
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				

Tracer ☐ N/A

Initials / Date

Isotope : U-232
Std Sol'n No. : U-232 00020
Vol (mL) : 0.1
Ref Activity (dpm/mL) : 82 247 dpm/mL
Act Ref Date : 8.25.11

Samples Spiked and Traced By:
MB 11/11/13
Initials / Date

Verification Signature & Date:
LM 11-11-13
Initials / Date

LCS Standard ☐ N/A

Initials / Date

Isotope : UNAT
Std Sol'n ID. : UNATspike-00001
Vol (mL) : 0.1
Ref Activity (dpm/mL) : U234=70.691 dpm/mL U235=3.370 dpm/mL U238=72.264 dpm/mL
Act Ref Date : 3.30.08

SOP's applied in preparing these samples. Mark box to left for all that apply:

☐	ST-RC-0003 Rev.		☐	ST-RC-0040 Rev.		☐	ST-RC-0110 Rev.	
☐	ST-RC-0004 Rev.		☐	ST-RC-0041 Rev.		☐	ST-RC-0120 Rev.	
☐	ST-RC-0014 Rev.		☐	ST-RC-0050 Rev.		☐	ST-RC-0232 Rev.	
☐	ST-RC-0020 Rev.		☐	ST-RC-0090 Rev.		☑	ST-RC-0238 Rev.	
☐	ST-RC-0021 Rev.		☑	ST-RC-0100 Rev.		☐	ST-RC-0240 Rev.	
						☐	ST-RC-0241 Rev.	
						☐	ST-RC-0242 Rev.	
						☐	ST-RC-5016 Rev.	
						☐		
						☐		

Isotope(s)

αβ	☐	Iso Pu	☐	Tc-99	☐	Iso Cm	☐
Iso Am	☐	Ra	☐	Iso Th	☐	Pu-241	☐
KPA	☐	Sr	☐	Iso U	☑	Th-229	☐
Np	☐	TAR	☐	C-14	☑	Cl-36	☐

Count Time		Matrix	
Long Count	☐	Soil	☐
Short Count	☐	H_2O	☐

Prepared By : MB
Date : 11/11/13

Reviewed by:
Date:

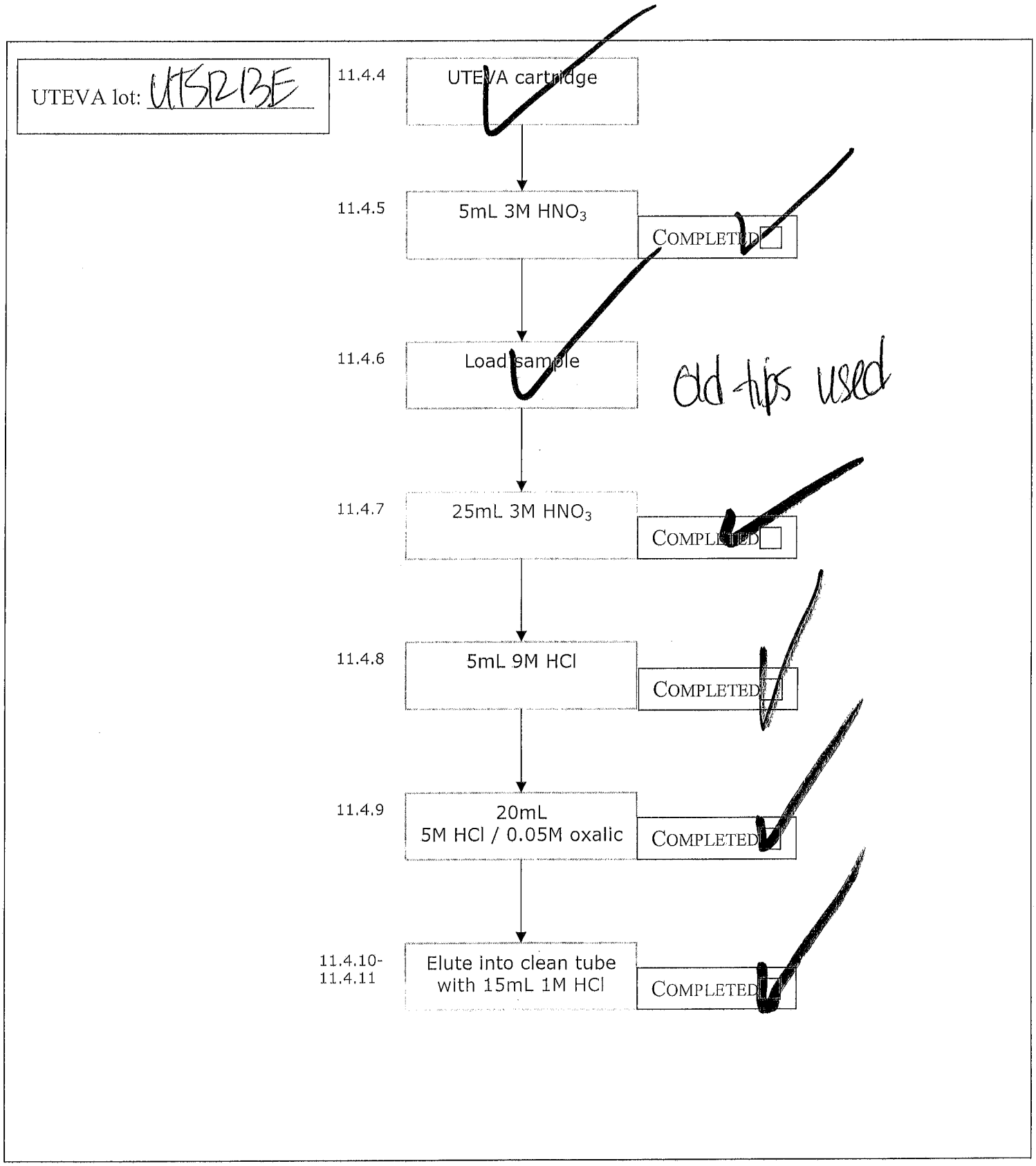
\\Slsvr01\RAD\MasterForms\RAD-0045
Rev(3)

Uranium only via UTEVA

Batch: UNAT Verification

ST-RC-0238

*All rinses should flow at 1 mL/minute (only 3M HNO_3 may be done at 3 mL/minute)



METALS

COVER PAGE
METALS

Lab Name: TestAmerica St. Louis Job Number: 160-9071-1

SDG No.:

Project: START Site in New Mexico

Client Sample ID	Lab Sample ID
SMC-09-20141027-21	160-9071-1

Comments:

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: SMC-09-20141027-21 Lab Sample ID: 160-9071-1

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG ID.:

Matrix: Water Date Sampled: 10/27/2014 10:55

Reporting Basis: WET Date Received: 10/28/2014 09:10

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	ND	2000	220	ug/L			10	6010C
7440-36-0	Antimony	ND	100	37	ug/L			10	6010C
7440-38-2	Arsenic	ND	100	18	ug/L			10	6010C
7440-39-3	Barium	75	500	21	ug/L	J		10	6010C
7440-42-8	Boron	310	500	72	ug/L	J		10	6010C
7440-41-7	Beryllium	ND	50	2.8	ug/L			10	6010C
7440-43-9	Cadmium	ND	50	3.4	ug/L			10	6010C
7440-70-2	Calcium	69000	10000	540	ug/L		B	10	6010C
7440-47-3	Chromium	ND	100	34	ug/L		^	10	6010C
7440-48-4	Cobalt	ND	500	27	ug/L			10	6010C
7440-50-8	Copper	ND	250	21	ug/L			10	6010C
7439-89-6	Iron	240	1000	130	ug/L	J		10	6010C
7439-92-1	Lead	35	100	6.0	ug/L	J	B ^	10	6010C
7439-95-4	Magnesium	9100	10000	510	ug/L	J		10	6010C
7439-96-5	Manganese	ND	150	10	ug/L			10	6010C
7440-02-0	Nickel	ND	400	26	ug/L			10	6010C
7439-98-7	Molybdenum	ND	400	19	ug/L			10	6010C
7440-09-7	Potassium	ND	50000	4600	ug/L			10	6010C
7782-49-2	Selenium	ND	150	21	ug/L			10	6010C
7440-22-4	Silver	ND	100	9.9	ug/L			10	6010C
7723-14-0	Phosphorus	ND	2500	140	ug/L			10	6010C
7440-23-5	Sodium	100000	10000	1100	ug/L			10	6010C
7440-28-0	Thallium	ND	200	24	ug/L			10	6010C
7440-62-2	Vanadium	ND	500	44	ug/L			10	6010C
7440-66-6	Zinc	96	200	83	ug/L	J	B	10	6010C
7440-21-3	Silicon	9400	4000	200	ug/L			10	6010C
7440-31-5	Tin	ND	1000	50	ug/L			10	6010C
7440-32-6	Titanium	ND	200	13	ug/L			10	6010C
7440-61-1	Uranium	1000	5000	260	ug/L	J	B ^	10	6010C
7439-97-6	Mercury	ND	0.20	0.060	ug/L			1	7470A

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS - DISSOLVED

Client Sample ID: SMC-09-20141027-21 Lab Sample ID: 160-9071-1

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG ID.:

Matrix: Water Date Sampled: 10/27/2014 10:55

Reporting Basis: WET Date Received: 10/28/2014 09:10

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	470	4000	450	ug/L	J		10	6010C
7440-36-0	Antimony	ND	200	75	ug/L			10	6010C
7440-38-2	Arsenic	ND	200	36	ug/L			10	6010C
7440-39-3	Barium	74	1000	42	ug/L	J		10	6010C
7440-41-7	Beryllium	ND	100	5.7	ug/L			10	6010C
7440-42-8	Boron	290	1000	140	ug/L	J		10	6010C
7440-43-9	Cadmium	ND	100	6.7	ug/L			10	6010C
7440-70-2	Calcium	55000	20000	1100	ug/L			10	6010C
7440-47-3	Chromium	ND	200	67	ug/L			10	6010C
7440-48-4	Cobalt	ND	1000	54	ug/L			10	6010C
7440-50-8	Copper	56	500	42	ug/L	J	B	10	6010C
7439-89-6	Iron	290	2000	260	ug/L	J		10	6010C
7439-92-1	Lead	ND	200	12	ug/L			10	6010C
7439-95-4	Magnesium	7500	20000	1000	ug/L	J		10	6010C
7439-96-5	Manganese	ND	300	20	ug/L			10	6010C
7439-98-7	Molybdenum	ND	800	38	ug/L			10	6010C
7440-02-0	Nickel	ND	800	51	ug/L			10	6010C
7723-14-0	Phosphorus	ND	5000	280	ug/L			10	6010C
7440-09-7	Potassium	ND	100000	9100	ug/L			10	6010C
7782-49-2	Selenium	ND	300	42	ug/L			10	6010C
7440-21-3	Silicon	8100	8000	390	ug/L			10	6010C
7440-22-4	Silver	ND	200	20	ug/L			10	6010C
7440-23-5	Sodium	81000	20000	2100	ug/L			10	6010C
7440-28-0	Thallium	ND	400	48	ug/L			10	6010C
7440-31-5	Tin	ND	2000	100	ug/L			10	6010C
7440-32-6	Titanium	ND	400	25	ug/L			10	6010C
7440-61-1	Uranium	4000	10000	510	ug/L	J	B	10	6010C
7440-62-2	Vanadium	ND	1000	88	ug/L			10	6010C
7440-66-6	Zinc	ND	400	170	ug/L			10	6010C
7439-97-6	Mercury	ND	1.0	0.30	ug/L			1	7470A

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

ICV Source: ICP ICV_00014 Concentration Units: ug/L

CCV Source: ICP CAL2/CCV_00031

Analyte	ICV 160-156822/5 11/13/2014 16:40				CCV 160-156822/11 11/13/2014 17:02				CCV 160-156822/83 11/13/2014 21:40			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Aluminum	49600		50000	99	49400		50000	99	52100		50000	104
Antimony	1010		1000	101	1020		1000	102	1110		1000	111
Arsenic	4960		5000	99	5090		5000	102	5550		5000	111
Barium	5050		5000	101	5070		5000	101	5420		5000	108
Beryllium	5030		5000	101	5020		5000	100	5200		5000	104
Boron	5150		5000	103	5000		5000	100	4710		5000	94
Cadmium	5100		5000	102	5110		5000	102	5560		5000	111
Calcium	52700		50000	105	51300		50000	103	54400		50000	109
Chromium	5130		5000	103	5100		5000	102	5670		5000	113
Cobalt	5240		5000	105	5140		5000	103	5540		5000	111
Copper	5070		5000	101	5120		5000	102	5600		5000	112
Iron	50000		50000	100	49700		50000	99	49600		50000	99
Lead	5140		5000	103	5130		5000	103	5650		5000	113
Magnesium	50400		50000	101	49200		50000	98	49900		50000	100
Manganese	4990		5000	100	4970		5000	99	4880		5000	98
Molybdenum	1040		1000	104	1030		1000	103	1080		1000	108
Nickel	5140		5000	103	5140		5000	103	5590		5000	112
Phosphorus	5310		5000	106	52000		50000	104	55800		50000	112
Potassium	49300		50000	99	49500		50000	99	54000		50000	108
Selenium	1010		1000	101	1020		1000	102	1120		1000	112
Silicon	5360		5000	107	4980		5000	100	4770		5000	95
Silver	1030		1000	103	1030		1000	103	1100		1000	110
Sodium	49800		50000	100	50000		50000	100	52700		50000	105
Thallium	1040		1000	104	1030		1000	103	1120		1000	112
Tin	5080		5000	102	5110		5000	102	5610		5000	112
Titanium	5020		5000	100	5000		5000	100	5210		5000	104
Uranium	5030		5000	101	5100		5000	102	5690		5000	114
Vanadium	4900		5000	98	5010		5000	100	5030		5000	101
Zinc	5100		5000	102	5130		5000	103	5560		5000	111

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

ICV Source: ICP ICV_00014 Concentration Units: ug/L

CCV Source: ICP CAL2/CCV_00031

Analyte	CCV 160-156822/95 11/13/2014 22:25				CCV 160-156822/107 11/13/2014 23:11							
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Aluminum	51800		50000	104	51500		50000	103				
Antimony	1080		1000	108	1090		1000	109				
Arsenic	5400		5000	108	5450		5000	109				
Barium	5400		5000	108	5380		5000	108				
Beryllium	5160		5000	103	5270		5000	105				
Boron	4770		5000	95	4840		5000	97				
Cadmium	5420		5000	108	5460		5000	109				
Calcium	53000		50000	106	53400		50000	107				
Chromium	5620		5000	112	5700		5000	114				
Cobalt	5390		5000	108	5440		5000	109				
Copper	5450		5000	109	5490		5000	110				
Iron	50500		50000	101	51000		50000	102				
Lead	5500		5000	110	5550		5000	111				
Magnesium	50200		50000	100	50300		50000	101				
Manganese	4930		5000	99	4970		5000	99				
Molybdenum	1050		1000	105	1060		1000	106				
Nickel	5450		5000	109	5490		5000	110				
Phosphorus	54300		50000	109	54800		50000	110				
Potassium	54000		50000	108	53800		50000	108				
Selenium	1080		1000	108	1100		1000	110				
Silicon	4840		5000	97	4900		5000	98				
Silver	1080		1000	108	1090		1000	109				
Sodium	52300		50000	105	51900		50000	104				
Thallium	1090		1000	109	1100		1000	110				
Tin	5480		5000	110	5520		5000	110				
Titanium	5220		5000	104	5220		5000	104				
Uranium	5670		5000	113	5950		5000	119				
Vanadium	5040		5000	101	5040		5000	101				
Zinc	5420		5000	108	5460		5000	109				

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

ICV Source: ICP ICV_00014 Concentration Units: ug/L

CCV Source: ICP CAL2/CCV_00031

Analyte	ICV 160-158045/5 11/18/2014 15:58				CCV 160-158045/11 11/18/2014 16:21				CCV 160-158045/47 11/18/2014 18:47			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Aluminum	49300		50000	99	49500		50000	99	48200		50000	96
Antimony	987		1000	99	1020		1000	102	979		1000	98
Arsenic	4850		5000	97	5090		5000	102	4910		5000	98
Barium	5030		5000	101	5060		5000	101	5040		5000	101
Beryllium	5040		5000	101	5050		5000	101	5070		5000	101
Boron	5060		5000	101	4980		5000	100	4940		5000	99
Cadmium	4960		5000	99	5110		5000	102	4930		5000	99
Calcium	51100		50000	102	51400		50000	103	48900		50000	98
Chromium	4960		5000	99	5080		5000	102	5010		5000	100
Cobalt	5100		5000	102	5160		5000	103	4980		5000	100
Copper	4950		5000	99	5130		5000	103	4940		5000	99
Iron	49800		50000	100	50100		50000	100	50900		50000	102
Lead	5030		5000	101	5170		5000	103	5010		5000	100
Magnesium	49800		50000	100	50100		50000	100	48500		50000	97
Manganese	4970		5000	99	5020		5000	100	4900		5000	98
Molybdenum	1010		1000	101	1030		1000	103	1010		1000	101
Nickel	5010		5000	100	5170		5000	103	5000		5000	100
Phosphorus	5170		5000	103	52000		50000	104	49600		50000	99
Potassium	49100		50000	98	50000		50000	100	50300		50000	101
Selenium	984		1000	98	1030		1000	103	985		1000	98
Silicon	5280		5000	106	5030		5000	101	4850		5000	97
Silver	982		1000	98	1010		1000	101	949		1000	95
Sodium	49200		50000	98	50000		50000	100	48900		50000	98
Thallium	1020		1000	102	1040		1000	104	1000		1000	100
Tin	4950		5000	99	5150		5000	103	5020		5000	100
Titanium	4960		5000	99	4980		5000	100	5050		5000	101
Uranium	4860		5000	97	5080		5000	102	4900		5000	98
Vanadium	4870		5000	97	5030		5000	101	4880		5000	98
Zinc	4950		5000	99	5130		5000	103	5000		5000	100

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

ICV Source: ICP ICV_00014 Concentration Units: ug/L

CCV Source: ICP CAL2/CCV_00031

Analyte	CCV 160-158045/59 11/18/2014 19:34				CCV 160-158045/71 11/18/2014 20:20							
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Aluminum	46600		50000	93	47400		50000	95				
Antimony	973		1000	97	994		1000	99				
Arsenic	4910		5000	98	5020		5000	100				
Barium	4910		5000	98	4960		5000	99				
Beryllium	4890		5000	98	4990		5000	100				
Boron	4780		5000	96	4840		5000	97				
Cadmium	4900		5000	98	5000		5000	100				
Calcium	48300		50000	97	49400		50000	99				
Chromium	5000		5000	100	5120		5000	102				
Cobalt	4960		5000	99	5070		5000	101				
Copper	4910		5000	98	5000		5000	100				
Iron	49700		50000	99	50800		50000	102				
Lead	5020		5000	100	5130		5000	103				
Magnesium	46700		50000	93	48400		50000	97				
Manganese	4750		5000	95	4850		5000	97				
Molybdenum	1010		1000	101	1040		1000	104				
Nickel	4990		5000	100	5110		5000	102				
Phosphorus	49300		50000	99	50400		50000	101				
Potassium	49100		50000	98	49900		50000	100				
Selenium	997		1000	100	1020		1000	102				
Silicon	4660		5000	93	4740		5000	95				
Silver	932		1000	93	945		1000	94				
Sodium	47000		50000	94	47700		50000	95				
Thallium	990		1000	99	1010		1000	101				
Tin	5030		5000	101	5140		5000	103				
Titanium	4910		5000	98	4990		5000	100				
Uranium	4910		5000	98	4970		5000	99				
Vanadium	4690		5000	94	4780		5000	96				
Zinc	4990		5000	100	5110		5000	102				

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

ICV Source: Hg QC Int._00440 Concentration Units: ug/L

CCV Source: Hg QC Int._00440

Analyte	ICV 160-155162/7 11/07/2014 15:04				CCV 160-155162/19 11/07/2014 15:33				CCV 160-155162/31 11/07/2014 16:01			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Mercury	5.22		5.00	104	5.17		5.00	103	5.07		5.00	101

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

ICV Source: Hg QC Int._00440 Concentration Units: ug/L

CCV Source: Hg QC Int._00440

Analyte	CCV 160-155162/43 11/07/2014 16:29				CCV 160-155162/55 11/07/2014 16:58							
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Mercury	5.05		5.00	101	5.10		5.00	102				

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2B-IN
CRQL CHECK STANDARD
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Method: 6010C Instrument ID: ICP6500

Lab Sample ID: CRI 160-156822/7 Concentration Units: ug/L

CRQL Check Standard Source: ICP CAL1/LLC_00019

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Aluminum	200	171	J	86	70-130
Antimony	10.0	11.5		115	70-130
Arsenic	10.0	11.4		114	70-130
Barium	50.0	50.0		100	70-130
Beryllium	5.00	5.20		104	70-130
Boron	50.0	59.8		120	70-130
Cadmium	5.00	5.20		104	70-130
Calcium	1000	1110		111	70-130
Chromium	10.0	9.20	J	92	70-130
Cobalt	50.0	54.9		110	70-130
Copper	25.0	24.4	J	98	70-130
Iron	100	104		104	70-130
Lead	10.0	12.6		126	70-130
Magnesium	1000	1000		100	70-130
Manganese	15.0	14.8	J	99	70-130
Molybdenum	40.0	41.3		103	70-130
Nickel	40.0	44.8		112	70-130
Potassium	5000	4870	J	97	70-130
Selenium	15.0	13.3	J	89	70-130
Phosphorus	250	253		101	70-130
Silver	10.0	10.4		104	70-130
Sodium	1000	994	J	99	70-130
Thallium	20.0	22.5		113	70-130
Silicon	400	381	J	95	70-130
Tin	100	106		106	70-130
Titanium	20.0	19.8	J	99	70-130
Vanadium	50.0	49.5	J	99	70-130
Uranium	500	434	J	87	70-130
Zinc	20.0	21.3		107	70-130

Lab Sample ID: CRI 160-158045/7 Concentration Units: ug/L

CRQL Check Standard Source: ICP CAL1/LLC_00019

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Aluminum	200	190	J	95	70-130

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IIB-IN

2B-IN
CRQL CHECK STANDARD
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Method: 6010C Instrument ID: ICP6500

Lab Sample ID: CRI 160-158045/7 Concentration Units: ug/L

CRQL Check Standard Source: ICP CAL1/LLC_00019

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Antimony	10.0	11.0		110	70-130
Arsenic	10.0	8.50	J	85	70-130
Barium	50.0	50.4		101	70-130
Beryllium	5.00	5.30		106	70-130
Boron	50.0	61.2		122	70-130
Cadmium	5.00	4.90	J	98	70-130
Calcium	1000	1090		109	70-130
Chromium	10.0	7.10	J	71	70-130
Cobalt	50.0	53.5		107	70-130
Copper	25.0	26.1		104	70-130
Iron	100	106		106	70-130
Lead	10.0	9.80	J	98	70-130
Magnesium	1000	992	J	99	70-130
Manganese	15.0	15.2		101	70-130
Molybdenum	40.0	40.5		101	70-130
Nickel	40.0	42.9		107	70-130
Potassium	5000	4890	J	98	70-130
Selenium	15.0	17.5		117	70-130
Phosphorus	250	246	J	98	70-130
Silver	10.0	9.30	J	93	70-130
Sodium	1000	978	J	98	70-130
Thallium	20.0	21.8		109	70-130
Silicon	400	371	J	93	70-130
Tin	100	103		103	70-130
Titanium	20.0	20.6		103	70-130
Vanadium	50.0	47.4	J	95	70-130
Uranium	500	539		108	70-130
Zinc	20.0	20.4		102	70-130

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IIB-IN

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Concentration Units: ug/L

Analyte	RL	ICB 160-156822/6 11/13/2014 16:43		CCB 160-156822/12 11/13/2014 17:06		CCB 160-156822/84 11/13/2014 21:43		CCB 160-156822/96 11/13/2014 22:29	
		Found	C	Found	C	Found	C	Found	C
Aluminum	200	ND		ND		ND		ND	
Antimony	10	ND		ND		ND		ND	
Arsenic	10	3.40	J	ND		ND		3.30	J
Barium	50	ND		ND		ND		ND	
Beryllium	5.0	0.300	J	0.400	J	0.500	J	0.500	J
Boron	50	15.5	J	17.0	J	11.5	J	12.4	J
Cadmium	5.0	ND		ND		0.400	J	ND	
Calcium	1000	ND		ND		ND		ND	
Chromium	10	ND		ND		ND		ND	
Cobalt	50	ND		ND		ND		ND	
Copper	25	ND		ND		ND		ND	
Iron	100	ND		ND		ND		ND	
Lead	10	2.30	J	2.80	J	1.50	J	1.00	J
Magnesium	1000	ND		ND		ND		ND	
Manganese	15	ND		ND		ND		ND	
Molybdenum	40	ND		ND		ND		ND	
Nickel	40	ND		ND		ND		ND	
Phosphorus	250	ND		ND		ND		ND	
Potassium	5000	ND		ND		ND		ND	
Selenium	15	3.60	J	ND		ND		ND	
Silicon	400	ND		ND		ND		ND	
Silver	10	ND		ND		ND		ND	
Sodium	1000	ND		ND		ND		ND	
Thallium	20	ND		ND		ND		2.50	J
Tin	100	ND		ND		ND		ND	
Titanium	20	ND		ND		ND		ND	
Uranium	500	ND		ND		192	J	224	J
Vanadium	50	ND		ND		ND		ND	
Zinc	20	ND		ND		ND		ND	

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Concentration Units: ug/L

Analyte	RL	CCB 160-156822/108 11/13/2014 23:15							
		Found	C	Found	C	Found	C	Found	C
Aluminum	200	ND							
Antimony	10	ND							
Arsenic	10	2.40	J						
Barium	50	ND							
Beryllium	5.0	0.600	J						
Boron	50	12.2	J						
Cadmium	5.0	ND							
Calcium	1000	ND							
Chromium	10	ND							
Cobalt	50	ND							
Copper	25	ND							
Iron	100	ND							
Lead	10	ND							
Magnesium	1000	ND							
Manganese	15	ND							
Molybdenum	40	ND							
Nickel	40	ND							
Phosphorus	250	ND							
Potassium	5000	ND							
Selenium	15	ND							
Silicon	400	ND							
Silver	10	ND							
Sodium	1000	ND							
Thallium	20	ND							
Tin	100	ND							
Titanium	20	ND							
Uranium	500	153	J						
Vanadium	50	ND							
Zinc	20	ND							

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Concentration Units: ug/L

Analyte	RL	ICB 160-158045/6 11/18/2014 16:02		CCB 160-158045/12 11/18/2014 16:25		CCB 160-158045/48 11/18/2014 18:51		CCB 160-158045/60 11/18/2014 19:37	
		Found	C	Found	C	Found	C	Found	C
Aluminum	200	ND		ND		ND		ND	
Antimony	10	4.60	J	ND		ND		ND	
Arsenic	10	ND		ND		ND		ND	
Barium	50	ND		ND		ND		ND	
Beryllium	5.0	0.500	J	0.900	J	0.700	J	0.500	J
Boron	50	24.6	J	23.0	J	12.1	J	19.7	J
Cadmium	5.0	0.400	J	ND		0.400	J	ND	
Calcium	1000	ND		ND		ND		ND	
Chromium	10	ND		ND		ND		ND	
Cobalt	50	ND		ND		ND		ND	
Copper	25	ND		ND		2.40	J	3.40	J
Iron	100	ND		ND		ND		ND	
Lead	10	ND		ND		ND		ND	
Magnesium	1000	ND		ND		ND		ND	
Manganese	15	ND		ND		ND		ND	
Molybdenum	40	ND		ND		ND		ND	
Nickel	40	ND		ND		ND		ND	
Phosphorus	250	ND		ND		ND		ND	
Potassium	5000	ND		ND		ND		ND	
Selenium	15	3.50	J	ND		ND		ND	
Silicon	400	ND		ND		ND		ND	
Silver	10	ND		ND		ND		ND	
Sodium	1000	ND		ND		ND		ND	
Thallium	20	ND		5.00	J	ND		ND	
Tin	100	ND		ND		ND		ND	
Titanium	20	1.90	J	2.10	J	ND		ND	
Uranium	500	57.9	J	35.1	J	165	J	82.4	J
Vanadium	50	ND		ND		ND		ND	
Zinc	20	ND		ND		ND		ND	

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Concentration Units: ug/L

Analyte	RL	CCB 160-158045/72 11/18/2014 20:24							
		Found	C	Found	C	Found	C	Found	C
Aluminum	200	ND							
Antimony	10	ND							
Arsenic	10	ND							
Barium	50	ND							
Beryllium	5.0	0.500	J						
Boron	50	13.0	J						
Cadmium	5.0	ND							
Calcium	1000	ND							
Chromium	10	ND							
Cobalt	50	ND							
Copper	25	ND							
Iron	100	ND							
Lead	10	ND							
Magnesium	1000	ND							
Manganese	15	ND							
Molybdenum	40	ND							
Nickel	40	ND							
Phosphorus	250	ND							
Potassium	5000	ND							
Selenium	15	2.90	J						
Silicon	400	ND							
Silver	10	ND							
Sodium	1000	ND							
Thallium	20	3.20	J						
Tin	100	ND							
Titanium	20	ND							
Uranium	500	174	J						
Vanadium	50	ND							
Zinc	20	ND							

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Concentration Units: ug/L

Analyte	RL	ICB 160-155162/8 11/07/2014 15:07		CCB 160-155162/20 11/07/2014 15:35		CCB 160-155162/32 11/07/2014 16:03		CCB 160-155162/44 11/07/2014 16:32	
		Found	C	Found	C	Found	C	Found	C
Mercury	0.20	ND		ND		ND		ND	

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Concentration Units: ug/L

Analyte	RL	CCB 160-155162/56 11/07/2014 17:01							
		Found	C	Found	C	Found	C	Found	C
Mercury	0.20	ND							

Italicized analytes were not requested for this sequence.

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Concentration Units: ug/L Lab Sample ID: MB 160-154334/1-A

Instrument Code: ICP6500 Batch No.: 156822

CAS No.	Analyte	Concentration	C	Q	Method
7429-90-5	Aluminum	ND			6010C
7440-36-0	Antimony	ND		^	6010C
7440-38-2	Arsenic	ND		^	6010C
7440-39-3	Barium	ND			6010C
7440-41-7	Beryllium	ND			6010C
7440-42-8	Boron	ND			6010C
7440-43-9	Cadmium	ND		^	6010C
7440-70-2	Calcium	87.4	J		6010C
7440-47-3	Chromium	ND		^	6010C
7440-48-4	Cobalt	ND		^	6010C
7440-50-8	Copper	ND		^	6010C
7439-89-6	Iron	ND			6010C
7439-92-1	Lead	1.70	J	^	6010C
7439-95-4	Magnesium	ND			6010C
7439-96-5	Manganese	ND			6010C
7439-98-7	Molybdenum	ND			6010C
7440-02-0	Nickel	ND		^	6010C
7440-09-7	Potassium	ND			6010C
7782-49-2	Selenium	ND		^	6010C
7723-14-0	Phosphorus	ND		^	6010C
7440-22-4	Silver	ND			6010C
7440-23-5	Sodium	ND			6010C
7440-28-0	Thallium	ND		^	6010C
7440-21-3	Silicon	ND			6010C
7440-31-5	Tin	ND		^	6010C
7440-32-6	Titanium	ND			6010C
7440-62-2	Vanadium	ND			6010C
7440-61-1	Uranium	256	J	^	6010C
7440-66-6	Zinc	15.8	J	^	6010C

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Concentration Units: ug/L Lab Sample ID: MB 160-157443/1-A

Instrument Code: ICP6500 Batch No.: 158045

CAS No.	Analyte	Concentration	C	Q	Method
7429-90-5	Aluminum	ND			6010C
7440-36-0	Antimony	ND			6010C
7440-38-2	Arsenic	ND			6010C
7440-39-3	Barium	ND			6010C
7440-41-7	Beryllium	ND			6010C
7440-42-8	Boron	ND			6010C
7440-43-9	Cadmium	ND			6010C
7440-70-2	Calcium	ND			6010C
7440-47-3	Chromium	ND			6010C
7440-48-4	Cobalt	ND			6010C
7440-50-8	Copper	2.10	J		6010C
7439-89-6	Iron	ND			6010C
7439-92-1	Lead	ND			6010C
7439-95-4	Magnesium	ND			6010C
7439-96-5	Manganese	ND			6010C
7439-98-7	Molybdenum	ND			6010C
7440-02-0	Nickel	ND			6010C
7440-09-7	Potassium	ND			6010C
7782-49-2	Selenium	2.50	J		6010C
7723-14-0	Phosphorus	ND			6010C
7440-22-4	Silver	ND			6010C
7440-23-5	Sodium	ND			6010C
7440-28-0	Thallium	ND			6010C
7440-21-3	Silicon	ND			6010C
7440-31-5	Tin	ND			6010C
7440-32-6	Titanium	ND			6010C
7440-62-2	Vanadium	ND			6010C
7440-61-1	Uranium	160	J		6010C
7440-66-6	Zinc	ND			6010C

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Concentration Units: ug/L Lab Sample ID: MB 160-154974/1-A

Instrument Code: HAA2 Batch No.: 155162

CAS No.	Analyte	Concentration	C	Q	Method
7439-97-6	Mercury	ND			7470A

3-IN
METHOD BLANK
METALS - DISSOLVED

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Concentration Units: ug/L Lab Sample ID: LB 160-152600/1-B

Instrument Code: HAA2 Batch No.: 155162

CAS No.	Analyte	Concentration	C	Q	Method
7439-97-6	Mercury	ND			7470A

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Lab Sample ID: ICSA 160-156822/8 Instrument ID: ICP6500

Lab File ID: 111314C1.asc ICS Source: ICPC MIX ICSA_00043

Concentration Units: ug/L

Analyte	True Solution A	Found Solution A	Percent Recovery
Aluminum	**100000**	**99970**	**100**
Antimony		**3.80**	
Arsenic		**1.50**	
Barium		**0.100**	
Beryllium		**0.100**	
Boron		**0.0000**	
Cadmium		**0.0000**	
Calcium	**100000**	**103000**	**103**
Chromium		**0.0000**	
Cobalt		**1.60**	
Copper		**0.0000**	
Iron	**100000**	**99920**	**100**
Lead		**0.0000**	
Magnesium	**100000**	**101100**	**101**
Manganese		**4.30**	
Molybdenum		**0.0000**	
Nickel		**1.20**	
Phosphorus	**100000**	**102700**	**103**
Potassium	**100000**	**99190**	**99**
Selenium		**0.0000**	
Silicon		**0.0000**	
Silver		**1.00**	
Sodium	**100000**	**99230**	**99**
Thallium		**2.10**	
Tin		**0.0000**	
Titanium		**4.00**	
Uranium		**0.0000**	
Vanadium		**0.0000**	
Zinc		**0.0000**	

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Lab Sample ID: ICSAB 160-156822/9 Instrument ID: ICP6500

Lab File ID: 111314C1.asc ICS Source: ICPC MIX AB_00047

Concentration Units: ug/L

Analyte	True Solution AB	Found Solution AB	Found Percent Recovery
Aluminum	**100000**	**98440**	**98**
Antimony	**500**	**495**	**99**
Arsenic	**2500**	**2459**	**98**
Barium	**2500**	**2510**	**100**
Beryllium	**2500**	**2522**	**101**
Boron	**2500**	**2452**	**98**
Cadmium	**2500**	**2489**	**100**
Calcium	**100000**	**96940**	**97**
Chromium	**2500**	**2418**	**97**
Cobalt	**2500**	**2483**	**99**
Copper	**2500**	**2482**	**99**
Iron	**100000**	**97140**	**97**
Lead	**2500**	**2444**	**98**
Magnesium	**100000**	**98350**	**98**
Manganese	**2500**	**2416**	**97**
Molybdenum	**500**	**496**	**99**
Nickel	**2500**	**2447**	**98**
Phosphorus	**100000**	**97480**	**97**
Potassium	**100000**	**98390**	**98**
Selenium	**500**	**493**	**99**
Silicon	**2500**	**2488**	**100**
Silver	**500**	**497**	**99**
Sodium	**100000**	**99170**	**99**
Thallium	**500**	**497**	**99**
Tin	**2500**	**2441**	**98**
Titanium	**2500**	**2473**	**99**
Uranium	**2500**	**2095**	**84**
Vanadium	**2500**	**2433**	**97**
Zinc	**2500**	**2506**	**100**

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Lab Sample ID: ICSA 160-158045/8 Instrument ID: ICP6500

Lab File ID: 111814C1.asc ICS Source: ICPC MIX ICSA_00043

Concentration Units: ug/L

Analyte	True Solution A	Found Solution A	Percent Recovery
Aluminum	**100000**	**99370**	**99**
Antimony		**3.30**	
Arsenic		**0.0000**	
Barium		**0.500**	
Beryllium		**0.100**	
Boron		**0.0000**	
Cadmium		**0.0000**	
Calcium	**100000**	**102700**	**103**
Chromium		**3.10**	
Cobalt		**1.30**	
Copper		**1.30**	
Iron	**100000**	**99750**	**100**
Lead		**0.0000**	
Magnesium	**100000**	**101500**	**102**
Manganese		**4.40**	
Molybdenum		**0.0000**	
Nickel		**1.50**	
Phosphorus	**100000**	**102400**	**102**
Potassium	**100000**	**98970**	**99**
Selenium		**0.0000**	
Silicon		**0.0000**	
Silver		**0.200**	
Sodium	**100000**	**98640**	**99**
Thallium		**0.0000**	
Tin		**0.0000**	
Titanium		**5.10**	
Uranium		**137**	
Vanadium		**0.0000**	
Zinc		**0.0000**	

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Lab Sample ID: ICSAB 160-158045/9 Instrument ID: ICP6500

Lab File ID: 111814C1.asc ICS Source: ICPC MIX AB_00047

Concentration Units: ug/L

Analyte	True Solution AB	Found Solution AB	Found Percent Recovery
Aluminum	**100000**	**97220**	**97**
Antimony	**500**	**495**	**99**
Arsenic	**2500**	**2460**	**98**
Barium	**2500**	**2490**	**100**
Beryllium	**2500**	**2526**	**101**
Boron	**2500**	**2430**	**97**
Cadmium	**2500**	**2490**	**100**
Calcium	**100000**	**96530**	**97**
Chromium	**2500**	**2441**	**98**
Cobalt	**2500**	**2483**	**99**
Copper	**2500**	**2495**	**100**
Iron	**100000**	**97100**	**97**
Lead	**2500**	**2452**	**98**
Magnesium	**100000**	**97690**	**98**
Manganese	**2500**	**2415**	**97**
Molybdenum	**500**	**495**	**99**
Nickel	**2500**	**2455**	**98**
Phosphorus	**100000**	**97490**	**97**
Potassium	**100000**	**98040**	**98**
Selenium	**500**	**495**	**99**
Silicon	**2500**	**2475**	**99**
Silver	**500**	**496**	**99**
Sodium	**100000**	**97410**	**97**
Thallium	**500**	**498**	**100**
Tin	**2500**	**2450**	**98**
Titanium	**2500**	**2451**	**98**
Uranium	**2500**	**2529**	**101**
Vanadium	**2500**	**2402**	**96**
Zinc	**2500**	**2501**	**100**

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

5A-IN
MATRIX SPIKE SAMPLE RECOVERY
METALS

Client ID: SMC-09-20141027-21 MS
Lab ID: 160-9071-1 MS
Lab Name: TestAmerica St. Louis
Job No.: 160-9071-1
SDG No.:
Matrix: Water
Concentration Units: ug/L
% Solids:

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Aluminum	10400		ND		10000	104	75-125		6010C
Antimony	535		ND		500	107	75-125		6010C
Arsenic	1130		ND		1000	113	75-125		6010C
Barium	1160		75	J	1000	108	75-125		6010C
Beryllium	1050		ND		1000	105	75-125		6010C
Boron	2180		310	J	2000	94	75-125		6010C
Cadmium	1120		ND		1000	112	75-125		6010C
Calcium	82900		69000		10000	141	75-125	4	6010C
Chromium	1160		ND		1000	116	75-125	^	6010C
Cobalt	1180		ND		1000	118	75-125		6010C
Copper	1150		ND		1000	115	75-125		6010C
Iron	10500		240	J	10000	103	75-125		6010C
Lead	1200		35	J	1000	117	75-125	^	6010C
Magnesium	18900		9100	J	10000	98	75-125		6010C
Manganese	991		ND		1000	99	75-125		6010C
Molybdenum	539		ND		500	108	75-125		6010C
Nickel	1190		ND		1000	119	75-125		6010C
Potassium	11700	J	ND		10000	117	75-125		6010C
Selenium	581		ND		500	116	75-125		6010C
Phosphorus	1150	J	ND		1000	115	75-125		6010C
Silver	192		ND		200	96	75-125		6010C
Sodium	114000		100000		10000	108	75-125	4	6010C
Thallium	227		ND		200	114	75-125		6010C
Silicon	14600		9400		5000	105	75-125		6010C
Tin	1140		ND		1000	114	75-125		6010C
Titanium	1020		ND		1000	102	75-125		6010C
Vanadium	1010		ND		1000	101	75-125		6010C
Uranium	4460	J	1000	J	1000	345	75-125	F1 ^	6010C
Zinc	1270		96	J	1000	118	75-125		6010C

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VA - IN

5A-IN
MATRIX SPIKE SAMPLE RECOVERY
METALS - DISSOLVED

Client ID: SMC-09-20141027-21 MS
Lab ID: 160-9071-1 MS
Lab Name: TestAmerica St. Louis
Job No.: 160-9071-1
SDG No.:
Matrix: Water
Concentration Units: ug/L
% Solids:

Analyte	SSR C		Sample Result (SR) C		Spike Added (SA)	%R	Control Limit %R	Q	Method
Mercury	24.7		ND		25.0	99	80-120		7470A

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VA - IN

5A-IN
MATRIX SPIKE DUPLICATE SAMPLE RECOVERY
METALS

Client ID: SMC-09-20141027-21 MSD Lab ID: 160-9071-1 MSD

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Matrix: Water Concentration Units: ug/L

% Solids:

Analyte	(SDR)	C	Spike Added (SA)	%R	Control Limit %R	RPD	RPD Limit	Q	Method
Aluminum	10400		10000	104	75-125	0	20		6010C
Antimony	524		500	105	75-125	2	20		6010C
Arsenic	1080		1000	108	75-125	5	20		6010C
Barium	1140		1000	106	75-125	2	20		6010C
Beryllium	1040		1000	104	75-125	1	20		6010C
Boron	2170		2000	93	75-125	1	20		6010C
Cadmium	1060		1000	106	75-125	5	20		6010C
Calcium	80100		10000	114	75-125	3	20	4	6010C
Chromium	1110		1000	111	75-125	4	20	^	6010C
Cobalt	1130		1000	113	75-125	5	20		6010C
Copper	1080		1000	108	75-125	6	20		6010C
Iron	10400		10000	102	75-125	1	20		6010C
Lead	1160		1000	112	75-125	4	20	^	6010C
Magnesium	19200		10000	102	75-125	2	20		6010C
Manganese	1000		1000	100	75-125	1	20		6010C
Molybdenum	519		500	104	75-125	4	20		6010C
Nickel	1130		1000	113	75-125	5	20		6010C
Potassium	12100	J	10000	121	75-125	4	20		6010C
Selenium	591		500	118	75-125	2	20		6010C
Phosphorus	1100	J	1000	110	75-125	4	20		6010C
Silver	192		200	96	75-125	0	20		6010C
Sodium	114000		10000	110	75-125	0	20	4	6010C
Thallium	258		200	129	75-125	13	20	F1	6010C
Silicon	14500		5000	103	75-125	1	20		6010C
Tin	1090		1000	109	75-125	4	20		6010C
Titanium	1020		1000	102	75-125	0	20		6010C
Vanadium	998		1000	100	75-125	1	20		6010C
Uranium	878	J	1000	-14	75-125	134	20	^ F1 F2	6010C
Zinc	1220		1000	113	75-125	4	20		6010C

SDR = Sample Duplicate Result

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VD - IN

5A-IN
MATRIX SPIKE DUPLICATE SAMPLE RECOVERY
METALS - DISSOLVED

Client ID: SMC-09-20141027-21 MSD
Lab ID: 160-9071-1 MSD
Lab Name: TestAmerica St. Louis
Job No.: 160-9071-1
SDG No.:
Matrix: Water
Concentration Units: ug/L
% Solids:

Analyte	(SDR) C		Spike Added (SA)	%R	Control Limit %R	RPD	RPD Limit	Q	Method
Mercury	24.7		25.0	99	80-120	0	20		7470A

SDR = Sample Duplicate Result

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VD - IN

LINEAR RANGE CHECK STANDARD
METALS -

Lab ID: LRC 160-156822/10

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

Sample Matrix: Water LCS Source: ICP CAL3\LRC_00017

Analyte	Water(ug/L)							
	True	Found	C	%R	Limits		Q	Method
Aluminum	100000	102000		102	90	110		6010C
Antimony	2000	2070		103	90	110		6010C
Arsenic	10000	10300		103	90	110		6010C
Barium	10000	10300		103	90	110		6010C
Beryllium	10000	9970		100	90	110		6010C
Boron	10000	10100		101	90	110		6010C
Cadmium	10000	10300		103	90	110		6010C
Calcium	100000	101000		101	90	110		6010C
Chromium	10000	10000		100	90	110		6010C
Cobalt	10000	10200		102	90	110		6010C
Copper	10000	10400		104	90	110		6010C
Iron	100000	99500		100	90	110		6010C
Lead	10000	10200		102	90	110		6010C
Magnesium	100000	101000		101	90	110		6010C
Manganese	10000	10100		101	90	110		6010C
Molybdenum	2000	2060		103	90	110		6010C
Nickel	10000	10200		102	90	110		6010C
Potassium	100000	101000		101	90	110		6010C
Selenium	2000	2050		103	90	110		6010C
Phosphorus	100000	101000		101	90	110		6010C
Silver	2000	2040		102	90	110		6010C
Sodium	100000	102000		102	90	110		6010C
Thallium	2000	2030		102	90	110		6010C
Silicon	10000	10000		100	90	110		6010C
Tin	10000	10200		102	90	110		6010C
Titanium	10000	10000		100	90	110		6010C
Vanadium	10000	10100		101	90	110		6010C
Uranium	10000	10300		103	90	110		6010C
Zinc	10000	10200		102	90	110		6010C

Calculations are performed before rounding to avoid round-off errors in calculated results.

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 160-154334/2-A

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

Sample Matrix: Water LCS Source: PREP 1 and 2_00005

Analyte	Water(ug/L)							
	True	Found	C	%R	Limits		Q	Method
Aluminum	10000	9960		100	80	120		6010C
Antimony	500	505		101	80	120	^	6010C
Arsenic	1000	1030		103	80	120	^	6010C
Barium	1000	1060		106	80	120		6010C
Beryllium	1000	1010		101	80	120		6010C
Boron	2000	1840		92	80	120		6010C
Cadmium	1000	1030		103	80	120	^	6010C
Calcium	10000	10700		107	80	120		6010C
Chromium	1000	1090		109	80	120	^	6010C
Cobalt	1000	1100		110	80	120	^	6010C
Copper	1000	1070		107	80	120	^	6010C
Iron	10000	9780		98	80	120		6010C
Lead	1000	1090		109	80	120	^	6010C
Magnesium	10000	9450		95	80	120		6010C
Manganese	1000	953		95	80	120		6010C
Molybdenum	500	513		103	80	120		6010C
Nickel	1000	1100		110	80	120	^	6010C
Potassium	10000	10200		102	80	120		6010C
Selenium	500	522		104	80	120	^	6010C
Phosphorus	1000	1060		106	80	120	^	6010C
Silver	200	202		101	80	120		6010C
Sodium	10000	10100		101	80	120		6010C
Thallium	200	222		111	80	120	^	6010C
Silicon	5000	4580		92	80	120		6010C
Tin	1000	1050		105	80	120	^	6010C
Titanium	1000	996		100	80	120		6010C
Vanadium	1000	967		97	80	120		6010C
Uranium	1000	1160		116	80	120	^	6010C
Zinc	1000	1110		111	80	120	^	6010C

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

LINEAR RANGE CHECK STANDARD
METALS -

Lab ID: LRC 160-158045/10

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

Sample Matrix: Water LCS Source: ICP CAL3\LRC_00017

Analyte	Water(ug/L)							
	True	Found	C	%R	Limits		Q	Method
Aluminum	100000	101000		101	90	110		6010C
Antimony	2000	2010		100	90	110		6010C
Arsenic	10000	10000		100	90	110		6010C
Barium	10000	10000		100	90	110		6010C
Beryllium	10000	10000		100	90	110		6010C
Boron	10000	9980		100	90	110		6010C
Cadmium	10000	9970		100	90	110		6010C
Calcium	100000	98500		99	90	110		6010C
Chromium	10000	9890		99	90	110		6010C
Cobalt	10000	9870		99	90	110		6010C
Copper	10000	9970		100	90	110		6010C
Iron	100000	99600		100	90	110		6010C
Lead	10000	9920		99	90	110		6010C
Magnesium	100000	100000		100	90	110		6010C
Manganese	10000	9980		100	90	110		6010C
Molybdenum	2000	2000		100	90	110		6010C
Nickel	10000	9890		99	90	110		6010C
Potassium	100000	101000		101	90	110		6010C
Selenium	2000	2010		100	90	110		6010C
Phosphorus	100000	98700		99	90	110		6010C
Silver	2000	1980		99	90	110		6010C
Sodium	100000	99900		100	90	110		6010C
Thallium	2000	1970		99	90	110		6010C
Silicon	10000	10000		100	90	110		6010C
Tin	10000	9910		99	90	110		6010C
Titanium	10000	9970		100	90	110		6010C
Vanadium	10000	9970		100	90	110		6010C
Uranium	10000	9950		100	90	110		6010C
Zinc	10000	9930		99	90	110		6010C

Calculations are performed before rounding to avoid round-off errors in calculated results.

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 160-157443/2-B

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

Sample Matrix: Water LCS Source: PREP 1 and 2_00006

Analyte	Water(ug/L)							
	True	Found	C	%R	Limits		Q	Method
Aluminum	10000	8910		89	80	120		6010C
Antimony	500	489		98	80	120		6010C
Arsenic	1000	932		93	80	120		6010C
Barium	1000	948		95	80	120		6010C
Beryllium	1000	940		94	80	120		6010C
Boron	2000	1810		90	80	120		6010C
Cadmium	1000	950		95	80	120		6010C
Calcium	10000	10100		101	80	120		6010C
Chromium	1000	970		97	80	120		6010C
Cobalt	1000	1030		103	80	120		6010C
Copper	1000	987		99	80	120		6010C
Iron	10000	9700		97	80	120		6010C
Lead	1000	1010		101	80	120		6010C
Magnesium	10000	8830		88	80	120		6010C
Manganese	1000	922		92	80	120		6010C
Molybdenum	500	512		102	80	120		6010C
Nickel	1000	1010		101	80	120		6010C
Potassium	10000	9260		93	80	120		6010C
Selenium	500	479		96	80	120		6010C
Phosphorus	1000	969		97	80	120		6010C
Silver	200	184		92	80	120		6010C
Sodium	10000	8980		90	80	120		6010C
Thallium	200	206		103	80	120		6010C
Silicon	5000	4430		89	80	120		6010C
Tin	1000	1020		102	80	120		6010C
Titanium	1000	970		97	80	120		6010C
Vanadium	1000	896		90	80	120		6010C
Uranium	1000	1130		113	80	120		6010C
Zinc	1000	979		98	80	120		6010C

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 160-154974/2-A

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

Sample Matrix: Water LCS Source: Hg QC Int._00440

Analyte	Water(ug/L)							
	True	Found	C	%R	Limits		Q	Method
Mercury	5.00	5.16		103	80	120		7470A

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 160-154976/2-A

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

Sample Matrix: Water LCS Source: Hg QC Int._00440

Analyte	Water(ug/L)							
	True	Found	C	%R	Limits		Q	Method
Mercury	25.0	26.4		105	80	120		7470A

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

8-IN
ICP-AES AND ICP-MS SERIAL DILUTIONS
METALS

Lab ID: 160-9071-1

SDG No:

Lab Name: TestAmerica St. Louis Job No: 160-9071-1

Matrix: Water Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	Method
Aluminum	ND		ND		NC		6010C
Antimony	ND		ND		NC		6010C
Arsenic	ND		ND		NC		6010C
Barium	75	J	ND		NC		6010C
Beryllium	ND		ND		NC		6010C
Boron	310	J	445	J	NC		6010C
Cadmium	ND		ND		NC		6010C
Calcium	69000		64700		5.9		6010C
Chromium	ND		ND		NC	^	6010C
Cobalt	ND		ND		NC		6010C
Copper	ND		ND		NC		6010C
Iron	240	J	ND		NC		6010C
Lead	35	J	ND		NC	^	6010C
Magnesium	9100	J	8320	J	NC		6010C
Manganese	ND		ND		NC		6010C
Molybdenum	ND		ND		NC		6010C
Nickel	ND		ND		NC		6010C
Potassium	ND		ND		NC		6010C
Selenium	ND		135	J	NC		6010C
Phosphorus	ND		ND		NC		6010C
Silver	ND		ND		NC		6010C
Sodium	100000		96700		6.1		6010C
Thallium	ND		ND		NC		6010C
Silicon	9400		8050	J	NC		6010C
Tin	ND		ND		NC		6010C
Titanium	ND		ND		NC		6010C
Vanadium	ND		ND		NC		6010C
Uranium	1000	J	4830	J	NC	^	6010C
Zinc	96	J	ND		NC		6010C

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIII-IN

8-IN
ICP-AES AND ICP-MS SERIAL DILUTIONS
METALS - DISSOLVED

Lab ID: 160-9071-1

SDG No:

Lab Name: TestAmerica St. Louis Job No: 160-9071-1

Matrix: Water Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	Method
Mercury	ND		ND		NC		7470A

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIII-IN

9-IN
DETECTION LIMITS
METALS

Lab Name: TestAmerica St. Louis Job Number: 160-9071-1

SDG Number:

Matrix: Water Instrument ID: ICP6500

Method: 6010C MDL Date: 03/19/2014 10:27

Prep Method: 3010A

Analyte	Wavelength/ Mass	RL (ug/L)	MDL (ug/L)
Aluminum		200	22.4
Antimony		10	3.74
Arsenic		10	1.78
Barium		50	2.12
Beryllium		5	0.283
Boron		50	7.17
Cadmium		5	0.336
Calcium		1000	54.2
Chromium		10	3.35
Cobalt		50	2.72
Copper		25	2.1
Iron		100	12.8
Lead		10	0.598
Magnesium		1000	50.5
Manganese		15	1
Molybdenum		40	1.92
Nickel		40	2.57
Phosphorus		250	13.8
Potassium		5000	456
Selenium		15	2.08
Silicon		400	19.5
Silver		10	0.994
Sodium		1000	105
Thallium		20	2.38
Tin		100	5.01
Titanium		20	1.27
Uranium		500	25.7
Vanadium		50	4.39
Zinc		20	8.32

9-IN
CALIBRATION BLANK DETECTION LIMITS
METALS

Lab Name: TestAmerica St. Louis Job Number: 160-9071-1

SDG Number:

Matrix: Water Instrument ID: ICP6500

Method: 6010C XMDL Date: 03/19/2014 10:24

Analyte	Wavelength/ Mass	XRL (ug/L)	XMDL (ug/L)
Aluminum		200	22.4
Antimony		10	3.74
Arsenic		10	1.78
Barium		50	2.12
Beryllium		5	0.283
Boron		50	7.17
Cadmium		5	0.336
Calcium		1000	54.2
Chromium		10	3.35
Cobalt		50	2.72
Copper		25	2.1
Iron		100	12.8
Lead		10	0.598
Magnesium		1000	50.5
Manganese		15	1
Molybdenum		40	1.92
Nickel		40	2.57
Phosphorus		250	13.8
Potassium		5000	456
Selenium		15	2.08
Silicon		400	19.5
Silver		10	0.994
Sodium		1000	105
Thallium		20	2.38
Tin		100	5.01
Titanium		20	1.27
Uranium		500	25.7
Vanadium		50	4.39
Zinc		20	8.32

9-IN
DETECTION LIMITS
METALS - DISSOLVED

Lab Name: TestAmerica St. Louis Job Number: 160-9071-1

SDG Number:

Matrix: Water Instrument ID: ICP6500

Method: 6010C MDL Date: 03/19/2014 10:27

Prep Method: 3010A

Analyte	Wavelength/ Mass	RL (ug/L)	MDL (ug/L)
Aluminum		200	22.4
Antimony		10	3.74
Arsenic		10	1.78
Barium		50	2.12
Beryllium		5	0.283
Boron		50	7.17
Cadmium		5	0.336
Calcium		1000	54.2
Chromium		10	3.35
Cobalt		50	2.72
Copper		25	2.1
Iron		100	12.8
Lead		10	0.598
Magnesium		1000	50.5
Manganese		15	1
Molybdenum		40	1.92
Nickel		40	2.57
Phosphorus		250	13.8
Potassium		5000	456
Selenium		15	2.08
Silicon		400	19.5
Silver		10	0.994
Sodium		1000	105
Thallium		20	2.38
Tin		100	5.01
Titanium		20	1.27
Uranium		500	25.7
Vanadium		50	4.39
Zinc		20	8.32

9-IN
CALIBRATION BLANK DETECTION LIMITS
METALS - DISSOLVED

Lab Name: TestAmerica St. Louis Job Number: 160-9071-1

SDG Number:

Matrix: Water Instrument ID: ICP6500

Method: 6010C XMDL Date: 03/19/2014 10:24

Analyte	Wavelength/ Mass	XRL (ug/L)	XMDL (ug/L)
Aluminum		200	22.4
Antimony		10	3.74
Arsenic		10	1.78
Barium		50	2.12
Beryllium		5	0.283
Boron		50	7.17
Cadmium		5	0.336
Calcium		1000	54.2
Chromium		10	3.35
Cobalt		50	2.72
Copper		25	2.1
Iron		100	12.8
Lead		10	0.598
Magnesium		1000	50.5
Manganese		15	1
Molybdenum		40	1.92
Nickel		40	2.57
Phosphorus		250	13.8
Potassium		5000	456
Selenium		15	2.08
Silicon		400	19.5
Silver		10	0.994
Sodium		1000	105
Thallium		20	2.38
Tin		100	5.01
Titanium		20	1.27
Uranium		500	25.7
Vanadium		50	4.39
Zinc		20	8.32

9-IN
DETECTION LIMITS
METALS

Lab Name: TestAmerica St. Louis Job Number: 160-9071-1

SDG Number:

Matrix: Water Instrument ID: HAA2

Method: 7470A MDL Date: 06/28/2011 19:17

Prep Method: 7470A

Analyte	Wavelength/ Mass	RL (ug/L)	MDL (ug/L)
Mercury		0.2	0.06

9-IN
CALIBRATION BLANK DETECTION LIMITS
METALS

Lab Name: TestAmerica St. Louis Job Number: 160-9071-1

SDG Number:

Matrix: Water Instrument ID: HAA2

Method: 7470A XMDL Date: 06/28/2011 19:19

Analyte	Wavelength/ Mass	XRL (ug/L)	XMDL (ug/L)
Mercury		0.2	0.06

9-IN
DETECTION LIMITS
METALS - DISSOLVED

Lab Name: TestAmerica St. Louis Job Number: 160-9071-1

SDG Number:

Matrix: Water Instrument ID: HAA2

Method: 7470A MDL Date: 06/28/2011 19:17

Prep Method: 7470A

Analyte	Wavelength/ Mass	RL (ug/L)	MDL (ug/L)
Mercury		0.2	0.06

9-IN
CALIBRATION BLANK DETECTION LIMITS
METALS - DISSOLVED

Lab Name: TestAmerica St. Louis Job Number: 160-9071-1

SDG Number:

Matrix: Water Instrument ID: HAA2

Method: 7470A XMDL Date: 06/28/2011 19:19

Analyte	Wavelength/ Mass	XRL (ug/L)	XMDL (ug/L)
Mercury		0.2	0.06

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: TestAmerica St. Louis Job Number: 160-9071-1

SDG No.:

ICP-AES Instrument ID: ICP6500 Date: 10/17/2014

Analyte	Wave Length	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	In
Aluminum	396.152														
Antimony	206.833											0.009771		0.000037	
Arsenic	189.042													-0.000092	
Barium	455.403														
Beryllium	313.042														
Bismuth	223.061														
Boron	249.678													-0.000697	
Cadmium	228.802			0.00291							-0.002107				
Calcium	184.006														
Chromium	283.563													0.001797	
Cobalt	228.616														
Copper	217.894														
Iron	259.940														
Lead	220.353		-0.000067										0.0003	0.000015	
Lithium	670.784														
Magnesium	279.806														
Manganese	257.610														
Molybdenum	202.030														
Nickel	221.647														
Phosphorus	177.495														
Potassium	766.490														
Selenium	196.090													-0.000161	
Silicon	251.611														
Silver	328.068														
Sodium	589.592														
Strontium	407.771								0.000051						
Sulfur	182.034														
Thallium	190.856										0.004905				
Thorium	283.231														
Tin	189.989														

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: TestAmerica St. Louis Job Number: 160-9071-1

SDG No.:

ICP-AES Instrument ID: ICP6500 Date: 10/17/2014

Analyte	Wave Length	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	In
Titanium	334.941										0.004905				
Uranium	367.007													0.003929	
Vanadium	290.882		0.00006				0.000458								
Yttrium	371.030														
Zinc	213.856		0.000045										0.001724	0.000154	

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: TestAmerica St. Louis Job Number: 160-9071-1

SDG No.:

ICP-AES Instrument ID: ICP6500 Date: 10/17/2014

Analyte	Wave Length	K	Li	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Se	Si	Sn
Aluminum	396.152					0.039350									
Antimony	206.833														-0.005978
Arsenic	189.042														
Barium	455.403														
Beryllium	313.042														
Bismuth	223.061														
Boron	249.678														
Cadmium	228.802														
Calcium	184.006														
Chromium	283.563				0.000411										
Cobalt	228.616														
Copper	217.894														
Iron	259.940														
Lead	220.353					.001683									
Lithium	670.784														
Magnesium	279.806														
Manganese	257.610														
Molybdenum	202.030														
Nickel	221.647														
Phosphorus	177.495														
Potassium	766.490														
Selenium	196.090				0.000548										
Silicon	251.611														
Silver	328.068														
Sodium	589.592														
Strontium	407.771														
Sulfur	182.034														
Thallium	190.856				0.001127										
Thorium	283.231														
Tin	189.989														

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: TestAmerica St. Louis Job Number: 160-9071-1

SDG No.:

ICP-AES Instrument ID: ICP6500 Date: 10/17/2014

Analyte	Wave Length	K	Li	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Se	Si	Sn
Titanium	334.941				0.001127										
Uranium	367.007														
Vanadium	290.882												0.00354		
Yttrium	371.030														
Zinc	213.856							0.006227							

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: TestAmerica St. Louis Job Number: 160-9071-1

SDG No.:

ICP-AES Instrument ID: ICP6500 Date: 10/17/2014

Analyte	Wave Length	Sr	Th	Ti	Tl	U	V	Y	Zn						
Aluminum	396.152														
Antimony	206.833						-0.001548								
Arsenic	189.042														
Barium	455.403														
Beryllium	313.042			-0.000304											
Bismuth	223.061														
Boron	249.678														
Cadmium	228.802														
Calcium	184.006														
Chromium	283.563		-0.016			0.004988	0.000751								
Cobalt	228.616			0.001621											
Copper	217.894														
Iron	259.940														
Lead	220.353					0.001155									
Lithium	670.784														
Magnesium	279.806		-0.036831												
Manganese	257.610														
Molybdenum	202.030														
Nickel	221.647														
Phosphorus	177.495														
Potassium	766.490														
Selenium	196.090														
Silicon	251.611														
Silver	328.068					0.001663									
Sodium	589.592														
Strontium	407.771														
Sulfur	182.034														
Thallium	190.856		-0.000423	-0.000526											
Thorium	283.231			0.008116		-0.00617									
Tin	189.989														

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: TestAmerica St. Louis Job Number: 160-9071-1

SDG No.:

ICP-AES Instrument ID: ICP6500 Date: 10/17/2014

Analyte	Wave Length	Sr	Th	Ti	Tl	U	V	Y	Zn						
Titanium	334.941														
Uranium	367.007		0.1427												
Vanadium	290.882				0.002273	0.000924									
Yttrium	371.030														
Zinc	213.856														

11-IN
LINEAR RANGES
METALS

Lab Name: TestAmerica St. Louis Job No: 160-9071-1

SDG No.:

Instrument ID: ICP6500 Date: 09/25/2013 10:39

Analyte	Integ. Time (Sec.)	Concentration (mg/L)	Method
Aluminum		90	6010C
Antimony		1.8	6010C
Arsenic		9	6010C
Barium		9	6010C
Beryllium		9	6010C
Boron		9	6010C
Cadmium		9	6010C
Calcium		90	6010C
Chromium		9	6010C
Cobalt		9	6010C
Copper		9	6010C
Iron		90	6010C
Lead		9	6010C
Magnesium		90	6010C
Manganese		9	6010C
Molybdenum		1.8	6010C
Nickel		9	6010C
Potassium		90	6010C
Selenium		1.8	6010C
Phosphorus		90	6010C
Silver		3.6	6010C
Sodium		90	6010C
Thallium		1.8	6010C
Silicon		9	6010C
Tin		9	6010C
Titanium		9	6010C
Vanadium		9	6010C
Uranium		9	6010C
Zinc		9	6010C

11-IN
LINEAR RANGES
METALS

Lab Name: TestAmerica St. Louis Job No: 160-9071-1

SDG No.:

Instrument ID: HAA2 Date: 03/14/2012 13:48

Analyte	Integ. Time (Sec.)	Concentration (ug/L)	Method
Mercury		10	7470A

12-IN
PREPARATION LOG
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Prep Method: 3010A

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight	Initial Volume (mL)	Final Volume (mL)
MB 160-154334/1-A	11/05/2014 13:46	154334		50	50
LCS 160-154334/2-A	11/05/2014 13:46	154334		50	50
160-9071-1	11/05/2014 13:46	154334		50	50
160-9071-1 MS	11/05/2014 13:46	154334		50	50
160-9071-1 MSD	11/05/2014 13:46	154334		50	50

12-IN
PREPARATION LOG
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Prep Method: 3010A

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight	Initial Volume (mL)	Final Volume (mL)
MB 160-157443/1-A	11/17/2014 12:41	157443		50	50
LCS 160-157443/2-B	11/17/2014 12:41	157443		50	50
160-9071-1	11/17/2014 12:48	157443		25	50

12-IN
PREPARATION LOG
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Prep Method: 7470A

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight	Initial Volume (mL)	Final Volume (mL)
MB 160-154974/1-A	11/07/2014 14:14	154974		30	30
LCS 160-154974/2-A	11/07/2014 14:14	154974		30	30
160-9071-1	11/07/2014 14:14	154974		30	30

12-IN
PREPARATION LOG
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Prep Method: 7470A

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight	Initial Volume (mL)	Final Volume (mL)
LB 160-152600/1-B	11/07/2014 14:23	154976		6	30
LCS 160-154976/2-A	11/07/2014 14:23	154976		6	30
160-9071-1	11/07/2014 14:23	154976		6	30
160-9071-1 MS	11/07/2014 14:23	154976		6	30
160-9071-1 MSD	11/07/2014 14:23	154976		6	30

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Instrument ID: ICP6500 Analysis Method: 6010C

Start Date: 11/13/2014 16:24 End Date: 11/14/2014 00:13

Lab Sample Id	D/F	Type	Time	Analytes																										
				Ag	Al	As	B	Ba	Be	Ca	Cd	Co	Cr	Cu	Fe	K	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Se	Si	Sn	Ti	Tl
ICIS 160-156822/1	1		16:24	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
IC 160-156822/2			16:28	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
IC 160-156822/3			16:32	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
IC 160-156822/4			16:36	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICV 160-156822/5	1		16:40	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICB 160-156822/6	1		16:43	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CRI 160-156822/7	1		16:47	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICSA 160-156822/8	1		16:51	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICSAB 160-156822/9	1		16:55	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LRC 160-156822/10	1		16:59	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCV 160-156822/11	1		17:02	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 160-156822/12	1		17:06	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			17:10																											
ZZZZZZ			17:14																											
ZZZZZZ			17:18																											
ZZZZZZ			17:22																											
ZZZZZZ			17:26																											
ZZZZZZ			17:30																											
ZZZZZZ			17:33																											
ZZZZZZ			17:37																											
ZZZZZZ			17:41																											
ZZZZZZ			17:45																											
CCV 160-156822/23			17:49																											
CCB 160-156822/24			17:53																											
ZZZZZZ			17:57																											
ZZZZZZ			18:01																											
ZZZZZZ			18:05																											
ZZZZZZ			18:08																											
ZZZZZZ			18:12																											
ZZZZZZ			18:16																											
ZZZZZZ			18:20																											
ZZZZZZ			18:23																											
ZZZZZZ			18:27																											
ZZZZZZ			18:31																											
CCV 160-156822/35			18:35																											
CCB 160-156822/36			18:39																											
ZZZZZZ			18:43																											
ZZZZZZ			18:47																											
ZZZZZZ			18:50																											
ZZZZZZ			18:54																											
ZZZZZZ			18:58																											
ZZZZZZ			19:02																											

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Instrument ID: ICP6500 Analysis Method: 6010C

Start Date: 11/13/2014 16:24 End Date: 11/14/2014 00:13

Lab Sample Id	D/F	Type	Time	Analytes																										
				Ag	Al	As	B	Ba	Be	Ca	Cd	Co	Cr	Cu	Fe	K	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Se	Si	Sn	Ti	Tl
ZZZZZZ			19:06																											
ZZZZZZ			19:10																											
ZZZZZZ			19:13																											
ZZZZZZ			19:17																											
CCV 160-156822/47			19:21																											
CCB 160-156822/48			19:25																											
ZZZZZZ			19:29																											
ZZZZZZ			19:33																											
ZZZZZZ			19:37																											
ZZZZZZ			19:40																											
ZZZZZZ			19:44																											
ZZZZZZ			19:48																											
ZZZZZZ			19:52																											
ZZZZZZ			19:56																											
ZZZZZZ			20:00																											
ZZZZZZ			20:04																											
CCV 160-156822/59			20:08																											
CCB 160-156822/60			20:11																											
ZZZZZZ			20:15																											
ZZZZZZ			20:19																											
ZZZZZZ			20:23																											
ZZZZZZ			20:27																											
ZZZZZZ			20:30																											
ZZZZZZ			20:34																											
ZZZZZZ			20:38																											
ZZZZZZ			20:42																											
ZZZZZZ			20:45																											
ZZZZZZ			20:49																											
CCV 160-156822/71			20:53																											
CCB 160-156822/72			20:57																											
ZZZZZZ			21:01																											
ZZZZZZ			21:05																											
ZZZZZZ			21:09																											
ZZZZZZ			21:13																											
ZZZZZZ			21:17																											
ZZZZZZ			21:20																											
ZZZZZZ			21:24																											
ZZZZZZ			21:28																											
ZZZZZZ			21:32																											
ZZZZZZ			21:36																											
CCV 160-156822/83	1		21:40	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 160-156822/84	1		21:43	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Instrument ID: ICP6500 Analysis Method: 6010C

Start Date: 11/13/2014 16:24 End Date: 11/14/2014 00:13

Lab Sample Id	D/F	Type	Time	Analytes																								
				Ag	Al	As	B	Ba	Be	Ca	Cd	Co	Cr	Cu	Fe	K	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Se	Si	Sn	Ti	Tl
ZZZZZZ			21:47																									
ZZZZZZ			21:51																									
ZZZZZZ			21:55																									
ZZZZZZ			21:59																									
ZZZZZZ			22:03																									
ZZZZZZ			22:07																									
ZZZZZZ			22:10																									
ZZZZZZ			22:14																									
MB 160-154334/1-A	1	T	22:18	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LCS 160-154334/2-A	1	T	22:22	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCV 160-156822/95	1		22:25	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 160-156822/96	1		22:29	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
160-9071-1	10	T	22:33	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
160-9071-1 SD	50	T	22:37	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
160-9071-1 MS	10	T	22:41	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
160-9071-1 MSD	10	T	22:44	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			22:48																									
ZZZZZZ			22:52																									
ZZZZZZ			22:56																									
ZZZZZZ			23:00																									
ZZZZZZ			23:04																									
ZZZZZZ			23:08																									
CCV 160-156822/107	1		23:11	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 160-156822/108	1		23:15	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			23:19																									
ZZZZZZ			23:23																									
ZZZZZZ			23:27																									
ZZZZZZ			23:31																									
ZZZZZZ			23:35																									
ZZZZZZ			23:38																									
ZZZZZZ			23:42																									
ZZZZZZ			23:46																									
ZZZZZZ			23:50																									
ZZZZZZ			23:54																									
CCV 160-156822/119			23:58																									
CCB 160-156822/120			00:01																									
ZZZZZZ			00:05																									
CCV 160-156822/122			00:09																									
CCB 160-156822/123			00:13																									

Prep Types:
T = Total/NA

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Instrument ID: ICP6500 Analysis Method: 6010C

Start Date: 11/13/2014 16:24 End Date: 11/14/2014 00:13

Lab Sample Id	D/F	Type	Time	Analytes																									
				U	V	Zn																							
CCB 160-156822/123			00:13																										
CCV 160-156822/122			00:09																										
ZZZZZZ			00:05																										
CCB 160-156822/120			00:01																										
CCV 160-156822/119			23:58																										
ZZZZZZ			23:54																										
ZZZZZZ			23:50																										
ZZZZZZ			23:46																										
ZZZZZZ			23:42																										
ZZZZZZ			23:38																										
ZZZZZZ			23:35																										
ZZZZZZ			23:31																										
ZZZZZZ			23:27																										
ZZZZZZ			23:23																										
ZZZZZZ			23:19																										
CCB 160-156822/108	1		23:15	X	X	X																							
CCV 160-156822/107	1		23:11	X	X	X																							
ZZZZZZ			23:08																										
ZZZZZZ			23:04																										
ZZZZZZ			23:00																										
ZZZZZZ			22:56																										
ZZZZZZ			22:52																										
ZZZZZZ			22:48																										
160-9071-1 MSD	10	T	22:44	X	X	X																							
160-9071-1 MS	10	T	22:41	X	X	X																							
160-9071-1 SD	50	T	22:37	X	X	X																							
160-9071-1	10	T	22:33	X	X	X																							
CCB 160-156822/96	1		22:29	X	X	X																							
CCV 160-156822/95	1		22:25	X	X	X																							
LCS 160-154334/2-A	1	T	22:22	X	X	X																							
MB 160-154334/1-A	1	T	22:18	X	X	X																							
ZZZZZZ			22:14																										
ZZZZZZ			22:10																										
ZZZZZZ			22:07																										
ZZZZZZ			22:03																										
ZZZZZZ			21:59																										
ZZZZZZ			21:55																										
ZZZZZZ			21:51																										
ZZZZZZ			21:47																										
CCB 160-156822/84	1		21:43	X	X	X																							
CCV 160-156822/83	1		21:40	X	X	X																							
ZZZZZZ			21:36																										

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Instrument ID: ICP6500 Analysis Method: 6010C

Start Date: 11/13/2014 16:24 End Date: 11/14/2014 00:13

Lab Sample Id	D/F	Type	Time	Analytes																										
				U	V	Zn																								
ZZZZZZ			21:32																											
ZZZZZZ			21:28																											
ZZZZZZ			21:24																											
ZZZZZZ			21:20																											
ZZZZZZ			21:17																											
ZZZZZZ			21:13																											
ZZZZZZ			21:09																											
ZZZZZZ			21:05																											
ZZZZZZ			21:01																											
CCB 160-156822/72			20:57																											
CCV 160-156822/71			20:53																											
ZZZZZZ			20:49																											
ZZZZZZ			20:45																											
ZZZZZZ			20:42																											
ZZZZZZ			20:38																											
ZZZZZZ			20:34																											
ZZZZZZ			20:30																											
ZZZZZZ			20:27																											
ZZZZZZ			20:23																											
ZZZZZZ			20:19																											
ZZZZZZ			20:15																											
CCB 160-156822/60			20:11																											
CCV 160-156822/59			20:08																											
ZZZZZZ			20:04																											
ZZZZZZ			20:00																											
ZZZZZZ			19:56																											
ZZZZZZ			19:52																											
ZZZZZZ			19:48																											
ZZZZZZ			19:44																											
ZZZZZZ			19:40																											
ZZZZZZ			19:37																											
ZZZZZZ			19:33																											
ZZZZZZ			19:29																											
CCB 160-156822/48			19:25																											
CCV 160-156822/47			19:21																											
ZZZZZZ			19:17																											
ZZZZZZ			19:13																											
ZZZZZZ			19:10																											
ZZZZZZ			19:06																											
ZZZZZZ			19:02																											
ZZZZZZ			18:58																											
ZZZZZZ			18:54																											

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Instrument ID: ICP6500 Analysis Method: 6010C

Start Date: 11/13/2014 16:24 End Date: 11/14/2014 00:13

Lab Sample Id	D/F	Type	Time	Analytes																									
				U	V	Zn																							
ZZZZZZ			18:50																										
ZZZZZZ			18:47																										
ZZZZZZ			18:43																										
CCB 160-156822/36			18:39																										
CCV 160-156822/35			18:35																										
ZZZZZZ			18:31																										
ZZZZZZ			18:27																										
ZZZZZZ			18:23																										
ZZZZZZ			18:20																										
ZZZZZZ			18:16																										
ZZZZZZ			18:12																										
ZZZZZZ			18:08																										
ZZZZZZ			18:05																										
ZZZZZZ			18:01																										
ZZZZZZ			17:57																										
CCB 160-156822/24			17:53																										
CCV 160-156822/23			17:49																										
ZZZZZZ			17:45																										
ZZZZZZ			17:41																										
ZZZZZZ			17:37																										
ZZZZZZ			17:33																										
ZZZZZZ			17:30																										
ZZZZZZ			17:26																										
ZZZZZZ			17:22																										
ZZZZZZ			17:18																										
ZZZZZZ			17:14																										
ZZZZZZ			17:10																										
CCB 160-156822/12	1		17:06	X	X	X																							
CCV 160-156822/11	1		17:02	X	X	X																							
LRC 160-156822/10	1		16:59	X	X	X																							
ICSAB 160-156822/9	1		16:55	X	X	X																							
ICSA 160-156822/8	1		16:51	X	X	X																							
CRI 160-156822/7	1		16:47	X	X	X																							
ICB 160-156822/6	1		16:43	X	X	X																							
ICV 160-156822/5	1		16:40	X	X	X																							
IC 160-156822/4			16:36	X	X	X																							
IC 160-156822/3			16:32	X	X	X																							
IC 160-156822/2			16:28	X	X	X																							
ICIS 160-156822/1	1		16:24	X	X	X																							

Prep Types:
T = Total/NA

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Instrument ID: ICP6500 Analysis Method: 6010C

Start Date: 11/18/2014 15:43 End Date: 11/18/2014 22:55

Lab Sample Id	D/F	Type	Time	Analytes																										
				Ag	Al	As	B	Ba	Be	Ca	Cd	Co	Cr	Cu	Fe	K	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Se	Si	Sn	Ti	Tl
ICIS 160-158045/1	1		15:43	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
IC 160-158045/2			15:47	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
IC 160-158045/3			15:51	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
IC 160-158045/4			15:54	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICV 160-158045/5	1		15:58	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICB 160-158045/6	1		16:02	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CRI 160-158045/7	1		16:06	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICSA 160-158045/8	1		16:10	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICSAB 160-158045/9	1		16:14	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LRC 160-158045/10	1		16:17	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCV 160-158045/11	1		16:21	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 160-158045/12	1		16:25	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			16:37																											
ZZZZZZ			16:41																											
ZZZZZZ			16:45																											
ZZZZZZ			16:49																											
ZZZZZZ			16:53																											
ZZZZZZ			16:56																											
ZZZZZZ			17:00																											
ZZZZZZ			17:04																											
ZZZZZZ			17:08																											
ZZZZZZ			17:12																											
CCV 160-158045/23			17:16																											
CCB 160-158045/24			17:19																											
ZZZZZZ			17:23																											
ZZZZZZ			17:27																											
ZZZZZZ			17:31																											
ZZZZZZ			17:35																											
ZZZZZZ			17:38																											
ZZZZZZ			17:42																											
ZZZZZZ			17:46																											
ZZZZZZ			17:50																											
ZZZZZZ			17:53																											
ZZZZZZ			17:57																											
CCV 160-158045/35			18:01																											
CCB 160-158045/36			18:05																											
ZZZZZZ			18:09																											
ZZZZZZ			18:13																											
ZZZZZZ			18:16																											
ZZZZZZ			18:20																											
ZZZZZZ			18:24																											
ZZZZZZ			18:28																											

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Instrument ID: ICP6500 Analysis Method: 6010C

Start Date: 11/18/2014 15:43 End Date: 11/18/2014 22:55

Lab Sample Id	D/F	Type	Time	Analytes																								
				Ag	Al	As	B	Ba	Be	Ca	Cd	Co	Cr	Cu	Fe	K	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Se	Si	Sn	Ti	Tl
ZZZZZZ			18:32																									
ZZZZZZ			18:36																									
ZZZZZZ			18:40																									
ZZZZZZ			18:43																									
CCV 160-158045/47	1		18:47	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 160-158045/48	1		18:51	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			18:55																									
ZZZZZZ			18:59																									
ZZZZZZ			19:03																									
ZZZZZZ			19:06																									
ZZZZZZ			19:10																									
ZZZZZZ			19:14																									
MB 160-157443/1-A	1	T	19:18	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LCS 160-157443/2-B	1	T	19:22	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			19:26																									
ZZZZZZ			19:30																									
CCV 160-158045/59	1		19:34	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 160-158045/60	1		19:37	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			19:41																									
ZZZZZZ			19:45																									
160-9071-1	10	D	19:49	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			19:53																									
ZZZZZZ			19:57																									
ZZZZZZ			20:00																									
ZZZZZZ			20:04																									
ZZZZZZ			20:08																									
ZZZZZZ			20:12																									
ZZZZZZ			20:16																									
CCV 160-158045/71	1		20:20	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 160-158045/72	1		20:24	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			20:28																									
ZZZZZZ			20:31																									
ZZZZZZ			20:35																									
ZZZZZZ			20:39																									
ZZZZZZ			20:43																									
ZZZZZZ			20:47																									
ZZZZZZ			20:50																									
ZZZZZZ			20:54																									
ZZZZZZ			20:58																									
ZZZZZZ			21:02																									
CCV 160-158045/83			21:06																									
CCB 160-158045/84			21:10																									

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Instrument ID: ICP6500 Analysis Method: 6010C

Start Date: 11/18/2014 15:43 End Date: 11/18/2014 22:55

Lab Sample Id	D/F	Type	Time	Analytes																										
				Ag	Al	As	B	Ba	Be	Ca	Cd	Co	Cr	Cu	Fe	K	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Se	Si	Sn	Ti	Tl
ZZZZZZ			21:13																											
ZZZZZZ			21:17																											
ZZZZZZ			21:21																											
ZZZZZZ			21:25																											
ZZZZZZ			21:29																											
ZZZZZZ			21:33																											
ZZZZZZ			21:37																											
ZZZZZZ			21:41																											
ZZZZZZ			21:44																											
ZZZZZZ			21:48																											
CCV 160-158045/95			21:52																											
CCB 160-158045/96			21:56																											
ZZZZZZ			22:00																											
ZZZZZZ			22:04																											
ZZZZZZ			22:08																											
ZZZZZZ			22:12																											
ZZZZZZ			22:16																											
ZZZZZZ			22:19																											
ZZZZZZ			22:23																											
ZZZZZZ			22:27																											
ZZZZZZ			22:31																											
ZZZZZZ			22:35																											
CCV 160-158045/107			22:39																											
CCB 160-158045/108			22:43																											
ZZZZZZ			22:47																											
CCV 160-158045/110			22:51																											
CCB 160-158045/111			22:55																											

Prep Types:
D = Dissolved
T = Total/NA

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Instrument ID: ICP6500 Analysis Method: 6010C

Start Date: 11/18/2014 15:43 End Date: 11/18/2014 22:55

Lab Sample Id	D/F	Type	Time	Analytes																										
				U	V	Zn																								
CCB 160-158045/111			22:55																											
CCV 160-158045/110			22:51																											
ZZZZZZ			22:47																											
CCB 160-158045/108			22:43																											
CCV 160-158045/107			22:39																											
ZZZZZZ			22:35																											
ZZZZZZ			22:31																											
ZZZZZZ			22:27																											
ZZZZZZ			22:23																											
ZZZZZZ			22:19																											
ZZZZZZ			22:16																											
ZZZZZZ			22:12																											
ZZZZZZ			22:08																											
ZZZZZZ			22:04																											
ZZZZZZ			22:00																											
CCB 160-158045/96			21:56																											
CCV 160-158045/95			21:52																											
ZZZZZZ			21:48																											
ZZZZZZ			21:44																											
ZZZZZZ			21:41																											
ZZZZZZ			21:37																											
ZZZZZZ			21:33																											
ZZZZZZ			21:29																											
ZZZZZZ			21:25																											
ZZZZZZ			21:21																											
ZZZZZZ			21:17																											
ZZZZZZ			21:13																											
CCB 160-158045/84			21:10																											
CCV 160-158045/83			21:06																											
ZZZZZZ			21:02																											
ZZZZZZ			20:58																											
ZZZZZZ			20:54																											
ZZZZZZ			20:50																											
ZZZZZZ			20:47																											
ZZZZZZ			20:43																											
ZZZZZZ			20:39																											
ZZZZZZ			20:35																											
ZZZZZZ			20:31																											
ZZZZZZ			20:28																											
CCB 160-158045/72	1		20:24	X	X	X																								
CCV 160-158045/71	1		20:20	X	X	X																								
ZZZZZZ			20:16																											

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Instrument ID: ICP6500 Analysis Method: 6010C

Start Date: 11/18/2014 15:43 End Date: 11/18/2014 22:55

Lab Sample Id	D/F	Type	Time	Analytes																										
				U	V	Zn																								
ZZZZZZ			20:12																											
ZZZZZZ			20:08																											
ZZZZZZ			20:04																											
ZZZZZZ			20:00																											
ZZZZZZ			19:57																											
ZZZZZZ			19:53																											
160-9071-1	10	D	19:49	X	X	X																								
ZZZZZZ			19:45																											
ZZZZZZ			19:41																											
CCB 160-158045/60	1		19:37	X	X	X																								
CCV 160-158045/59	1		19:34	X	X	X																								
ZZZZZZ			19:30																											
ZZZZZZ			19:26																											
LCS 160-157443/2-B	1	T	19:22	X	X	X																								
MB 160-157443/1-A	1	T	19:18	X	X	X																								
ZZZZZZ			19:14																											
ZZZZZZ			19:10																											
ZZZZZZ			19:06																											
ZZZZZZ			19:03																											
ZZZZZZ			18:59																											
ZZZZZZ			18:55																											
CCB 160-158045/48	1		18:51	X	X	X																								
CCV 160-158045/47	1		18:47	X	X	X																								
ZZZZZZ			18:43																											
ZZZZZZ			18:40																											
ZZZZZZ			18:36																											
ZZZZZZ			18:32																											
ZZZZZZ			18:28																											
ZZZZZZ			18:24																											
ZZZZZZ			18:20																											
ZZZZZZ			18:16																											
ZZZZZZ			18:13																											
ZZZZZZ			18:09																											
CCB 160-158045/36			18:05																											
CCV 160-158045/35			18:01																											
ZZZZZZ			17:57																											
ZZZZZZ			17:53																											
ZZZZZZ			17:50																											
ZZZZZZ			17:46																											
ZZZZZZ			17:42																											
ZZZZZZ			17:38																											
ZZZZZZ			17:35																											

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Instrument ID: ICP6500 Analysis Method: 6010C

Start Date: 11/18/2014 15:43 End Date: 11/18/2014 22:55

Lab Sample Id	D/F	Type	Time	Analytes																										
				U	V	Zn																								
ZZZZZZ			17:31																											
ZZZZZZ			17:27																											
ZZZZZZ			17:23																											
CCB 160-158045/24			17:19																											
CCV 160-158045/23			17:16																											
ZZZZZZ			17:12																											
ZZZZZZ			17:08																											
ZZZZZZ			17:04																											
ZZZZZZ			17:00																											
ZZZZZZ			16:56																											
ZZZZZZ			16:53																											
ZZZZZZ			16:49																											
ZZZZZZ			16:45																											
ZZZZZZ			16:41																											
ZZZZZZ			16:37																											
CCB 160-158045/12	1		16:25	X	X	X																								
CCV 160-158045/11	1		16:21	X	X	X																								
LRC 160-158045/10	1		16:17	X	X	X																								
ICSAB 160-158045/9	1		16:14	X	X	X																								
ICSA 160-158045/8	1		16:10	X	X	X																								
CRI 160-158045/7	1		16:06	X	X	X																								
ICB 160-158045/6	1		16:02	X	X	X																								
ICV 160-158045/5	1		15:58	X	X	X																								
IC 160-158045/4			15:54	X	X	X																								
IC 160-158045/3			15:51	X	X	X																								
IC 160-158045/2			15:47	X	X	X																								
ICIS 160-158045/1	1		15:43	X	X	X																								

Prep Types:
D = Dissolved
T = Total/NA

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Instrument ID: HAA2 Analysis Method: 7470A

Start Date: 11/07/2014 14:50 End Date: 11/07/2014 18:18

Lab Sample Id	D/F	Type	Time	Analytes
				Hg
IC 160-155162/1			14:50	X
IC 160-155162/2			14:52	X
IC 160-155162/3			14:54	X
IC 160-155162/4			14:56	X
IC 160-155162/5			14:59	X
IC 160-155162/6			15:01	X
ICV 160-155162/7	1		15:04	X
ICB 160-155162/8	1		15:07	X
MB 160-154974/1-A	1	T	15:09	X
LCS 160-154974/2-A	1	T	15:11	X
ZZZZZZ			15:14	
ZZZZZZ			15:16	
ZZZZZZ			15:19	
ZZZZZZ			15:21	
ZZZZZZ			15:23	
ZZZZZZ			15:26	
ZZZZZZ			15:28	
ZZZZZZ			15:30	
CCV 160-155162/19	1		15:33	X
CCB 160-155162/20	1		15:35	X
ZZZZZZ			15:38	
ZZZZZZ			15:40	
ZZZZZZ			15:42	
ZZZZZZ			15:45	
ZZZZZZ			15:48	
ZZZZZZ			15:50	
ZZZZZZ			15:52	
ZZZZZZ			15:54	
ZZZZZZ			15:56	
ZZZZZZ			15:59	
CCV 160-155162/31	1		16:01	X
CCB 160-155162/32	1		16:03	X
ZZZZZZ			16:06	
ZZZZZZ			16:08	
160-9071-1	1	T	16:11	X
ZZZZZZ			16:13	
ZZZZZZ			16:15	
ZZZZZZ			16:18	
ZZZZZZ			16:20	
ZZZZZZ			16:22	
ZZZZZZ			16:25	
LB 160-152600/1-B	1	D	16:27	X

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Instrument ID: HAA2 Analysis Method: 7470A

Start Date: 11/07/2014 14:50 End Date: 11/07/2014 18:18

Lab Sample Id	D/F	Type	Time	Analytes																								
				Hg																								
CCV 160-155162/43	1		16:29	X																								
CCB 160-155162/44	1		16:32	X																								
LCS 160-154976/2-A	1	T	16:34	X																								
160-9071-1	1	D	16:37	X																								
160-9071-1 SD	5	D	16:39	X																								
160-9071-1 MS	1	D	16:41	X																								
160-9071-1 MSD	1	D	16:44	X																								
ZZZZZZ			16:46																									
ZZZZZZ			16:49																									
ZZZZZZ			16:51																									
ZZZZZZ			16:54																									
ZZZZZZ			16:56																									
CCV 160-155162/55	1		16:58	X																								
CCB 160-155162/56	1		17:01	X																								
ZZZZZZ			17:04																									
ZZZZZZ			17:06																									
ZZZZZZ			17:08																									
ZZZZZZ			17:10																									
ZZZZZZ			17:13																									
ZZZZZZ			17:15																									
ZZZZZZ			17:17																									
ZZZZZZ			17:20																									
ZZZZZZ			17:23																									
ZZZZZZ			17:25																									
CCV 160-155162/67			17:27																									
CCB 160-155162/68			17:30																									
ZZZZZZ			17:32																									
ZZZZZZ			17:34																									
ZZZZZZ			17:36																									
ZZZZZZ			17:39																									
ZZZZZZ			17:42																									
ZZZZZZ			17:44																									
ZZZZZZ			17:46																									
ZZZZZZ			17:49																									
ZZZZZZ			17:51																									
ZZZZZZ			17:53																									
CCV 160-155162/79			17:56																									
CCB 160-155162/80			17:58																									
ZZZZZZ			18:01																									
ZZZZZZ			18:03																									
ZZZZZZ			18:06																									
ZZZZZZ			18:08																									

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Instrument ID: HAA2 Analysis Method: 7470A

Start Date: 11/07/2014 14:50 End Date: 11/07/2014 18:18

Lab Sample Id	D/F	Type	Time	Analytes																								
				Hg																								
ZZZZZZ			18:10																									
ZZZZZZ			18:13																									
CCV 160-155162/87			18:15																									
CCB 160-155162/88			18:18																									

Prep Types:
D = Dissolved
T = Total/NA

FORM XIII-IN

FC 11/14/14

ABATCH: 156822

File: 111314C1

	Pos ID	Rack	Row	Col	Type	Samplename	Comment	Custom ID1	Custom ID2	Custom ID3
1	1001	3	1	1	Unk	160-9053-B-1-A	DF=50 – Mg, Na			
2	1002	3	1	2	Unk	160-9053-B-2-A	DF=50			
3	1003	3	1	3	Unk	160-9053-B-2-A SD	DF=250			
4	1004	3	1	4	Unk	160-9053-B-2-B MS	DF=50 – All			
5	1005	3	1	5	Unk	160-9053-B-2-C MS	DF=50			
6	1006	3	1	6	Unk	160-9053-B-2-A PD	DF=50			
7	1007	3	1	7	Unk	160-9053-B-3-A	DF=50			
8	1008	3	1	8	Unk	160-9053-B-4-A	DF=50			
9	1009	3	1	9	Unk	160-9053-D-6-A	DF=50			
10	1010	3	1	10	Unk	160-9053-D-7-A	DF=50 – Ca, Mg, Na			
11	1011	3	1	11	Unk	160-9053-D-10-A	DF=50			
12	1012	3	1	12	Unk	~~160-9053-D-12-A~~	~~DF=50~~			
13	1013	3	1	13	Unk	160-9053-D-12-B M	DF=50			
14	1014	3	1	14	Unk	~~160-9053-D-12-C M~~	~~DF=50~~			
15	1015	3	1	15	Unk	MB 160-155544/1-A	– All			
16	1016	3	2	1	Unk	~~LCS 160-155544/2-~~	rerun			
17	1017	3	2	2	Unk	LCSD 160-155544/3				
18	1018	3	2	3	Unk	160-9030-G-4-F	DF=10 – All			
19	1019	3	2	4	Unk	160-9030-G-4-F SD	DF=50			
20	1020	3	2	5	Unk	160-9030-G-5-D	DF=25			
21	1021	3	2	6	Unk	MB 160-154847/1-A				
22	1022	3	2	7	Unk	LCS 160-154847/2-				
23	1023	3	2	8	Unk	160-9005-F-1-C	DF=10			
24	1024	3	2	9	Unk	160-9005-F-2-C	DF=10			
25	1025	3	2	10	Unk	160-9005-F-3-C	DF=10			
26	1026	3	2	11	Unk	160-9005-F-4-G	DF=50			
27	1027	3	2	12	Unk	160-9005-F-4-G SD	DF=50 – All			
28	1028	3	2	13	Unk	160-9005-F-4-H MS	DF=10			
29	1029	3	2	14	Unk	160-9005-F-4-I MSD	DF=10			
30	1030	3	2	15	Unk	160-8922-C-1-H	DF=20			
31	1031	3	3	1	Unk	160-9069-E-1-E	DF=10			
32	1032	3	3	2	Unk	160-9069-E-2-C	DF=10			
33	1033	3	3	3	Unk	160-9069-E-3-F	DF=10			
34	1034	3	3	4	Unk	160-8955-A-4-B				
35	1035	3	3	5	Unk	160-8955-A-10-B				
36	1036	3	3	6	Unk	160-8955-A-16-B				
37	1037	3	3	7	Unk	240-43773-K-1-A	DF=50			
38	1038	3	3	8	Unk	LCSD 160-154847/1				
39	1039	3	3	9	Unk	MB 160-156239/1-A				
40	1040	3	3	10	Unk	LCSSRM 160-15623	DF=2			
41	1041	3	3	11	Unk	LCDSRM 160-15623	DF=2			
42	1042	3	3	12	Unk	160-9030-C-1-AB	DF=5			
43	1043	3	3	13	Unk	160-9030-C-1-AB S	DF=25			
44	1044	3	3	14	Unk	160-9030-C-1-AC M	DF=5 – All			
45	1045	3	3	15	Unk	160-9030-C-1-AD M	DF=5			
46	1046	3	4	1	Unk	160-9030-B-2-J	DF=5			
47	1047	3	4	2	Unk	160-9030-B-3-X	DF=5			
48	1048	3	4	3	Unk	160-9069-B-4-K	DF=5			
49	1049	3	4	4	Unk	160-9069-B-5-O	DF=5			
50	1050	3	4	5	Unk	160-9069-C-6-I	DF=5			
51	1051	3	4	6	Unk	LB 160-155980/1-A				
52	1052	3	4	7	Unk	LCS 160-155980/2-				
53	1053	3	4	8	Unk	160-9144-A-1-B				
54	1054	3	4	9	Unk	160-9144-A-1-B SD	DF=5 – All			
55	1055	3	4	10	Unk	160-9144-A-1-C MS				
56	1056	3	4	11	Unk	160-9144-A-1-D MS				
57	1057	3	4	12	Unk	160-9115-A-1-F				
58	1058	3	4	13	Unk	~~160-9115-A-2-B~~				
59	1059	3	4	14	Unk	~~MB 160-155952/1-A~~				
60	1060	3	4	15	Unk	LCS 160-155952/2-				
61	1061	3	5	1	Unk	160-9053-B-8-E	DF=5			
62	1062	3	5	2	Unk	160-9053-B-9-F	DF=5			
63	1063	3	5	3	Unk	~~160-9053-A-11-C~~	~~DF=5~~			

~~reads re-extract~~ ~~MS/MSD not spiked~~ – reads re-extract

	Pos ID	Rack	Row	Col	Type	Samplename	Comment	Custom ID1	Custom ID2	Custom ID3
64	1064	3	5	4	Unk	~~160-9053-B-13-P~~	~~DF=5~~			
65	1065	3	5	5	Unk	160-9053-B-13-P SD	DF=25			
66	1066	3	5	6	Unk	160-9053-B-13-Q M	DF=5			
67	1067	3	5	7	Unk	160-9053-B-13-R M	DF=5			
68	1068	3	5	8	Unk	~~160-9053-B-13-P PD~~	~~DF=5~~			
69	1069	3	5	9	Unk	MB 160-154334/1-A				
70	1070	3	5	10	Unk	LCS 160-154334/2-				
71	1071	3	5	11	Unk	160-9071-B-1-A	DF=10			
72	1072	3	5	12	Unk	160-9071-B-1-A SD	DF=50			
73	1073	3	5	13	Unk	160-9071-B-1-B MS	DF=10			
74	1074	3	5	14	Unk	160-9071-B-1-C MS	DF=10			
75	1075	3	5	15	Unk	~~MB 160-154703/1-A~~				
76	1076	3	6	1	Unk	LCS 160-154703/2-				
77	1077	3	6	2	Unk	160-8836-A-1-F	DF=50			
78	1078	3	6	3	Unk	160-8836-A-2-D	DF=50			
79	1079	3	6	4	Unk	160-8836-A-3-D	DF=50			
80	1080	3	6	5	Unk	160-8836-A-4-D	DF=50			
81	1081	3	6	6	Unk	160-8836-A-5-D	DF=50			
82	1082	3	6	7	Unk	160-8836-A-6-D	DF=50			
83	1083	3	6	8	Unk	160-8836-A-7-D	DF=50			
84	1084	3	6	9	Unk	160-8836-A-8-D	DF=50			
85	1085	3	6	10	Unk	160-8836-A-9-D	DF=50			
86	1086	3	6	11	Unk	160-8836-A-10-D	DF=50			
87	1087	3	6	12	Unk	160-8836-A-11-D	DF=50			
88	1088	3	6	13	Unk	160-8836-A-12-D	DF=50			
89	1089	3	6	14	Unk	160-8836-A-13-D	DF=50			
90	1090	3	6	15	Unk	160-8836-A-14-D	DF=50			
91	2001	4	1	1	Unk	~~160-8836-A-16-D~~	~~DF=50~~			

All

Nulls (c_ext)

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	11/13/2014 16:39:56	11/13/2014 16:39:56	Linear	1/Conc	-0.000471	0.946496	0.000000	1.000000
Al 396.152 { 85}	11/13/2014 16:39:56	11/13/2014 16:39:56	Linear	1/Conc	-0.001029	0.185730	0.000000	1.000000
As 189.042 {478}	11/13/2014 16:39:56	11/13/2014 16:39:56	Linear	1/Conc	-0.000071	0.046883	0.000000	1.000000
B 249.678 {135}	11/13/2014 16:39:56	11/13/2014 16:39:56	Linear	1/Conc	0.000991	0.172283	0.000000	1.000000
Ba 455.403 { 74}	11/13/2014 16:39:56	11/13/2014 16:39:56	Linear	1/Conc	0.032018	14.913122	0.000000	1.000000
Be 313.042 {108}	11/13/2014 16:39:56	11/13/2014 16:39:56	Linear	1/Conc	0.001468	20.932547	0.000000	1.000000
Bi 223.061 {451}	11/13/2014 16:39:56	11/13/2014 16:39:56	Linear	1/Conc	0.000219	0.049354	0.000000	1.000000
Ca 184.006 {483}	11/13/2014 16:39:56	11/13/2014 16:39:56	Linear	1/Conc	-0.000429	0.107353	0.000000	1.000000
Cd 228.802 {447}	11/13/2014 16:39:56	11/13/2014 16:39:56	Linear	1/Conc	-0.000273	0.851154	0.000000	1.000000
Co 228.616 {448}	11/13/2014 16:39:56	11/13/2014 16:39:56	Linear	1/Conc	0.000060	0.342896	0.000000	1.000000
Cr 283.563 {119}	11/13/2014 16:39:56	11/13/2014 16:39:56	Linear	1/Conc	0.001013	0.147610	0.000000	1.000000
Cu 217.894 {455}	11/13/2014 16:39:56	11/13/2014 16:39:56	Linear	1/Conc	0.000302	0.065496	0.000000	1.000000
Fe 259.940 {130}	11/13/2014 16:39:56	11/13/2014 16:39:56	Linear	1/Conc	0.000054	0.328895	0.000000	1.000000
K 766.490 { 44}	11/13/2014 16:39:56	11/13/2014 16:39:56	Linear	1/Conc	0.022415	0.149021	0.000000	1.000000
Li 670.784 { 50}	11/13/2014 16:39:56	11/13/2014 16:39:56	Linear	1/Conc	0.007515	3.772447	0.000000	1.000000
Mg 279.806 {121}	11/13/2014 16:39:56	11/13/2014 16:39:56	Linear	1/Conc	0.000524	0.051348	0.000000	1.000000
Mn 257.610 {131}	11/13/2014 16:39:56	11/13/2014 16:39:56	Linear	1/Conc	0.000619	1.828817	0.000000	1.000000
Mo 202.030 {467}	11/13/2014 16:39:56	11/13/2014 16:39:56	Linear	1/Conc	0.000084	0.328724	0.000000	1.000000
Na 589.592 { 57}	11/13/2014 16:39:56	11/13/2014 16:39:56	Linear	1/Conc	-0.036413	0.533536	0.000000	1.000000
Ni 221.647 {452}	11/13/2014 16:39:56	11/13/2014 16:39:56	Linear	1/Conc	0.000247	0.518471	0.000000	1.000000
P 177.495 {490}	11/13/2014 16:39:56	11/13/2014 16:39:56	Linear	1/Conc	-0.000010	0.059869	0.000000	1.000000
Pb 220.353 {453}	11/13/2014 16:39:56	11/13/2014 16:39:56	Linear	1/Conc	-0.000502	0.094262	0.000000	1.000000
S 182.034 {485}	11/13/2014 16:39:56	11/13/2014 16:39:56	Linear	1/Conc	0.000313	0.025642	0.000000	1.000000
Sb 206.833 {463}	11/13/2014 16:39:56	11/13/2014 16:39:56	Linear	1/Conc	-0.000051	0.058354	0.000000	1.000000
Se 196.090 {472}	11/13/2014 16:39:56	11/13/2014 16:39:56	Linear	1/Conc	0.000104	0.034705	0.000000	1.000000
Si 251.611 {134}	11/13/2014 16:39:56	11/13/2014 16:39:56	Linear	1/Conc	0.005321	0.094328	0.000000	1.000000
Sn 189.989 {478}	11/13/2014 16:39:56	11/13/2014 16:39:56	Linear	1/Conc	0.000123	0.112570	0.000000	1.000000
Sr 407.771 { 83}	11/13/2014 16:39:56	11/13/2014 16:39:56	Linear	1/Conc	-0.005153	24.310925	0.000000	1.000000
Th 283.231 {119}	11/13/2014 16:39:56	11/13/2014 16:39:56	Linear	1/Conc	0.002387	0.099294	0.000000	1.000000
Ti 334.941 {101}	11/13/2014 16:39:56	11/13/2014 16:39:56	Linear	1/Conc	0.005800	1.505726	0.000000	1.000000
Tl 190.856 {477}	11/13/2014 16:39:56	11/13/2014 16:39:56	Linear	1/Conc	-0.000318	0.062230	0.000000	1.000000
U 367.007 { 92}	11/13/2014 16:39:56	11/13/2014 16:39:56	Linear	1/Conc	0.205389	0.056602	0.000000	1.000000
V 290.882 {116}	11/13/2014 16:39:56	11/13/2014 16:39:56	Linear	1/Conc	0.002689	0.308455	0.000000	1.000000
Y 371.030 { 91}*	11/13/2014 16:39:56	11/13/2014 16:39:56	Linear	1/Conc	1.000000	0.000000	0.000000	1.000000
Zn 213.856 {458}	11/13/2014 16:39:56	11/13/2014 16:39:56	Linear	1/Conc	0.000373	0.449673	0.000000	1.000000

Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.999395	0.000258	0.000850	0.002833	OK.	1.000000	0.000000	1	0
Al 396.152 { 85}	0.999988	0.000220	0.008963	0.029876	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999410	0.000028	0.001913	0.006378	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999159	0.000386	0.002891	0.009638	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999951	0.005739	0.000159	0.000531	OK.	1.000000	0.000000	1	0
Be 313.042 {108}	0.999762	0.005593	0.000038	0.000128	OK.	1.000000	0.000000	1	0
Bi 223.061 {451}	0.999158	0.000158	0.003113	0.010377	OK.	1.000000	0.000000	1	0
Ca 184.006 {483}	0.999100	0.002503	0.000841	0.002803	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.999201	0.000417	0.000177	0.000591	OK.	1.000000	0.000000	1	0
Co 228.616 {448}	0.999040	0.000584	0.000351	0.001170	OK.	1.000000	0.000000	1	0
Cr 283.563 {119}	0.999275	0.000098	0.001115	0.003717	OK.	1.000000	0.000000	1	0
Cu 217.894 {455}	0.999136	0.000075	0.002180	0.007268	OK.	1.000000	0.000000	1	0
Fe 259.940 {130}	0.999950	0.000568	0.001535	0.005117	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999981	0.001149	0.025521	0.085071	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999997	0.000377	0.001027	0.003424	OK.	1.000000	0.000000	1	0
Mg 279.806 {121}	0.999955	0.000267	0.010140	0.033799	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999962	0.000337	0.000267	0.000890	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999308	0.000191	0.000328	0.001094	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999995	0.000909	0.007104	0.023679	OK.	1.000000	0.000000	1	0
Ni 221.647 {452}	0.998928	0.000833	0.000319	0.001064	OK.	1.000000	0.000000	1	0
P 177.495 {490}	0.998768	0.000815	0.001517	0.005058	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.998920	0.000076	0.001471	0.004902	OK.	1.000000	0.000000	1	0
S 182.034 {485}	0.999574	0.000931	0.003367	0.011224	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999399	0.000016	0.002326	0.007753	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.999270	0.000013	0.002944	0.009815	OK.	1.000000	0.000000	1	0
Si 251.611 {134}	0.999951	0.000103	0.005300	0.017666	OK.	1.000000	0.000000	1	0
Sn 189.989 {478}	0.999043	0.000271	0.000725	0.002418	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999828	0.005524	0.000062	0.000208	OK.	1.000000	0.000000	1	0
Th 283.231 {119}	0.999539	0.000236	0.003865	0.012884	OK.	1.000000	0.000000	1	0
Ti 334.941 {101}	0.999982	0.000223	0.000683	0.002275	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.998728	0.000035	0.001663	0.005543	OK.	1.000000	0.000000	1	0
U 367.007 { 92}	0.999082	0.000356	0.017353	0.057845	OK.	1.000000	0.000000	1	0
V 290.882 {116}	0.999950	0.000120	0.002539	0.008464	OK.	1.000000	0.000000	1	0
Y 371.030 { 91}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 213.856 {458}	0.999079	0.000478	0.000198	0.000662	OK.	1.000000	0.000000	1	0

Sample Name: CALBLK1 Acquired: 11/13/2014 16:24:40 Type: Cal
Method: 2014v3(v292) Mode: IR Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.0005**	**-.0010**	**-.0001**	**.0010**	**.0320**	**.0015**	**.0002**	**-.0004**	**-.0003**
Stddev	.0001	.0022	.0001	.0004	.0013	.0006	.0001	.0000	.0002
%RSD	24.51	210.4	101.2	35.96	3.957	39.89	29.90	4.368	74.30
#1	-.0005	-.0030	.0000	.0012	.0328	.0009	.0003	-.0004	-.0001
#2	-.0004	.0012	-.0002	.0012	.0305	.0014	.0002	-.0005	-.0005
#3	-.0006	-.0013	.0000	.0006	.0327	.0021	.0002	-.0004	-.0003

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.0001**	**.0010**	**.0003**	**.0001**	**.0224**	**.0075**	**.0005**	**.0006**	**.0001**
Stddev	.0001	.0001	.0001	.0002	.0014	.0023	.0005	.0006	.0001
%RSD	159.5	14.07	44.56	376.9	6.414	31.05	97.45	89.68	87.27
#1	.0000	.0010	.0003	.0003	.0227	.0067	.0010	.0001	.0000
#2	.0001	.0009	.0002	-.0001	.0209	.0101	.0005	.0005	.0001
#3	.0001	.0012	.0004	.0000	.0237	.0057	.0000	.0012	.0002

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.0364**	**.0002**	**.0000**	**-.0005**	**.0003**	**-.0001**	**.0001**	**.0053**	**.0001**
Stddev	.0057	.0002	.000	.0002	.0001	.0002	.0001	.0007	.0001
%RSD	15.78	76.85	1361.	36.29	35.05	334.3	76.87	12.44	41.47
#1	-.0406	.0003	.0001	-.0004	.0004	.0001	.0002	.0050	.0001
#2	-.0299	.0000	-.0002	-.0007	.0002	-.0001	.0001	.0049	.0001
#3	-.0388	.0004	.0001	-.0004	.0003	-.0002	.0000	.0061	.0002

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.0052**	**.0024**	**.0058**	**-.0003**	**.2054**	**.0027**	**.0004**
Stddev	.0016	.0003	.0005	.0001	.0140	.0010	.0001
%RSD	30.75	11.28	8.980	23.08	6.796	38.65	22.05
#1	-.0042	.0023	.0054	-.0004	.1977	.0016	.0005
#2	-.0043	.0022	.0064	-.0003	.1970	.0029	.0003
#3	-.0070	.0027	.0056	-.0003	.2215	.0036	.0004

Sample Name: CALBLK1 Acquired: 11/13/2014 16:24:40 Type: Cal
Method: 2014v3(v292) Mode: IR Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_3710
Units	Cts/S
Avg	3666.1
Stddev	246.2
%RSD	6.7154
#1	3783.4
#2	3831.7
#3	3383.2

Sample Name: CAL 1 Acquired: 11/13/2014 16:28:35 Type: Cal
Method: 2014v3(v292) Mode: IR Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.0089	.0331	.0004	.0096	.7791	.1098	.0106	.1201	.0040
Stddev	.0006	.0016	.0000	.0010	.0046	.0005	.0002	.0010	.0000
%RSD	6.281	4.735	8.697	10.62	.5923	.4322	1.743	.8146	.8549
#1	.0083	.0343	.0005	.0087	.7738	.1101	.0107	.1190	.0041
#2	.0094	.0337	.0005	.0095	.7814	.1101	.0106	.1208	.0040
#3	.0091	.0313	.0004	.0107	.7822	.1092	.0104	.1206	.0040

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.0189	.0024	.0020	.0342	.7424	.2045	.0515	.0282	.0137
Stddev	.0002	.0001	.0002	.0006	.0084	.0018	.0004	.0003	.0002
%RSD	1.271	3.604	8.352	1.893	1.131	.8621	.8043	1.169	1.622
#1	.0186	.0024	.0018	.0336	.7365	.2035	.0514	.0280	.0136
#2	.0191	.0025	.0020	.0349	.7387	.2066	.0511	.0286	.0136
#3	.0189	.0024	.0020	.0341	.7520	.2035	.0519	.0280	.0140

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.4998	.0232	.0153	.0008	.1323	.0005	.0006	.0411	.0120
Stddev	.0035	.0002	.0002	.0001	.0012	.0001	.0001	.0008	.0002
%RSD	.6917	.8285	1.466	16.55	.9109	24.37	11.81	1.967	1.834
#1	.5017	.0232	.0151	.0008	.1309	.0005	.0006	.0419	.0118
#2	.5019	.0230	.0154	.0010	.1330	.0004	.0007	.0403	.0122
#3	.4958	.0234	.0155	.0007	.1329	.0007	.0006	.0413	.0122

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.1196	.0210	.0357	.0011	.2293	.0179	.0102
Stddev	.0018	.0005	.0025	.0002	.0029	.0006	.0000
%RSD	1.522	2.375	6.979	16.51	1.270	3.083	.4578
#1	.1177	.0205	.0380	.0009	.2260	.0180	.0102
#2	.1213	.0210	.0361	.0013	.2306	.0173	.0102
#3	.1199	.0215	.0331	.0012	.2314	.0184	.0101

Sample Name: CAL 1 Acquired: 11/13/2014 16:28:35 Type: Cal
Method: 2014v3(v292) Mode: IR Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_3710
Units	Cts/S
Avg	3713.6
Stddev	19.0
%RSD	.51224
#1	3726.1
#2	3722.9
#3	3691.7

Sample Name: Cal 2 Acquired: 11/13/2014 16:32:30 Type: Cal
Method: 2014v3(v292) Mode: IR Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1.001	9.247	.2456	.8637	75.65	107.9	.2611	5.677	4.500
Stddev	.013	.028	.0025	.0016	.24	1.6	.0024	.064	.044
%RSD	1.312	.3048	1.025	.1866	.3124	1.439	.9300	1.131	.9779
#1	.9977	9.278	.2453	.8648	75.90	106.3	.2611	5.672	4.503
#2	1.015	9.239	.2482	.8644	75.60	109.4	.2635	5.743	4.542
#3	.9894	9.223	.2432	.8618	75.43	107.8	.2587	5.615	4.455

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1.823	.7869	.3471	16.68	7.488	18.86	2.593	9.257	.3459
Stddev	.019	.0093	.0031	.10	.020	.04	.010	.027	.0036
%RSD	1.044	1.177	.8950	.5978	.2625	.2011	.3754	.2880	1.028
#1	1.822	.7836	.3475	16.73	7.501	18.90	2.598	9.284	.3456
#2	1.842	.7974	.3499	16.74	7.499	18.85	2.599	9.255	.3496
#3	1.804	.7798	.3437	16.56	7.466	18.83	2.582	9.231	.3425

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	26.76	2.761	3.204	.5014	1.334	.0620	.0365	.4812	.5975
Stddev	.06	.027	.030	.0047	.012	.0006	.0004	.0014	.0067
%RSD	.2109	.9781	.9240	.9388	.9209	1.046	1.177	.2961	1.122
#1	26.82	2.761	3.200	.5017	1.332	.0617	.0361	.4828	.5974
#2	26.73	2.788	3.235	.5060	1.347	.0627	.0370	.4800	.6043
#3	26.71	2.734	3.176	.4966	1.323	.0615	.0364	.4807	.5909

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	124.8	.5213	7.599	.0679	.5549	1.572	2.409
Stddev	.8	.0073	.028	.0006	.0049	.003	.024
%RSD	.6564	1.401	.3632	.8997	.8829	.1818	.9948
#1	125.5	.5195	7.618	.0681	.5519	1.573	2.406
#2	124.9	.5293	7.611	.0683	.5606	1.573	2.434
#3	123.9	.5151	7.567	.0672	.5523	1.568	2.386

Sample Name: Cal 2 Acquired: 11/13/2014 16:32:30 Type: Cal
Method: 2014v3(v292) Mode: IR Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_3710
Units	Cts/S
Avg	3540.5
Stddev	35.6
%RSD	1.0044
#1	3542.6
#2	3503.9
#3	3574.9

Sample Name: Cal 3 Acquired: 11/13/2014 16:36:14 Type: Cal
Method: 2014v3(v292) Mode: IR Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1.862**	**18.64**	**.4572**	**1.713**	**148.1**	**206.0**	**.4792**	**10.41**	**8.277**
Stddev	.068	.08	.0107	.011	.5	1.4	.0117	.23	.196
%RSD	3.659	.4170	2.337	.6420	.3569	.6923	2.443	2.171	2.367
#1	1.937	18.61	.4661	1.711	148.7	206.8	.4890	10.61	8.443
#2	1.847	18.72	.4601	1.725	147.7	204.4	.4822	10.46	8.327
#3	1.803	18.58	.4454	1.703	148.0	206.9	.4662	10.16	8.061

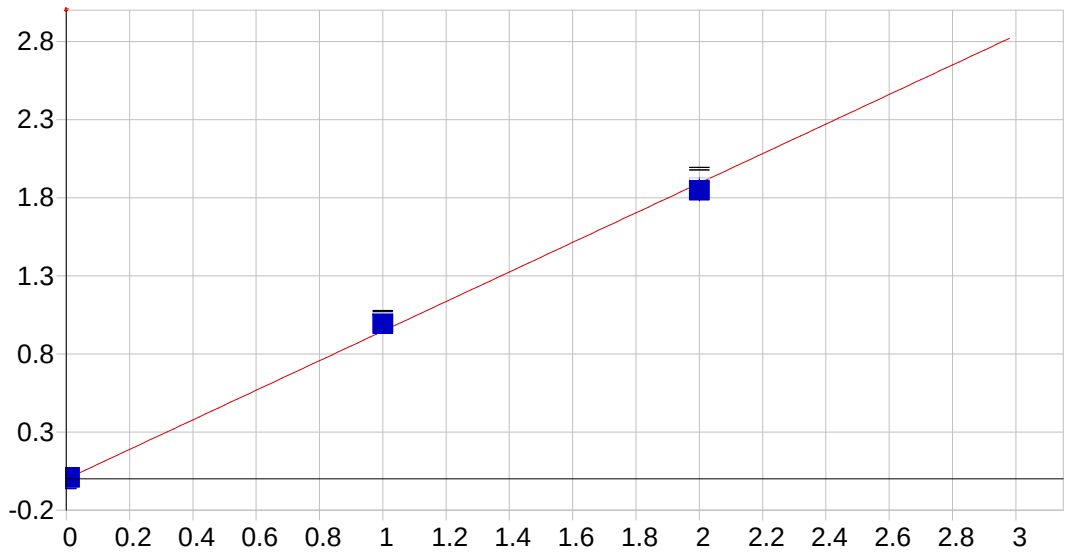
Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3.328**	**1.452**	**.6360**	**32.66**	**14.93**	**37.73**	**5.082**	**18.18**	**.6399**
Stddev	.076	.045	.0159	.18	.05	.16	.030	.10	.0154
%RSD	2.271	3.089	2.499	.5571	.3489	.4147	.5906	.5308	2.409
#1	3.392	1.500	.6491	32.67	14.92	37.60	5.099	18.19	.6523
#2	3.347	1.447	.6405	32.83	14.99	37.90	5.100	18.26	.6447
#3	3.244	1.411	.6183	32.47	14.89	37.68	5.047	18.07	.6227

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**53.20**	**5.015**	**5.776**	**.9120**	**2.509**	**.1153**	**.0673**	**.9463**	**1.091**
Stddev	.23	.114	.134	.0209	.058	.0024	.0017	.0068	.024
%RSD	.4254	2.282	2.314	2.289	2.321	2.121	2.491	.7148	2.214
#1	53.12	5.112	5.887	.9297	2.557	.1173	.0684	.9456	1.111
#2	53.45	5.043	5.813	.9174	2.527	.1160	.0680	.9534	1.097
#3	53.02	4.889	5.628	.8890	2.444	.1126	.0654	.9399	1.064

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**240.0**	**.9767**	**15.00**	**.1227**	**.8648**	**3.076**	**4.404**
Stddev	1.8	.0339	.07	.0031	.0324	.011	.099
%RSD	.7702	3.467	.4444	2.493	3.748	.3688	2.238
#1	238.7	1.013	14.98	.1253	.8993	3.077	4.486
#2	239.3	.9720	15.07	.1236	.8600	3.086	4.431
#3	242.1	.9454	14.94	.1193	.8350	3.064	4.294

Sample Name: Cal 3 Acquired: 11/13/2014 16:36:14 Type: Cal
Method: 2014v3(v292) Mode: IR Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_3710
Units	Cts/S
Avg	3731.0
Stddev	71.9
%RSD	1.9270
#1	3661.9
#2	3725.7
#3	3805.4

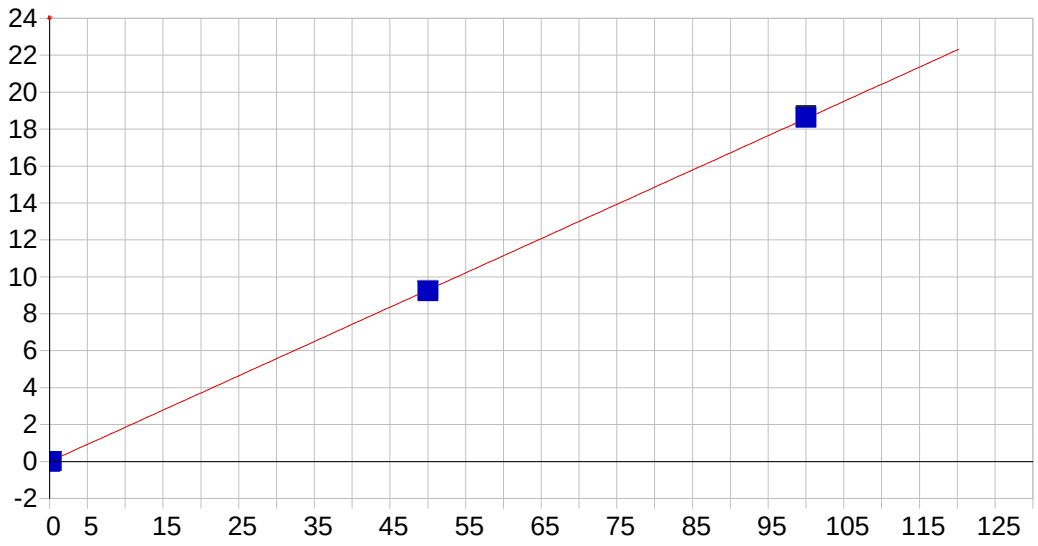


Ag 328.068 {103}

Date of Fit:	11/13/2014 16:39:56	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000471	Re-Slope:	1.000000
A1 (Gain):	0.946496	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999395	Status:	OK.
Std Error of Est:	0.000258		
Predicted MDL:	0.000850		
Predicted MQL:	0.002833		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	-.00047	.000	1
CAL 1	.01000	.00910	-.001	-9.04	.00893	.001	1
Cal 2	1.0000	1.0495	.049	4.95	1.0007	.013	1
Cal 3	2.0000	1.9515	-.049	-2.43	1.8623	.068	1



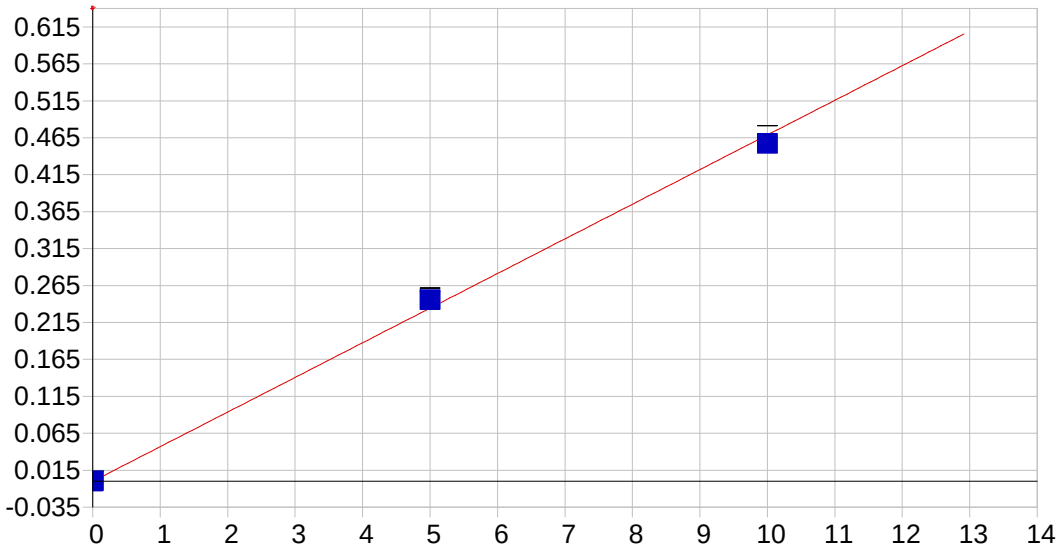
Al 396.152 { 85}

Date of Fit:	11/13/2014 16:39:56	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.001029	Re-Slope:	1.000000

A1 (Gain):	0.185730	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999988	Status:	OK.
Std Error of Est:	0.000220		
Predicted MDL:	0.008963		
Predicted MQL:	0.029876		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00002	.000	.000	-.00103	.002	1
CAL 1	.20000	.18223	-.018	-8.88	.03311	.002	1
Cal 2	50.000	49.752	-.248	-.497	9.2466	.028	1
Cal 3	100.00	100.27	.266	.266	18.636	.078	1

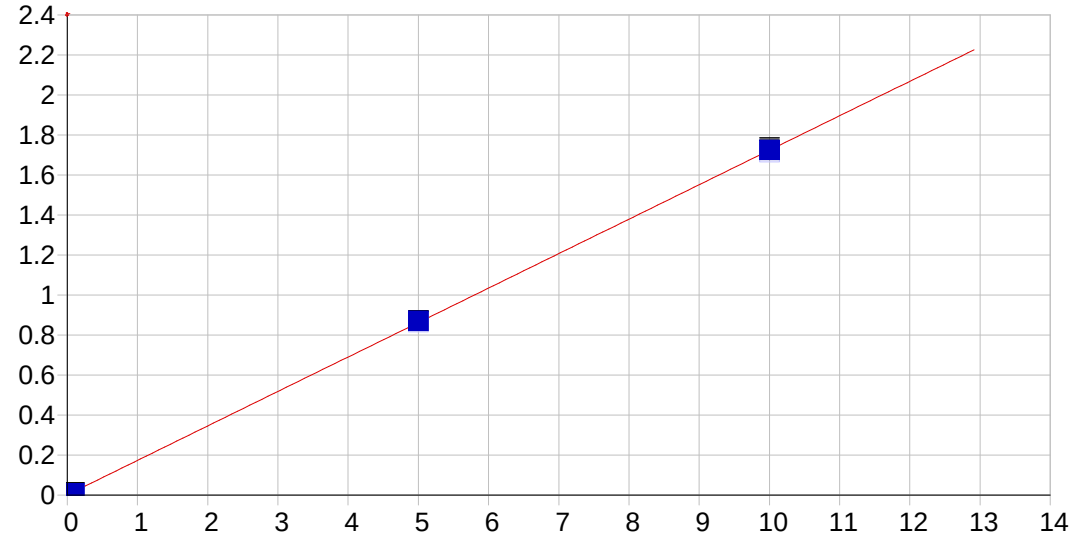


As 189.042 {478}

Date of Fit:	11/13/2014 16:39:56	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000071	Re-Slope:	1.000000
A1 (Gain):	0.046883	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999410	Status:	OK.
Std Error of Est:	0.000028		
Predicted MDL:	0.001913		
Predicted MQL:	0.006378		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	-.00007	.000	1
CAL 1	.01000	.01099	.001	9.92	.00044	.000	1
Cal 2	5.0000	5.2420	.242	4.84	.24560	.003	1
Cal 3	10.000	9.7570	-.243	-2.43	.45718	.011	1

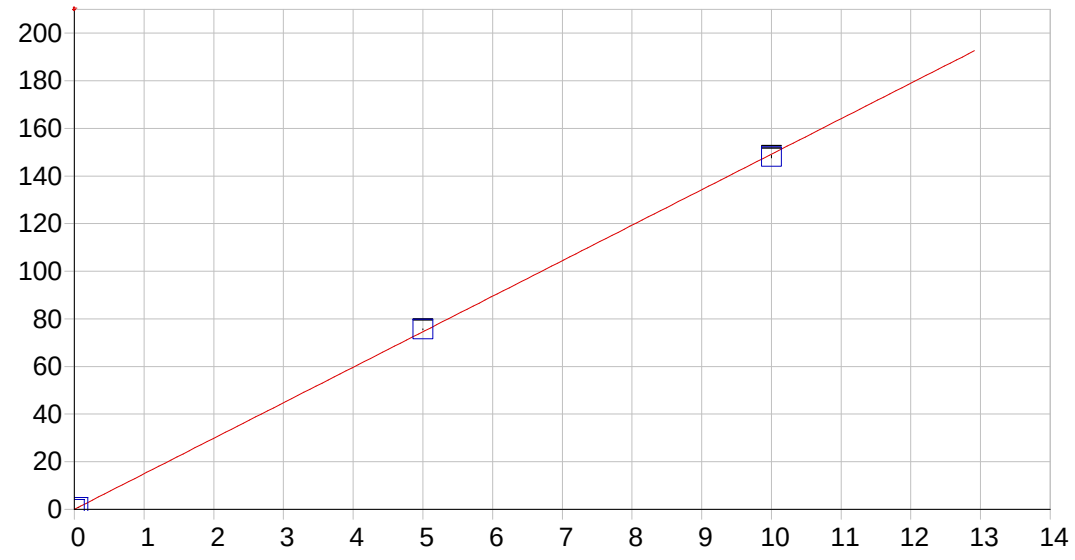


B 249.678 {135}

Date of Fit:	11/13/2014 16:39:56	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000991	Re-Slope:	1.000000
A1 (Gain):	0.172283	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999159	Status:	OK.
Std Error of Est:	0.000386		
Predicted MDL:	0.002891		
Predicted MQL:	0.009638		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00005	.000	.000	.00100	.000	1
CAL 1	.10000	.05031	-.050	-49.7	.00965	.001	1
Cal 2	5.0000	5.0422	.042	.845	.86368	.002	1
Cal 3	10.000	10.008	.008	.078	1.7131	.011	1



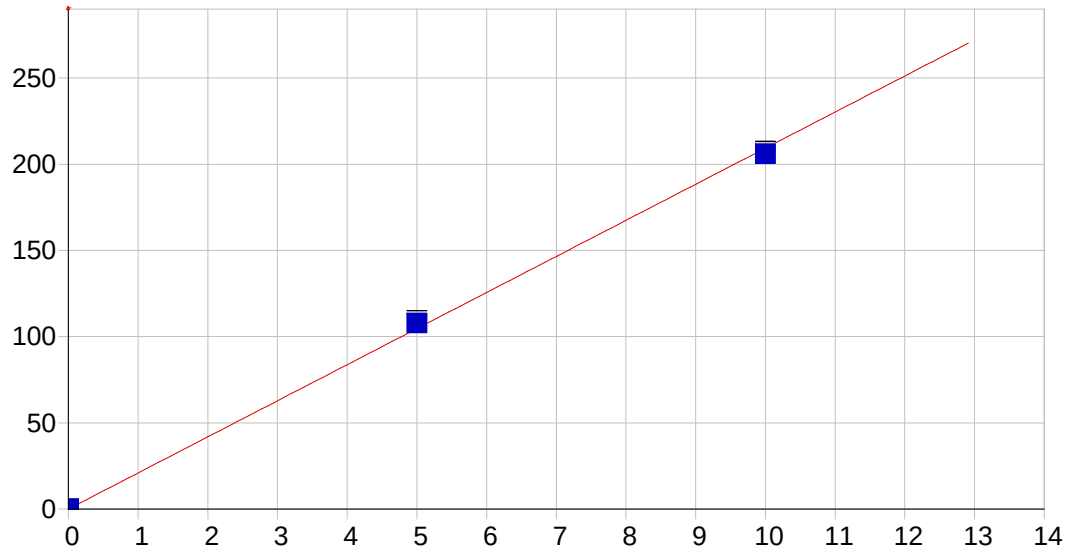
Ba 455.403 { 74}

Date of Fit:	11/13/2014 16:39:56	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.032018	Re-Slope:	1.000000
A1 (Gain):	14.913122	Y-int:	0.000000

A2 (Curvature):		0.000000					
n (Exponent):		1.000000					
Correlation:		0.999951		Status:	OK.		
Std Error of Est:		0.005739					
Predicted MDL:		0.000159					
Predicted MQL:		0.000531					

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.03201	.001	1
CAL 1	.05000	.05010	.000	.198	.77915	.005	1
Cal 2	5.0000	5.0703	.070	1.41	75.645	.236	1
Cal 3	10.000	9.9296	-.070	-.704	148.11	.529	1

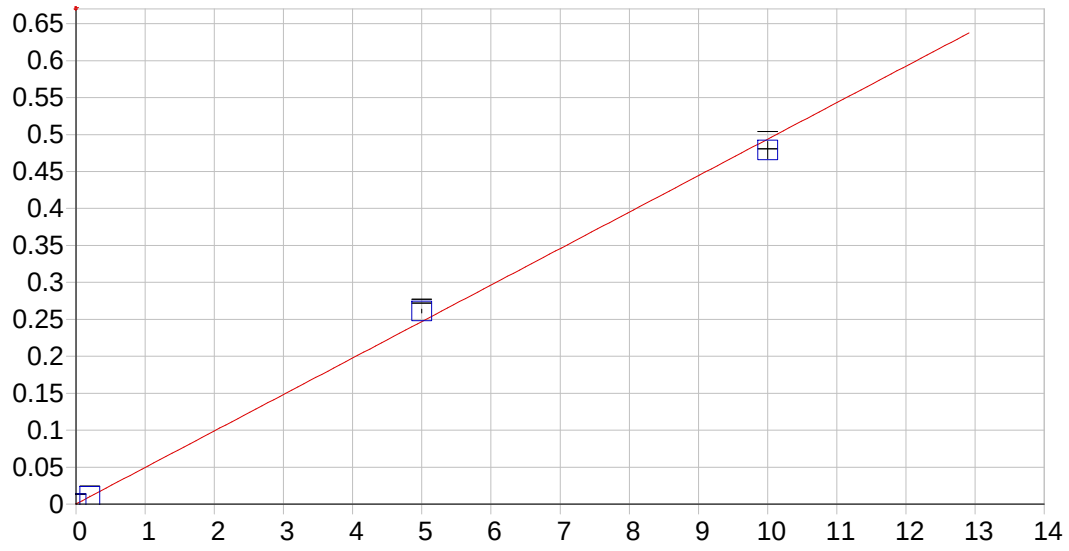


Be 313.042 {108}

Date of Fit:	11/13/2014 16:39:56	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.001468	Re-Slope:	1.000000
A1 (Gain):	20.932547	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999762	Status:	OK.
Std Error of Est:	0.005593		
Predicted MDL:	0.000038		
Predicted MQL:	0.000128		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00146	.001	1
CAL 1	.00500	.00518	.000	3.62	.10980	.000	1
Cal 2	5.0000	5.1542	.154	3.08	107.86	1.55	1
Cal 3	10.000	9.8456	-.154	-1.54	206.03	1.43	1

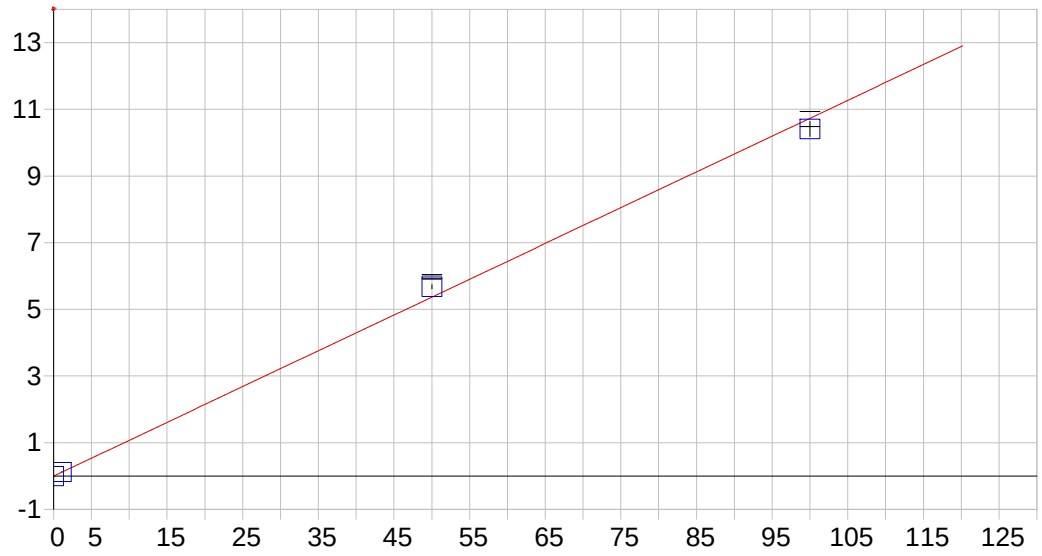


Bi 223.061 {451}

Date of Fit:	11/13/2014 16:39:56	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000219	Re-Slope:	1.000000
A1 (Gain):	0.049354	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999158	Status:	OK.
Std Error of Est:	0.000158		
Predicted MDL:	0.003113		
Predicted MQL:	0.010377		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	-.00002	.000	.000	.00022	.000	1
CAL 1	.20000	.20980	.010	4.90	.01057	.000	1
Cal 2	5.0000	5.2861	.286	5.72	.26111	.002	1
Cal 3	10.000	9.7041	-.296	-2.96	.47915	.012	1



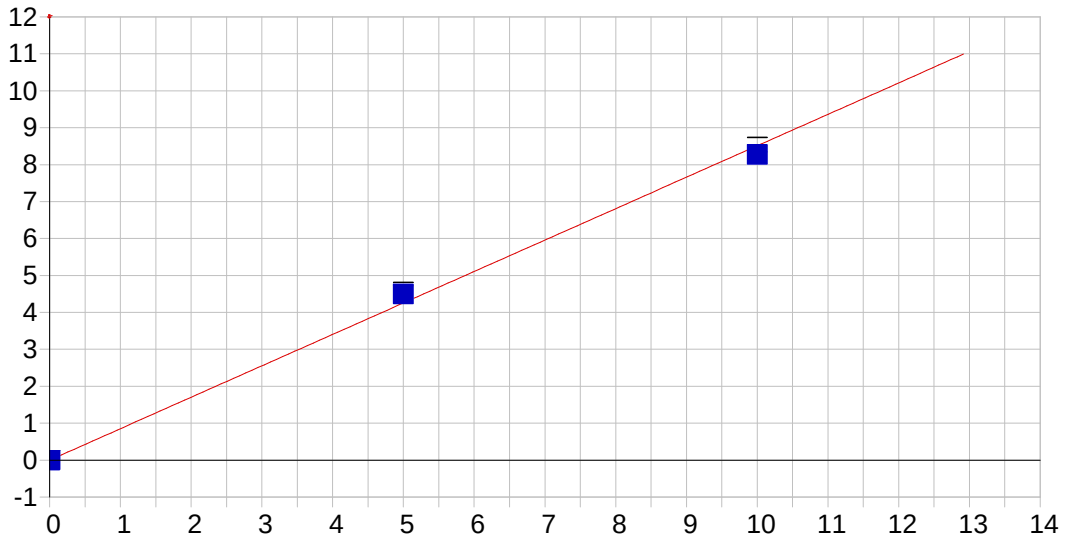
Ca 184.006 {483}

Date of Fit:	11/13/2014 16:39:56	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000429	Re-Slope:	1.000000
A1 (Gain):	0.107353	Y-int:	0.000000

A2 (Curvature):	0.000000					
n (Exponent):	1.000000					
Correlation:	0.999100		Status:	OK.		
Std Error of Est:	0.002503					
Predicted MDL:	0.000841					
Predicted MQL:	0.002803					

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	-.00015	.000	.000	-.00045	.000	1
CAL 1	1.0000	1.1229	.123	12.3	.12012	.001	1
Cal 2	50.000	52.885	2.89	5.77	5.6769	.064	1
Cal 3	100.00	96.992	-3.01	-3.01	10.412	.226	1

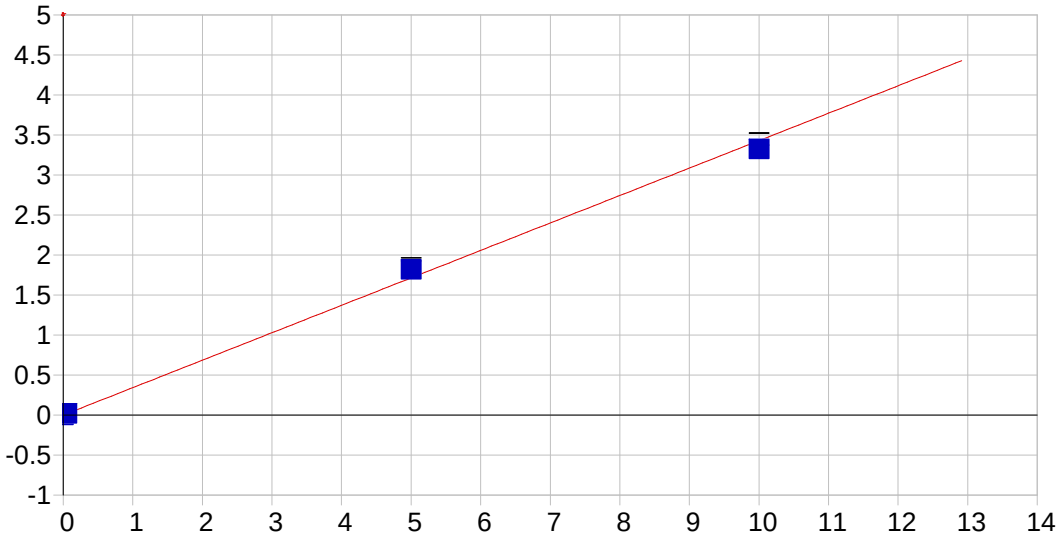


Cd 228.802 {447}

Date of Fit:	11/13/2014 16:39:56	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000273	Re-Slope:	1.000000
A1 (Gain):	0.851154	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999201	Status:	OK.
Std Error of Est:	0.000417		
Predicted MDL:	0.000177		
Predicted MQL:	0.000591		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	-.00027	.000	1
CAL 1	.00500	.00514	.000	2.78	.00404	.000	1
Cal 2	5.0000	5.2831	.283	5.66	4.4999	.044	1
Cal 3	10.000	9.7168	-.283	-2.83	8.2770	.196	1

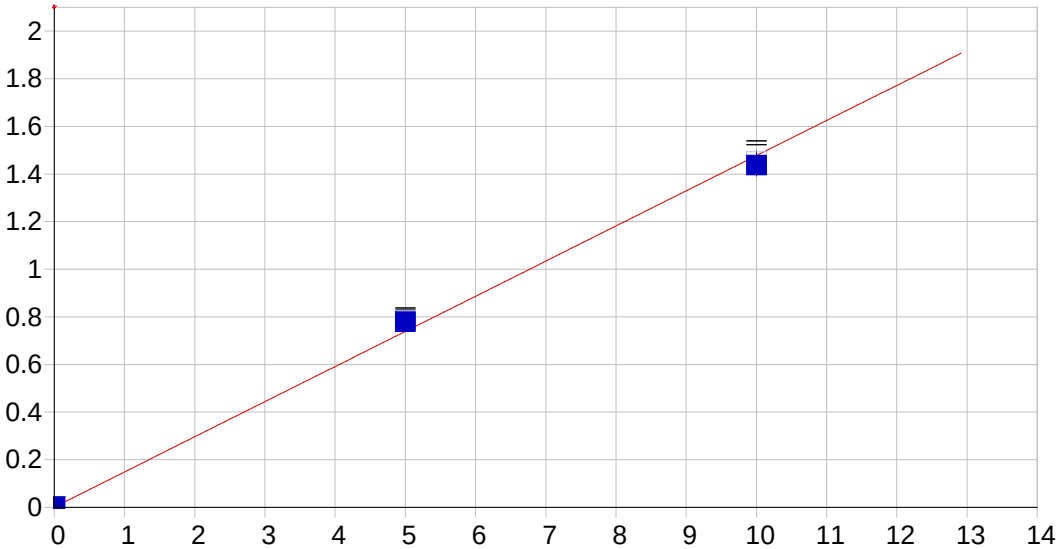


Co 228.616 {448}

Date of Fit:	11/13/2014 16:39:56	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000060	Re-Slope:	1.000000
A1 (Gain):	0.342896	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999040	Status:	OK.
Std Error of Est:	0.000584		
Predicted MDL:	0.000351		
Predicted MQL:	0.001170		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	-.00001	.000	.000	.00006	.000	1
CAL 1	.05000	.05485	.005	9.70	.01888	.000	1
Cal 2	5.0000	5.3069	.307	6.14	1.8225	.019	1
Cal 3	10.000	9.6883	-.312	-3.12	3.3277	.076	1



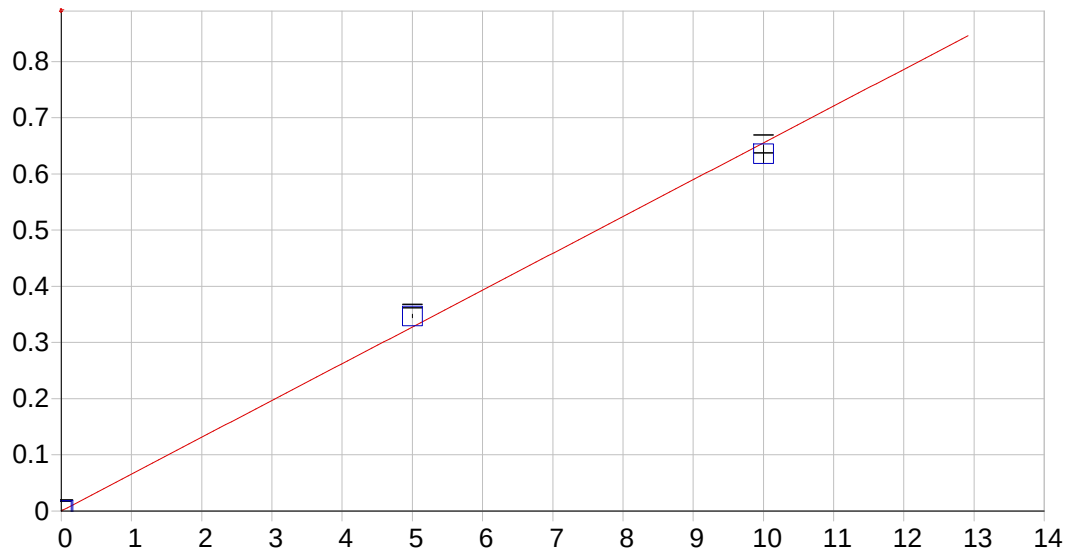
Cr 283.563 {119}

Date of Fit:	11/13/2014 16:39:56	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.001013	Re-Slope:	1.000000
A1 (Gain):	0.147610	Y-int:	0.000000

A2 (Curvature):	0.000000					
n (Exponent):	1.000000					
Correlation:	0.999275		Status:	OK.		
Std Error of Est:	0.000098					
Predicted MDL:	0.001115					
Predicted MQL:	0.003717					

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00101	.000	1
CAL 1	.01000	.01003	.000	.280	.00243	.000	1
Cal 2	5.0000	5.2722	.272	5.44	.78695	.009	1
Cal 3	10.000	9.7278	-.272	-2.72	1.4523	.045	1

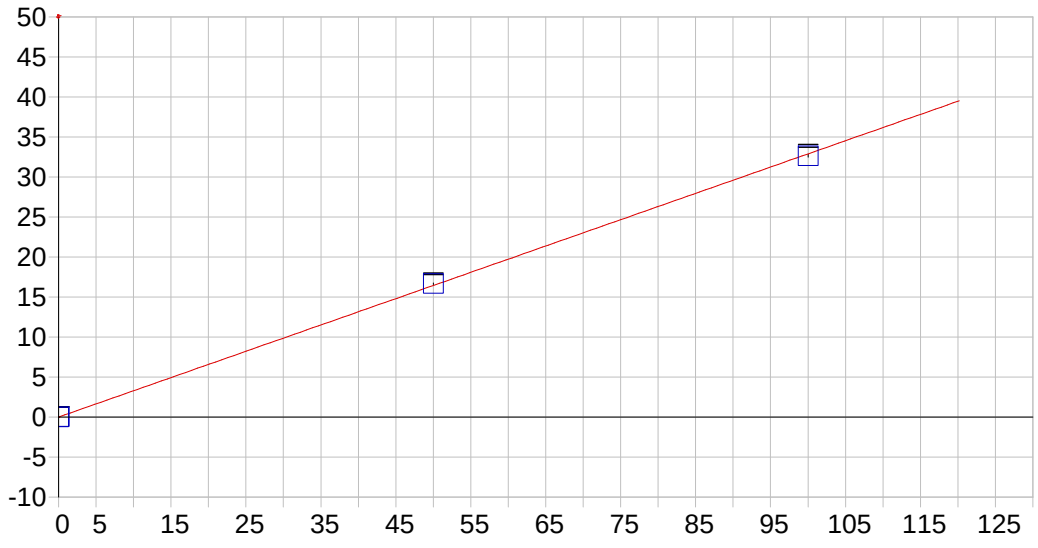


Cu 217.894 {455}

Date of Fit:	11/13/2014 16:39:56	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000302	Re-Slope:	1.000000
A1 (Gain):	0.065496	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999136	Status:	OK.
Std Error of Est:	0.000075		
Predicted MDL:	0.002180		
Predicted MQL:	0.007268		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00030	.000	1
CAL 1	.02500	.02517	.000	.668	.00195	.000	1
Cal 2	5.0000	5.2943	.294	5.89	.34706	.003	1
Cal 3	10.000	9.7055	-.294	-2.94	.63598	.016	1

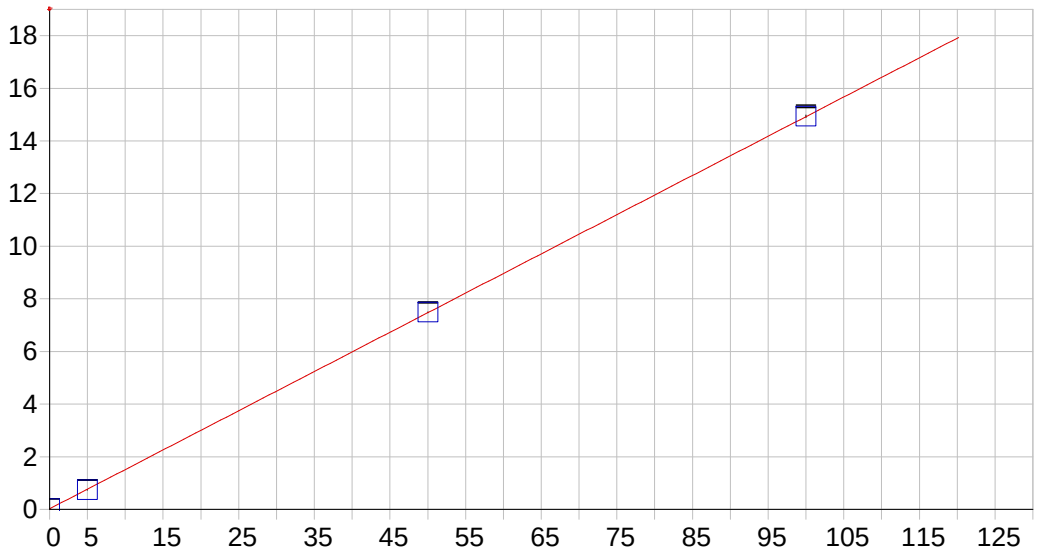


Fe 259.940 {130}

Date of Fit:	11/13/2014 16:39:56	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000054	Re-Slope:	1.000000
A1 (Gain):	0.328895	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999950	Status:	OK.
Std Error of Est:	0.000568		
Predicted MDL:	0.001535		
Predicted MQL:	0.005117		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00005	.000	1
CAL 1	.10000	.10387	.004	3.87	.03422	.001	1
Cal 2	50.000	50.701	.701	1.40	16.675	.100	1
Cal 3	100.00	99.295	-.705	-.705	32.658	.182	1



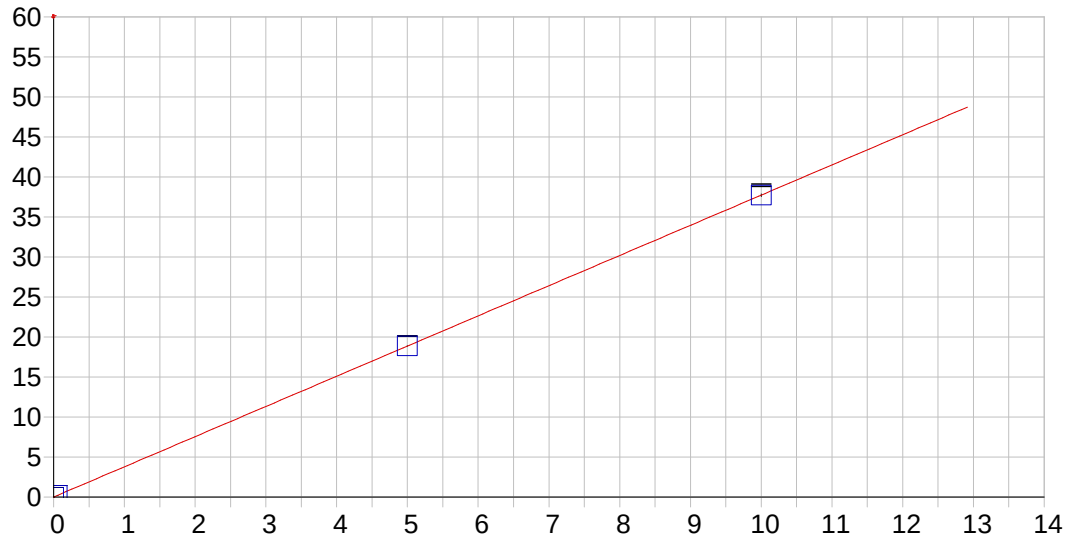
K 766.490 { 44}

Date of Fit:	11/13/2014 16:39:56	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.022415	Re-Slope:	1.000000
A1 (Gain):	0.149021	Y-int:	0.000000

A2 (Curvature):		0.000000					
n (Exponent):		1.000000					
Correlation:		0.999981		Status:	OK.		
Std Error of Est:		0.001149					
Predicted MDL:		0.025521					
Predicted MQL:		0.085071					

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00016	.000	.000	.02244	.001	1
CAL 1	5.0000	4.8312	-.169	-3.38	.74237	.008	1
Cal 2	50.000	50.099	.099	.198	7.4882	.020	1
Cal 3	100.00	100.07	.070	.070	14.935	.052	1

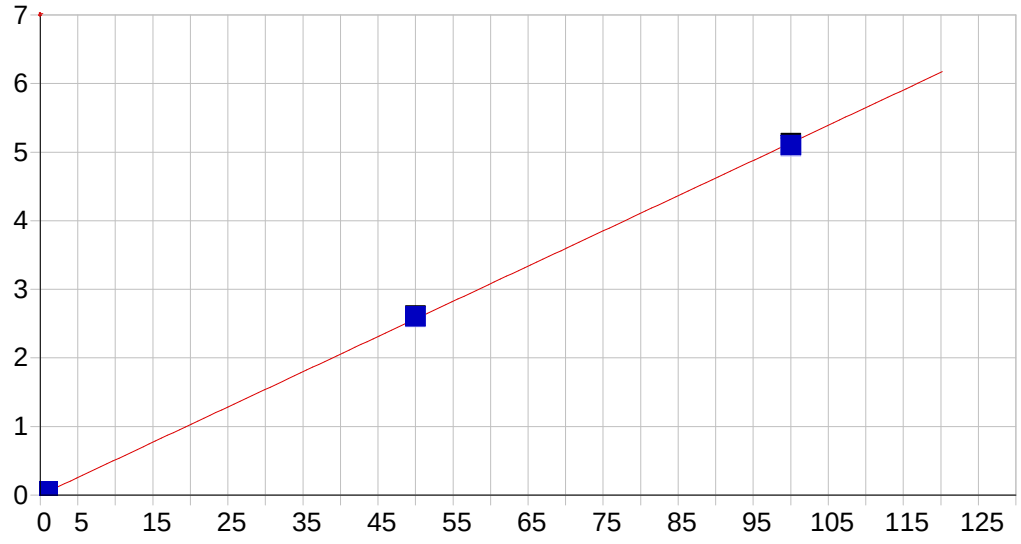


Li 670.784 { 50}

Date of Fit:	11/13/2014 16:39:56	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.007515	Re-Slope:	1.000000
A1 (Gain):	3.772447	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999997	Status:	OK.
Std Error of Est:	0.000377		
Predicted MDL:	0.001027		
Predicted MQL:	0.003424		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00751	.002	1
CAL 1	.05000	.05223	.002	4.46	.20455	.002	1
Cal 2	5.0000	4.9983	-.002	-.034	18.863	.038	1
Cal 3	10.000	9.9995	-.001	-.005	37.730	.156	1

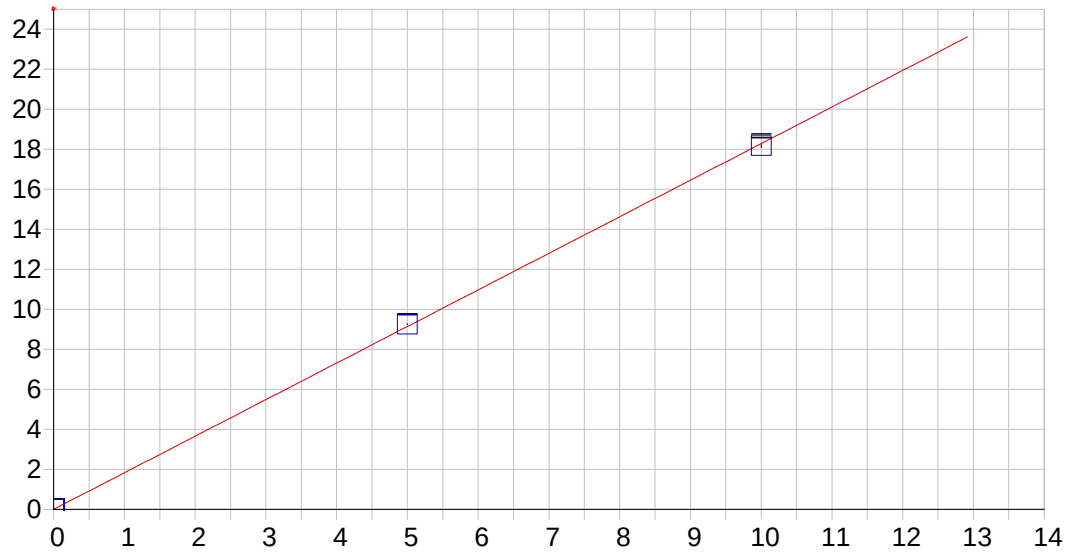


Mg 279.806 {121}

Date of Fit:	11/13/2014 16:39:56	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000524	Re-Slope:	1.000000
A1 (Gain):	0.051348	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999955	Status:	OK.
Std Error of Est:	0.000267		
Predicted MDL:	0.010140		
Predicted MQL:	0.033799		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	-.00001	.000	.000	.00052	.001	1
CAL 1	1.0000	.99943	-.001	-.057	.05146	.000	1
Cal 2	50.000	50.671	.671	1.34	2.5929	.010	1
Cal 3	100.00	99.330	-.670	-.670	5.0820	.030	1



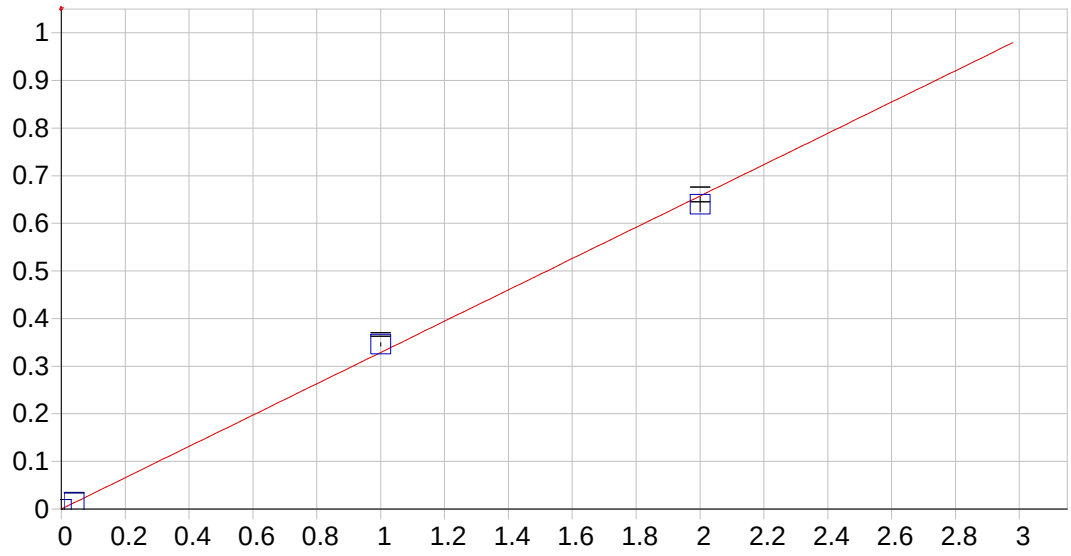
Mn 257.610 {131}

Date of Fit:	11/13/2014 16:39:56	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000619	Re-Slope:	1.000000
A1 (Gain):	1.828817	Y-int:	0.000000

A2 (Curvature):		0.000000					
n (Exponent):		1.000000					
Correlation:		0.999962		Status:	OK.		
Std Error of Est:		0.000337					
Predicted MDL:		0.000267					
Predicted MQL:		0.000890					

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00062	.001	1
CAL 1	.01500	.01509	.000	.626	.02822	.000	1
Cal 2	5.0000	5.0613	.061	1.23	9.2569	.027	1
Cal 3	10.000	9.9386	-.061	-.614	18.176	.096	1

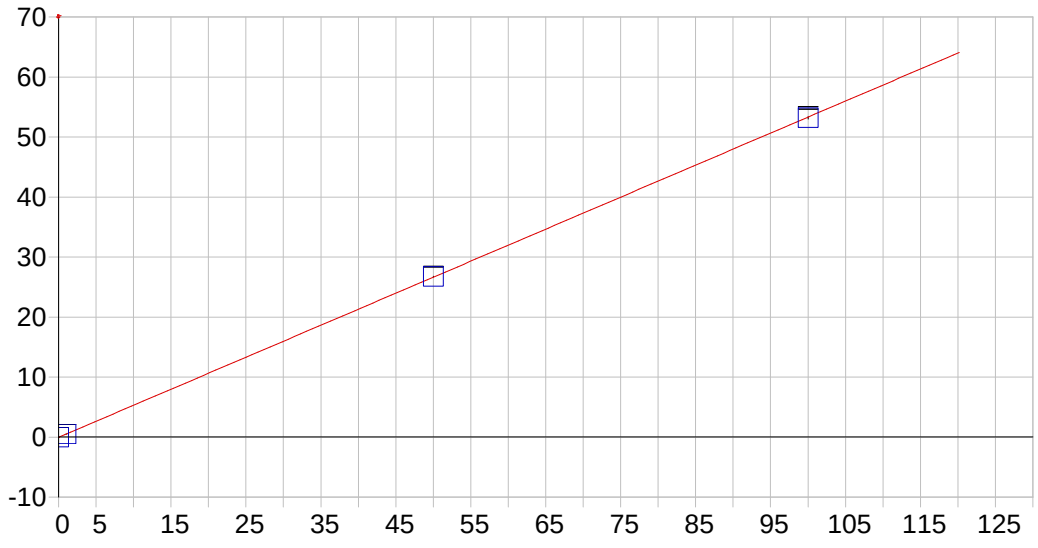


Mo 202.030 {467}

Date of Fit:	11/13/2014 16:39:56	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000084	Re-Slope:	1.000000
A1 (Gain):	0.328724	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999308	Status:	OK.
Std Error of Est:	0.000191		
Predicted MDL:	0.000328		
Predicted MQL:	0.001094		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00008	.000	1
CAL 1	.04000	.04155	.002	3.86	.01374	.000	1
Cal 2	1.0000	1.0521	.052	5.21	.34593	.004	1
Cal 3	2.0000	1.9464	-.054	-2.68	.63990	.015	1

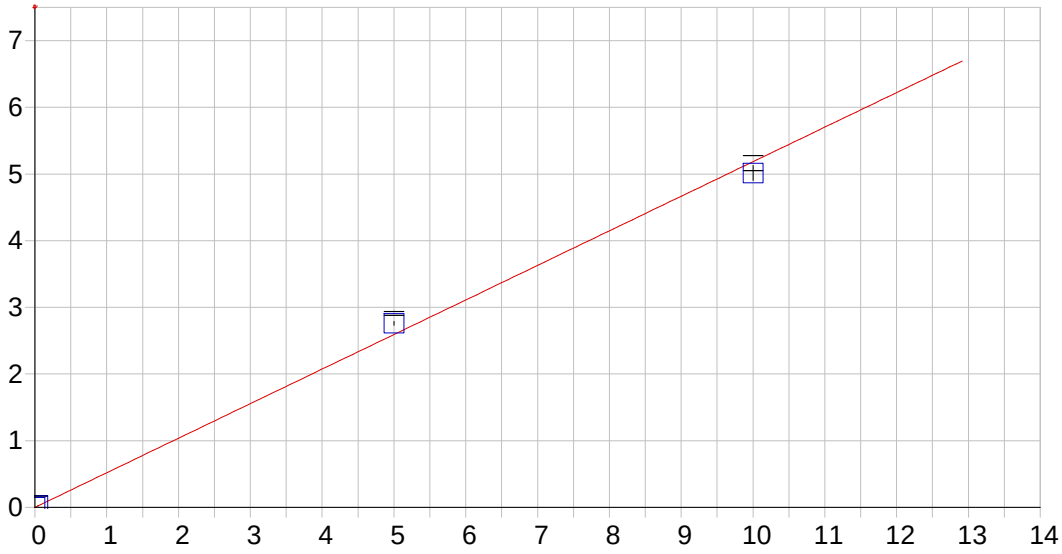


Na 589.592 { 57}

Date of Fit:	11/13/2014 16:39:56	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.036413	Re-Slope:	1.000000
A1 (Gain):	0.533536	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999995	Status:	OK.
Std Error of Est:	0.000909		
Predicted MDL:	0.007104		
Predicted MQL:	0.023679		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	-.00001	.000	.000	-.03642	.006	1
CAL 1	1.0000	1.0050	.005	.504	.49981	.003	1
Cal 2	50.000	50.216	.216	.433	26.756	.056	1
Cal 3	100.00	99.779	-.221	-.221	53.199	.226	1



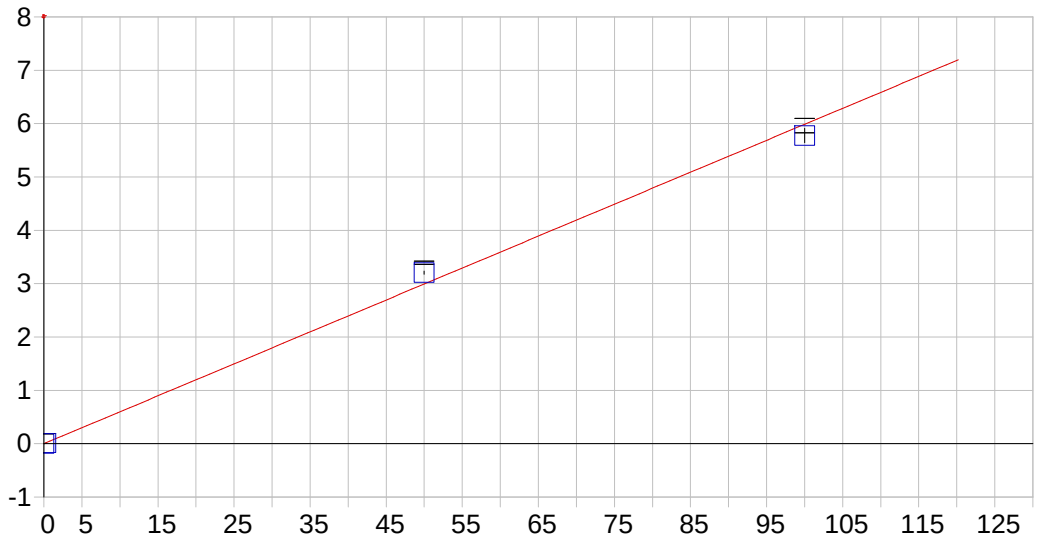
Ni 221.647 {452}

Date of Fit:	11/13/2014 16:39:56	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000247	Re-Slope:	1.000000
A1 (Gain):	0.518471	Y-int:	0.000000

A2 (Curvature):	0.000000					
n (Exponent):	1.000000					
Correlation:	0.998928		Status:	OK.		
Std Error of Est:	0.000833					
Predicted MDL:	0.000319					
Predicted MQL:	0.001064					

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	-.00001	.000	.000	.00024	.000	1
CAL 1	.04000	.04432	.004	10.8	.02323	.000	1
Cal 2	5.0000	5.3243	.324	6.49	2.7607	.027	1
Cal 3	10.000	9.6714	-.329	-3.29	5.0146	.114	1

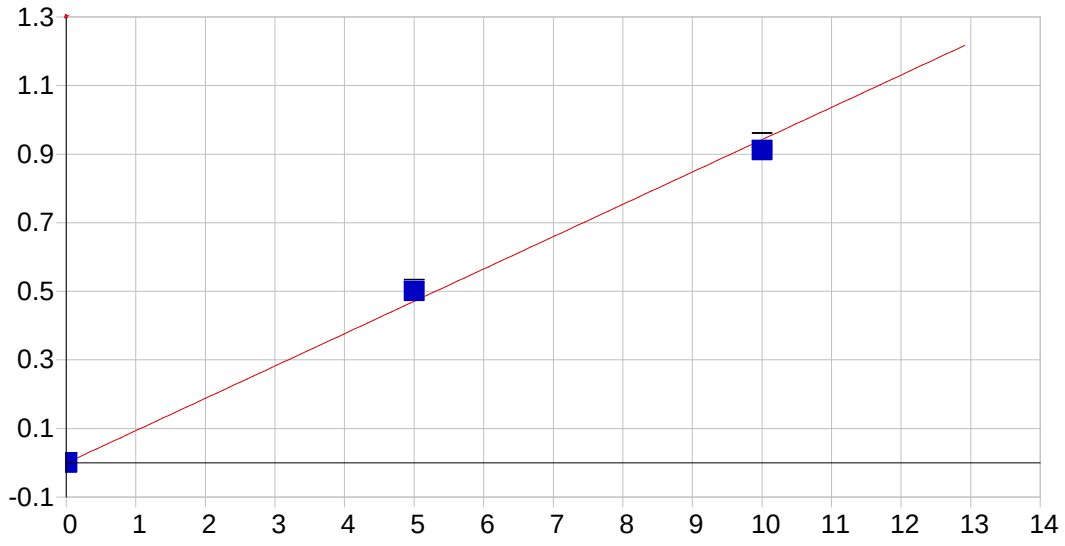


P 177.495 {490}

Date of Fit:	11/13/2014 16:39:56	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000010	Re-Slope:	1.000000
A1 (Gain):	0.059869	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.998768	Status:	OK.
Std Error of Est:	0.000815		
Predicted MDL:	0.001517		
Predicted MQL:	0.005058		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	-.00002	.000	.000	-.00001	.000	1
CAL 1	.25000	.25651	.007	2.60	.01535	.000	1
Cal 2	50.000	53.514	3.51	7.03	3.2038	.030	1
Cal 3	100.00	96.480	-3.52	-3.52	5.7761	.134	1

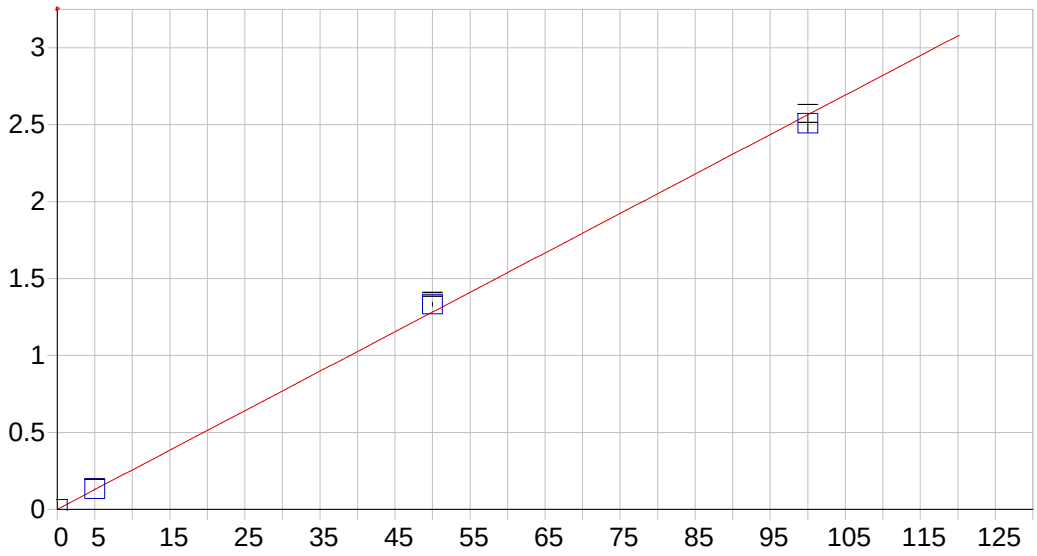


Pb 220.353 {453}

Date of Fit:	11/13/2014 16:39:56	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000502	Re-Slope:	1.000000
A1 (Gain):	0.094262	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.998920	Status:	OK.
Std Error of Est:	0.000076		
Predicted MDL:	0.001471		
Predicted MQL:	0.004902		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	-.00050	.000	1
CAL 1	.01000	.01355	.004	35.5	.00082	.000	1
Cal 2	5.0000	5.3216	.322	6.43	.50140	.005	1
Cal 3	10.000	9.6747	-.325	-3.25	.91201	.021	1



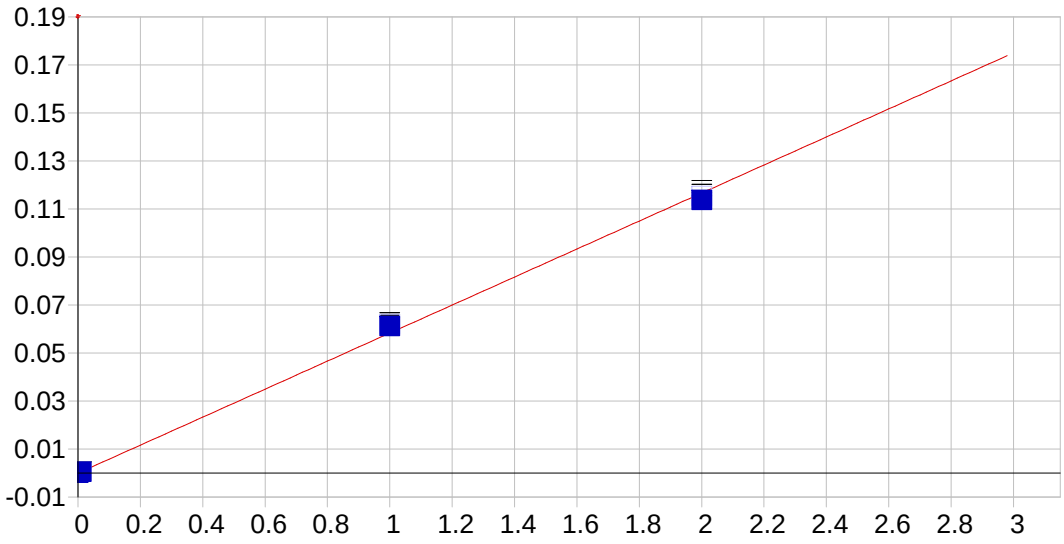
S 182.034 {485}

Date of Fit:	11/13/2014 16:39:56	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000313	Re-Slope:	1.000000
A1 (Gain):	0.025642	Y-int:	0.000000

A2 (Curvature):	0.000000					
n (Exponent):	1.000000					
Correlation:	0.999574		Status:	OK.		
Std Error of Est:	0.000931					
Predicted MDL:	0.003367					
Predicted MQL:	0.011224					

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	-.00024	.000	.000	.00031	.000	1
CAL 1	5.0000	5.1463	.146	2.93	.13228	.001	1
Cal 2	50.000	52.014	2.01	4.03	1.3341	.012	1
Cal 3	100.00	97.840	-2.16	-2.16	2.5091	.058	1

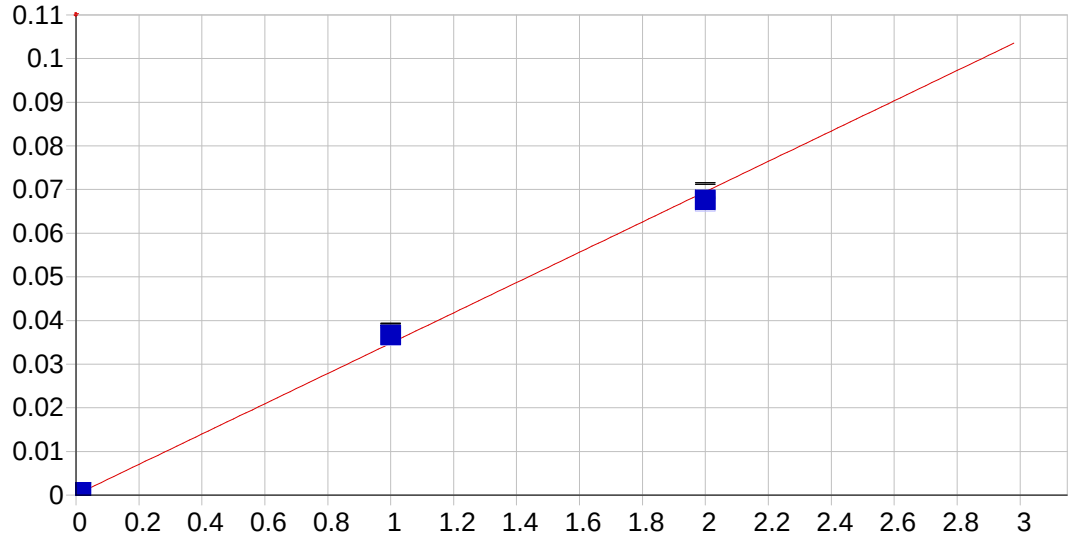


Sb 206.833 {463}

Date of Fit:	11/13/2014 16:39:56	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000051	Re-Slope:	1.000000
A1 (Gain):	0.058354	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999399	Status:	OK.
Std Error of Est:	0.000016		
Predicted MDL:	0.002326		
Predicted MQL:	0.007753		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	-.00005	.000	1
CAL 1	.01000	.01027	.000	2.69	.00052	.000	1
Cal 2	1.0000	1.0496	.050	4.96	.06196	.001	1
Cal 3	2.0000	1.9501	-.050	-2.49	.11528	.002	1

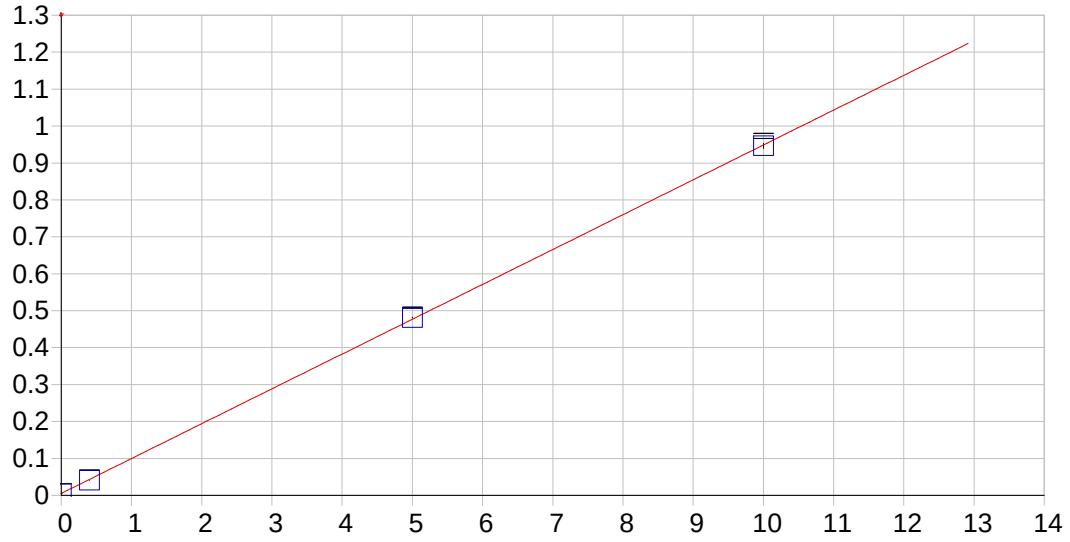


Se 196.090 {472}

Date of Fit:	11/13/2014 16:39:56	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000104	Re-Slope:	1.000000
A1 (Gain):	0.034705	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999270	Status:	OK.
Std Error of Est:	0.000013		
Predicted MDL:	0.002944		
Predicted MQL:	0.009815		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00010	.000	1
CAL 1	.01500	.01489	.000	-.740	.00062	.000	1
Cal 2	1.0000	1.0540	.054	5.40	.03650	.000	1
Cal 3	2.0000	1.9462	-.054	-2.69	.06728	.002	1



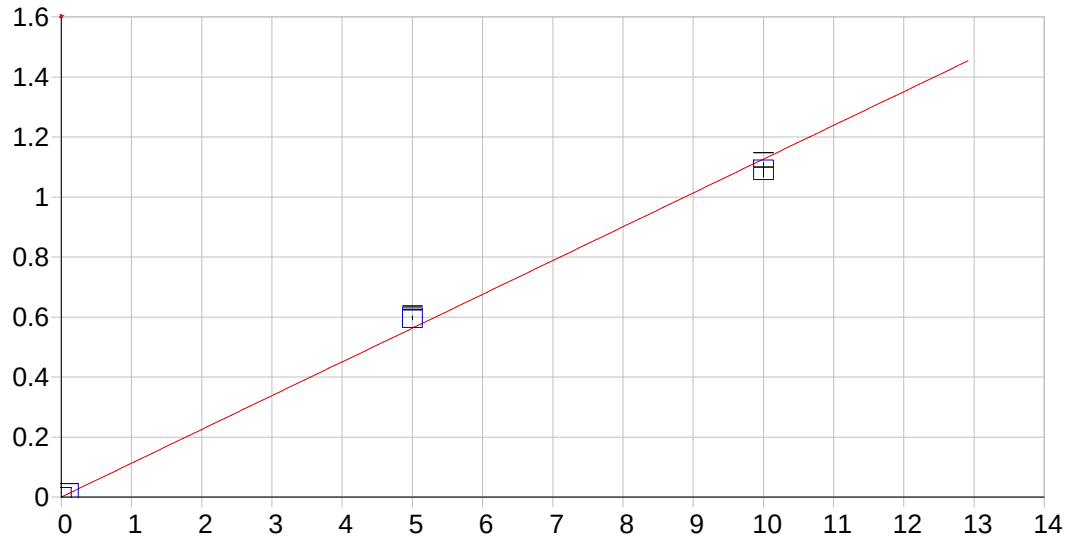
Si 251.611 {134}

Date of Fit:	11/13/2014 16:39:56	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.005321	Re-Slope:	1.000000
A1 (Gain):	0.094328	Y-int:	0.000000

A2 (Curvature):	0.000000					
n (Exponent):	1.000000					
Correlation:	0.999951		Status:	OK.		
Std Error of Est:	0.000103					
Predicted MDL:	0.005300					
Predicted MQL:	0.017666					

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00002	.000	.000	.00532	.001	1
CAL 1	.40000	.37961	-.020	-5.10	.04113	.001	1
Cal 2	5.0000	5.0447	.045	.893	.48117	.001	1
Cal 3	10.000	9.9757	-.024	-.243	.94631	.007	1

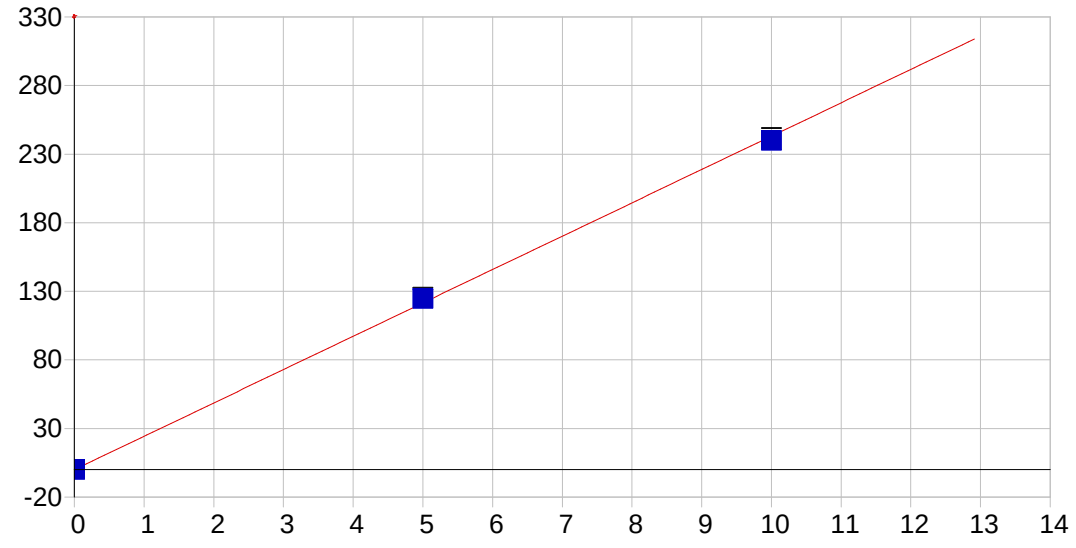


Sn 189.989 {478}

Date of Fit:	11/13/2014 16:39:56	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000123	Re-Slope:	1.000000
A1 (Gain):	0.112570	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999043	Status:	OK.
Std Error of Est:	0.000271		
Predicted MDL:	0.000725		
Predicted MQL:	0.002418		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	-.00001	.000	.000	.00012	.000	1
CAL 1	.10000	.10580	.006	5.80	.01203	.000	1
Cal 2	5.0000	5.3068	.307	6.14	.59751	.007	1
Cal 3	10.000	9.6874	-.313	-3.13	1.0906	.024	1

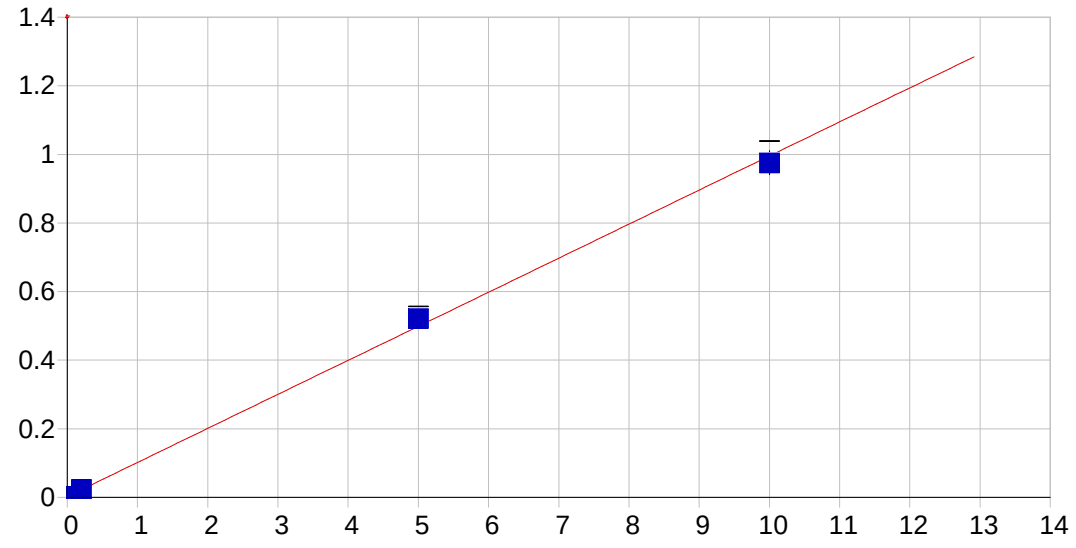


Sr 407.771 { 83}

Date of Fit:	11/13/2014 16:39:56	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.005153	Re-Slope:	1.000000
A1 (Gain):	24.310925	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999828	Status:	OK.
Std Error of Est:	0.005524		
Predicted MDL:	0.000062		
Predicted MQL:	0.000208		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	-.00516	.002	1
CAL 1	.00500	.00508	.000	1.64	.11965	.002	1
Cal 2	5.0000	5.1312	.131	2.62	124.80	.819	1
Cal 3	10.000	9.8687	-.131	-1.31	240.04	1.85	1



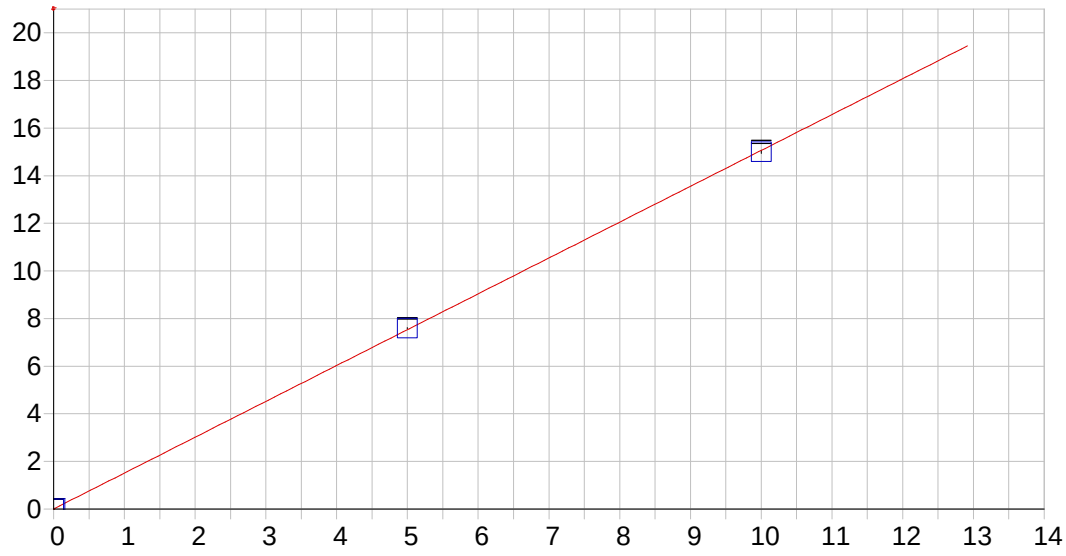
Th 283.231 {119}

Date of Fit:	11/13/2014 16:39:56	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.002387	Re-Slope:	1.000000
A1 (Gain):	0.099294	Y-int:	0.000000

A2 (Curvature):		0.000000					
n (Exponent):		1.000000					
Correlation:		0.999539		Status:	OK.		
Std Error of Est:		0.000236					
Predicted MDL:		0.003865					
Predicted MQL:		0.012884					

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00239	.000	1
CAL 1	.20000	.19062	-.009	-4.69	.02102	.000	1
Cal 2	5.0000	5.2163	.216	4.33	.52130	.007	1
Cal 3	10.000	9.7929	-.207	-2.07	.97670	.034	1

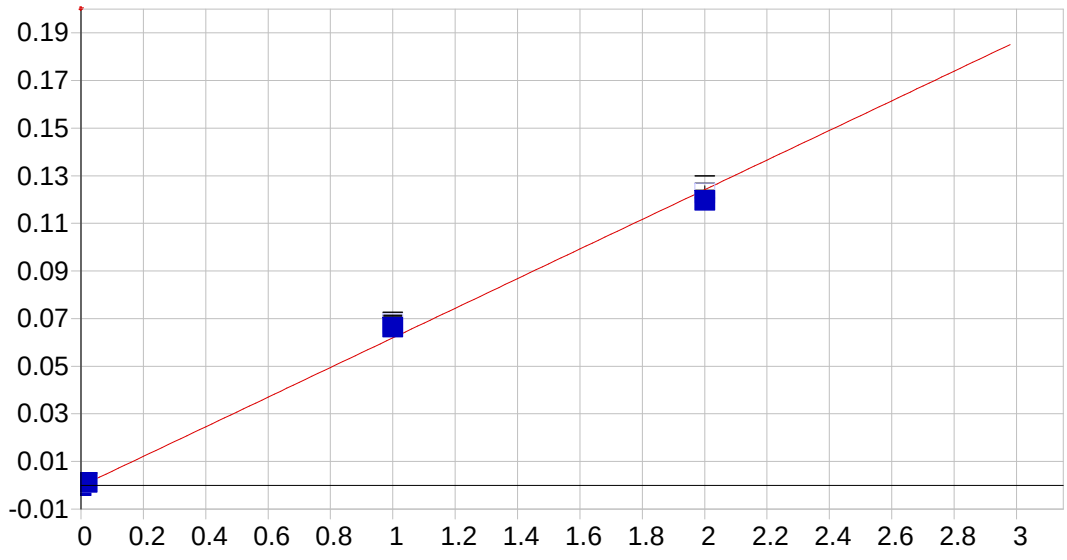


Ti 334.941 {101}

Date of Fit:	11/13/2014 16:39:56	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.005800	Re-Slope:	1.000000
A1 (Gain):	1.505726	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999982	Status:	OK.
Std Error of Est:	0.000223		
Predicted MDL:	0.000683		
Predicted MQL:	0.002275		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00580	.001	1
CAL 1	.02000	.01987	.000	-.653	.03572	.002	1
Cal 2	5.0000	5.0428	.043	.856	7.5988	.028	1
Cal 3	10.000	9.9573	-.043	-.427	14.999	.067	1

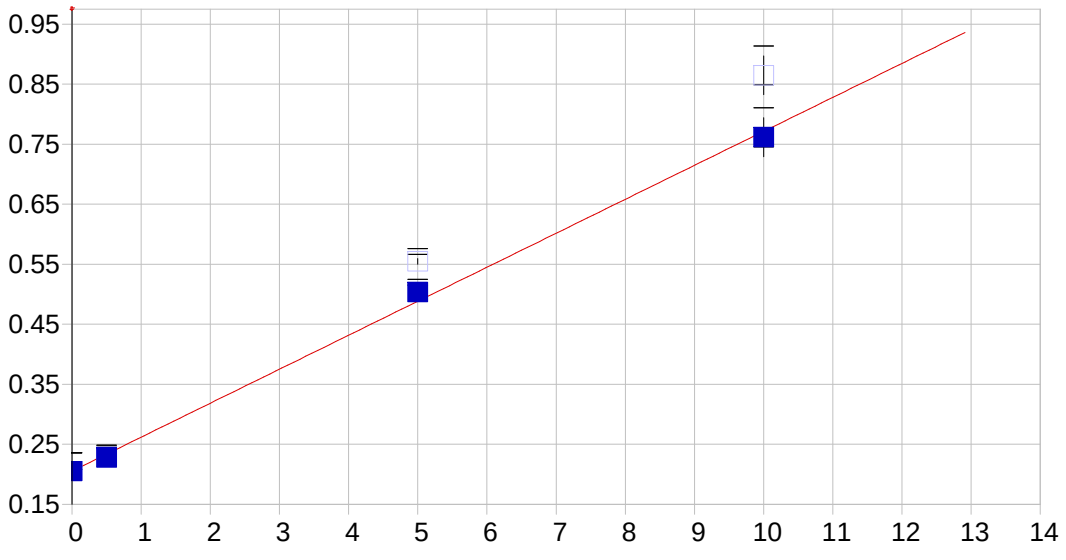


Tl 190.856 {477}

Date of Fit:	11/13/2014 16:39:56	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000318	Re-Slope:	1.000000
A1 (Gain):	0.062230	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.998728	Status:	OK.
Std Error of Est:	0.000035		
Predicted MDL:	0.001663		
Predicted MQL:	0.005543		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	-.00032	.000	1
CAL 1	.02000	.02290	.003	14.5	.00112	.000	1
Cal 2	1.0000	1.0705	.071	7.05	.06788	.001	1
Cal 3	2.0000	1.9266	-.073	-3.67	.12274	.003	1



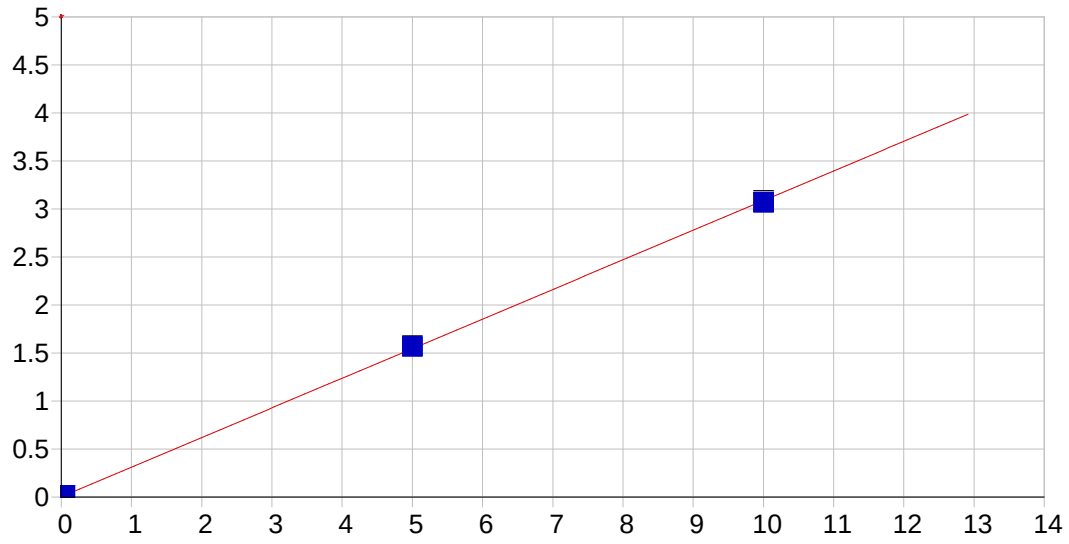
U 367.007 { 92}

Date of Fit:	11/13/2014 16:39:56	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.205389	Re-Slope:	1.000000
A1 (Gain):	0.056602	Y-int:	0.000000

A2 (Curvature):	0.000000					
n (Exponent):	1.000000					
Correlation:	0.999082		Status:	OK.		
Std Error of Est:	0.000356					
Predicted MDL:	0.017353					
Predicted MQL:	0.057845					

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00009	.000	.000	.20539	.014	1
CAL 1	.50000	.39381	-.106	-21.2	.22932	.003	1
Cal 2	5.0000	5.2655	.265	5.31	.55493	.005	1
Cal 3	10.000	9.8296	-.170	-1.70	.86478	.032	1

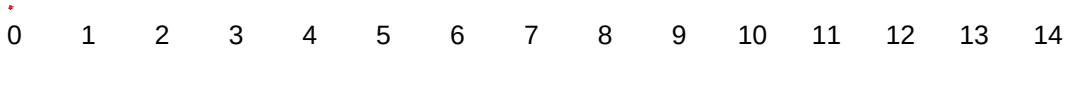


V 290.882 {116}

Date of Fit:	11/13/2014 16:39:56	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.002689	Re-Slope:	1.000000
A1 (Gain):	0.308455	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999950	Status:	OK.
Std Error of Est:	0.000120		
Predicted MDL:	0.002539		
Predicted MQL:	0.008464		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00269	.001	1
CAL 1	.05000	.04873	-.001	-2.55	.01790	.001	1
Cal 2	5.0000	5.0705	.070	1.41	1.5716	.003	1
Cal 3	10.000	9.9308	-.069	-.692	3.0756	.011	1

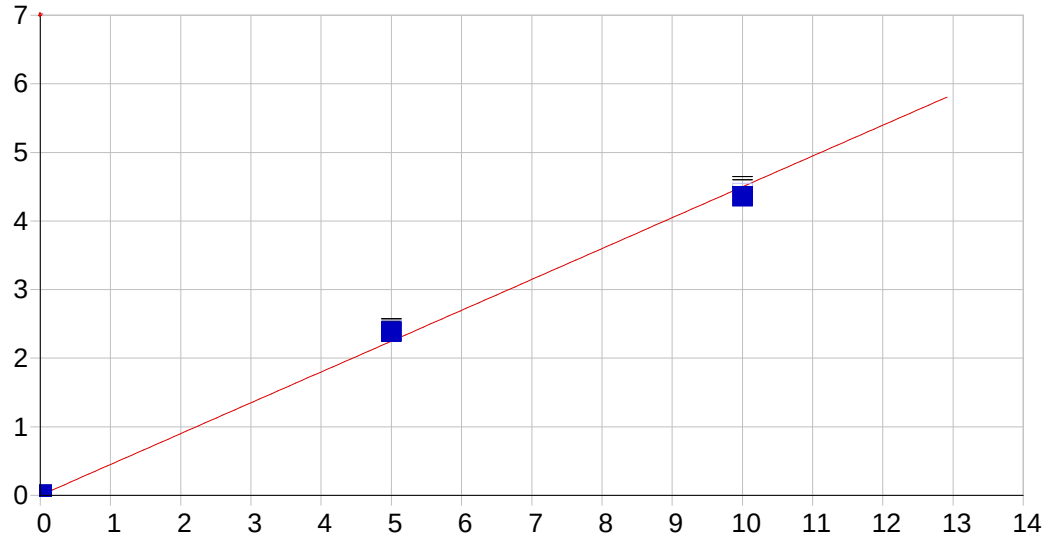


Y 371.030 { 91}*

Date of Fit:	11/13/2014 16:39:56	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	1.000000	Re-Slope:	1.000000
A1 (Gain):	0.000000	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.000000	Status:	Warning Zero Gain
Std Error of Est:	0.000000		
Predicted MDL:	n/a		
Predicted MQL:	n/a		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CAL 1	1.0000	.00000	-1.00	-100.	1.0000	.000	1
CALBLK1	.00000	.00000	.000	.000	1.0000	.000	1
Cal 2	5.0000	.00000	-5.00	-100.	1.0000	.000	1
Cal 3	10.000	.00000	-10.0	-100.	1.0000	.000	1



Zn 213.856 {458}

Date of Fit:	11/13/2014 16:39:56	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000373	Re-Slope:	1.000000
A1 (Gain):	0.449673	Y-int:	0.000000

A2 (Curvature):		0.000000					
n (Exponent):		1.000000					
Correlation:		0.999079		Status:	OK.		
Std Error of Est:		0.000478					
Predicted MDL:		0.000198					
Predicted MQL:		0.000662					
Std. Name	**Stated Conc.**	**Found Conc.**	**Difference**	**% Diff.**	**(S)IR**	**Std Dev**	**Emphasis**
CALBLK1	.00000	.00000	.000	.000	.00037	.000	1
CAL 1	.02000	.02151	.002	7.54	.01019	.000	1
Cal 2	5.0000	5.3058	.306	6.12	2.4086	.024	1
Cal 3	10.000	9.6927	-.307	-3.07	4.4036	.099	1

Sample Name: ICV Acquired: 11/13/2014 16:40:04 Type: QC
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.031**	**49.64**	**4.959**	**5.148**	**5.047**	**5.032**	**5.059**	**52.73**	**5.098**
Stddev	.017	.16	.106	.003	.011	.050	.113	1.17	.102
%RSD	1.662	.3263	2.128	.0539	.2210	.9881	2.230	2.225	2.008
#1	1.046	49.81	5.080	5.145	5.059	5.072	5.187	54.07	5.214
#2	1.012	49.50	4.886	5.150	5.037	4.976	4.976	51.88	5.019
#3	1.033	49.59	4.911	5.148	5.045	5.048	5.014	52.23	5.062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.235**	**5.132**	**5.072**	**50.02**	**49.28**	**5.014**	**50.44**	**4.988**	**1.040**
Stddev	.111	.044	.105	.35	.22	.008	.55	.030	.022
%RSD	2.112	.8615	2.073	.7081	.4541	.1537	1.087	.5974	2.088
#1	5.360	5.167	5.191	50.43	49.54	5.019	51.01	5.022	1.064
#2	5.153	5.082	4.991	49.81	49.13	5.017	49.91	4.967	1.023
#3	5.191	5.147	5.035	49.82	49.18	5.005	50.40	4.976	1.032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**49.84**	**5.135**	**5.310**	**5.141**	**51.34**	**1.014**	**1.006**	**5.364**	**5.077**
Stddev	.20	.106	.110	.107	1.17	.024	.023	.039	.112
%RSD	.3965	2.072	2.078	2.073	2.272	2.385	2.284	.7238	2.207
#1	50.07	5.256	5.435	5.263	52.68	1.040	1.032	5.404	5.205
#2	49.73	5.055	5.226	5.065	50.55	.9929	.9884	5.362	4.995
#3	49.72	5.094	5.269	5.096	50.80	1.007	.9983	5.326	5.032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: ICV Acquired: 11/13/2014 16:40:04 Type: QC
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.981**	**5.088**	**5.015**	**1.039**	**5.034**	**4.901**	**5.100**
Stddev	.066	.060	.022	.023	.056	.023	.105
%RSD	1.330	1.189	.4471	2.203	1.107	.4638	2.056
#1	5.048	5.145	5.040	1.064	5.082	4.923	5.219
#2	4.978	5.024	5.005	1.018	4.973	4.877	5.022
#3	4.916	5.096	4.999	1.036	5.046	4.904	5.059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**3626.4**
Stddev	60.1
%RSD	1.6577
#1	3561.6
#2	3680.3
#3	3637.5

Sample Name: ICB Acquired: 11/13/2014 16:43:52 Type: QC
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	.0034	.0155	.0001	.0003	<.0000
Stddev	.0006	.0107	.0002	.0054	.0001	.0001	.0042
%RSD	939.3	40.90	6.747	34.52	222.0	36.46	829.6
#1	.0003	-.0293	.0037	.0186	.0002	.0005	.0006
#2	-.0008	-.0348	.0032	.0186	.0001	.0003	-.0051
#3	.0003	-.0142	.0033	.0093	-.0001	.0002	.0030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Ca1840	Cd2288	Co2286	Cr2835	Cu2178	Fe2599	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0011	.0002	.0003	.0013	<.0000	.0024	<.0000
Stddev	.0020	.0001	.0003	.0005	.0008	.0017	.0190
%RSD	173.2	54.75	94.95	37.06	68.80	70.31	304.1
#1	.0028	.0001	.0000	.0019	-.0003	.0041	.0058
#2	.0018	.0002	.0006	.0012	-.0016	.0023	.0036
#3	-.0011	.0003	.0005	.0010	-.0018	.0007	-.0282
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Li6707	Mg2798	Mn2576	Mo2020	Na5895	Ni2216	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0012	<.0000	.0001	<.0000	.0101	.0001	<.0000
Stddev	.0007	.0157	.0002	.0006	.0010	.0003	.0034
%RSD	54.19	504.4	212.6	396.5	9.864	215.6	362.3
#1	.0005	.0150	.0003	.0000	.0111	.0000	-.0043
#2	.0019	-.0109	.0000	-.0009	.0099	.0004	-.0010
#3	.0013	-.0135	-.0001	.0003	.0092	.0000	.0025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: ICB Acquired: 11/13/2014 16:43:52 Type: QC
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0023	.0026	.0017	.0036	<.0000	<.0000	.0004
Stddev	.0007	.0012	.0027	.0049	.0036	.0006	.0002
%RSD	28.62	46.74	160.8	135.3	161.6	169.5	40.73
#1	.0024	.0025	.0046	.0030	.0015	.0000	.0005
#2	.0030	.0014	.0008	.0088	-.0026	-.0011	.0004
#3	.0016	.0038	-.0004	-.0009	-.0056	.0000	.0002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0004	<.0000	W<.0000	<.0000	.0003
Stddev	.0010	.0004	.0015	.0149	.0028	.0001
%RSD	12.40	112.6	414.1	14.72	1317.	21.97
#1	-.0072	.0005	.0001	-.0847	-.0032	.0003
#2	-.0090	.0007	.0008	-.1064	.0003	.0003
#3	-.0089	-.0001	-.0021	-.1133	.0023	.0002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass
High Limit				.0470		
Low Limit				-.0470		

Int. Std.	Y_3710
Units	Cts/S
Avg	3641.0
Stddev	43.4
%RSD	1.1926
#1	3604.0
#2	3630.2
#3	3688.8

Sample Name: LLC Acquired: 11/13/2014 16:47:48 Type: QC
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0104**	**.1714**	**.0114**	**.0598**	**.0500**	**.0052**	**.2052**	**1.113**
Stddev	.0010	.0097	.0020	.0029	.0001	.0001	.0039	.007
%RSD	9.499	5.664	17.59	4.931	.2561	1.042	1.887	.6603
#1	.0116	.1826	.0097	.0584	.0500	.0053	.2081	1.110
#2	.0097	.1654	.0109	.0632	.0498	.0052	.2008	1.107
#3	.0100	.1663	.0136	.0578	.0500	.0053	.2067	1.121
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Cd2288	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0052**	**.0549**	**.0092**	**.0244**	**.1040**	**4.865**	**.0518**	**1.000**
Stddev	.0001	.0002	.0003	.0011	.0037	.012	.0013	.004
%RSD	2.136	.2973	3.720	4.398	3.527	.2370	2.571	.3729
#1	.0053	.0549	.0095	.0255	.1072	4.860	.0533	1.004
#2	.0051	.0547	.0093	.0242	.1000	4.878	.0507	.9964
#3	.0052	.0551	.0089	.0234	.1047	4.857	.0516	1.000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mn2576	Mo2020	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0148**	**.0413**	**.9938**	**.0448**	**.2532**	W **.0126**	**5.054**	**.0115**
Stddev	.0000	.0005	.0086	.0003	.0035	.0018	.039	.0015
%RSD	.2756	1.162	.8647	.6286	1.385	14.05	.7756	12.84
#1	.0148	.0409	1.003	.0446	.2555	.0133	5.030	.0130
#2	.0148	.0412	.9858	.0446	.2491	.0139	5.034	.0115
#3	.0149	.0418	.9926	.0451	.2549	.0106	5.099	.0100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass
Value						.0100		
Range						20.00%		

Sample Name: LLC Acquired: 11/13/2014 16:47:48 Type: QC
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2516	Sn1899	Sr4077	Th2832	Ti3349	Tl1908	U_3670
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0133**	**.3805**	**.1057**	**.0051**	**.1880**	**.0198**	**.0225**	**.4340**
Stddev	.0027	.0097	.0005	.0000	.0007	.0006	.0013	.0153
%RSD	20.08	2.550	.4963	.9264	.3502	3.244	5.695	3.525
#1	.0151	.3695	.1052	.0052	.1886	.0205	.0236	.4359
#2	.0145	.3847	.1055	.0051	.1880	.0192	.0226	.4179
#3	.0102	.3875	.1063	.0051	.1873	.0197	.0211	.4483
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	V_2908	Zn2138
Units	ppm	ppm
Avg	**.0495**	**.0213**
Stddev	.0039	.0001
%RSD	7.870	.5913
#1	.0510	.0213
#2	.0524	.0212
#3	.0451	.0215
Check ?	Chk Pass	Chk Pass
Value		
Range		

Int. Std.	Y_3710
Units	Cts/S
Avg	**3720.6**
Stddev	18.7
%RSD	.50228
#1	3701.9
#2	3739.2
#3	3720.6

Sample Name: ICSA Acquired: 11/13/2014 16:51:43 Type: QC
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0010**	**99.97**	**.0015**	W<**.0000**	**.0001**	**.0001**	**.0148**
Stddev	.0014	.27	.0002	.0033	.0001	.0001	.0032
%RSD	137.5	.2735	13.13	9.719	78.98	91.84	21.61
#1	.0019	99.82	.0016	-.0312	.0001	.0001	.0112
#2	-.0006	99.79	.0013	-.0342	.0002	.0000	.0173
#3	.0018	100.3	.0016	-.0378	.0000	.0001	.0158
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass
High Limit				.0324			
Low Limit				-.0324			

Elem	Ca1840	Cd2288	Co2286	Cr2835	Cu2178	Fe2599	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**103.0**	<**.0000**	**.0016**	<**.0000**	<**.0000**	**99.92**	**99.19**
Stddev	2.2	.0003	.0008	.0013	.0014	.45	.22
%RSD	2.178	43.95	47.86	127.7	97.03	.4523	.2237
#1	100.6	-.0007	.0008	-.0025	-.0027	99.87	99.18
#2	103.3	-.0005	.0017	-.0006	-.0017	99.50	98.97
#3	105.0	-.0012	.0022	.0000	.0001	100.4	99.42
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Li6707	Mg2798	Mn2576	Mo2020	Na5895	Ni2216	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0039**	**101.1**	W **.0043**	<**.0000**	**99.23**	**.0012**	**102.7**
Stddev	.0007	.8	.0001	.0002	.15	.0003	2.2
%RSD	17.19	.7446	3.395	30.62	.1522	21.30	2.111
#1	.0046	100.5	.0043	-.0006	99.26	.0014	100.4
#2	.0037	100.9	.0041	-.0011	99.07	.0009	103.1
#3	.0033	102.0	.0044	-.0007	99.37	.0014	104.7
Check ?	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			.0031				
Low Limit			-.0031				

Sample Name: ICSA Acquired: 11/13/2014 16:51:43 Type: QC
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	104.6	.0038	<.0000	<.0000	<.0000	W<.0000
Stddev	.0017	2.4	.0032	.0012	.0045	.0010	.0001
%RSD	153.7	2.251	84.32	35.66	51.73	56.76	1.433
#1	-.0011	102.0	.0009	-.0026	-.0042	-.0006	-.0042
#2	-.0027	105.1	.0032	-.0047	-.0132	-.0025	-.0043
#3	.0006	106.7	.0072	-.0027	-.0086	-.0023	-.0043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn
High Limit							.0011
Low Limit							-.0011

Elem	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0305	.0040	.0021	W<.0000	<.0000	<.0000
Stddev	.0016	.0003	.0008	.0594	.0014	.0004
%RSD	5.119	7.609	35.69	15.30	158.2	4.094
#1	.0287	.0036	.0024	-.4564	-.0009	-.0094
#2	.0311	.0040	.0013	-.3531	-.0023	-.0088
#3	.0317	.0042	.0027	-.3541	.0005	-.0088
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass
High Limit				.0470		
Low Limit				-.0470		

Int. Std.	Y_3710
Units	Cts/S
Avg	3590.3
Stddev	53.4
%RSD	1.4871
#1	3643.9
#2	3589.9
#3	3537.1

Sample Name: ICSAB Acquired: 11/13/2014 16:55:34 Type: QC
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.4969**	**98.44**	**2.459**	**2.452**	**2.510**	**2.522**	**2.486**	**96.94**	**2.489**
Stddev	.0071	.27	.045	.011	.008	.009	.056	1.64	.047
%RSD	1.431	.2776	1.831	.4501	.3330	.3471	2.248	1.692	1.870
#1	.5039	98.74	2.464	2.464	2.519	2.532	2.488	97.23	2.491
#2	.4897	98.21	2.412	2.444	2.503	2.515	2.429	95.17	2.441
#3	.4970	98.36	2.501	2.446	2.507	2.521	2.540	98.41	2.534
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.483**	**2.418**	**2.482**	**97.14**	**98.39**	**2.463**	**98.35**	**2.416**	**.4963**
Stddev	.046	.028	.051	.55	.42	.011	.30	.009	.0104
%RSD	1.862	1.150	2.056	.5706	.4243	.4353	.3053	.3907	2.087
#1	2.488	2.444	2.486	97.75	98.87	2.475	98.66	2.427	.4963
#2	2.435	2.388	2.428	96.67	98.07	2.454	98.06	2.408	.4859
#3	2.527	2.421	2.530	97.00	98.24	2.459	98.34	2.414	.5066
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**99.17**	**2.447**	**97.48**	**2.444**	**99.39**	**.4951**	**.4928**	**2.488**	**2.441**
Stddev	.26	.043	1.73	.044	1.87	.0088	.0067	.018	.044
%RSD	.2655	1.773	1.774	1.796	1.877	1.776	1.360	.7225	1.813
#1	99.44	2.452	97.68	2.454	99.37	.5006	.4910	2.507	2.448
#2	98.92	2.401	95.67	2.397	97.53	.4850	.4872	2.472	2.394
#3	99.15	2.487	99.11	2.483	101.3	.4997	.5003	2.486	2.482
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: ICSAB Acquired: 11/13/2014 16:55:34 Type: QC
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.514**	**2.454**	**2.473**	**.4973**	**2.095**	**2.433**	**2.506**
Stddev	.005	.022	.009	.0105	.074	.006	.047
%RSD	.2085	.8951	.3678	2.113	3.558	.2321	1.888
#1	2.520	2.473	2.483	.4985	2.117	2.438	2.509
#2	2.510	2.430	2.465	.4862	2.012	2.427	2.457
#3	2.512	2.458	2.471	.5071	2.156	2.435	2.552
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**3734.0**
Stddev	41.9
%RSD	1.1221
#1	3710.3
#2	3782.4
#3	3709.4

Sample Name: LDR Acquired: 11/13/2014 16:59:02 Type: QC
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.044**	**101.9**	**10.28**	**10.09**	**10.28**	**9.973**	**10.32**	**101.4**	**10.31**
Stddev	.007	.2	.08	.04	.12	.029	.08	.3	.06
%RSD	.3212	.2202	.7463	.3629	1.184	.2896	.7472	.3435	.6136
#1	2.043	101.6	10.19	10.07	10.18	10.01	10.23	101.0	10.24
#2	2.051	102.1	10.31	10.13	10.41	9.951	10.36	101.6	10.34
#3	2.039	101.9	10.33	10.07	10.23	9.963	10.36	101.5	10.35
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.19**	**10.00**	**10.36**	**99.53**	**100.6**	**10.08**	**101.2**	**10.05**	**2.059**
Stddev	.06	.02	.07	.34	.2	.03	.3	.03	.011
%RSD	.5511	.1523	.6704	.3379	.2466	.2644	.2523	.2596	.5308
#1	10.12	9.993	10.29	99.32	100.4	10.07	100.9	10.03	2.046
#2	10.22	10.02	10.40	99.92	100.8	10.11	101.4	10.08	2.066
#3	10.22	9.999	10.41	99.35	100.5	10.06	101.3	10.06	2.064
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**101.6**	**10.15**	**101.0**	**10.16**	**102.4**	**2.065**	**2.050**	**9.998**	**10.15**
Stddev	.3	.06	.6	.07	.7	.017	.018	.020	.07
%RSD	.2927	.5801	.5506	.6955	.6673	.8406	.8948	.2032	.6996
#1	101.5	10.09	100.4	10.08	101.6	2.045	2.031	10.00	10.07
#2	101.9	10.19	101.3	10.18	102.7	2.072	2.051	10.02	10.18
#3	101.4	10.19	101.4	10.22	102.8	2.078	2.067	9.976	10.20
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: LDR Acquired: 11/13/2014 16:59:02 Type: QC
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.06**	**10.16**	**10.04**	**2.033**	**10.28**	**10.14**	**10.21**
Stddev	.01	.05	.03	.006	.04	.04	.07
%RSD	.1250	.4736	.3028	.3171	.3518	.3586	.6512
#1	10.05	10.13	10.02	2.026	10.28	10.10	10.14
#2	10.07	10.21	10.07	2.034	10.32	10.15	10.25
#3	10.05	10.14	10.02	2.039	10.25	10.18	10.26
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**3549.0**
Stddev	8.4
%RSD	.23696
#1	3558.0
#2	3541.4
#3	3547.6

Sample Name: CCV Acquired: 11/13/2014 17:02:54 Type: QC
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.030**	**49.40**	**5.087**	**4.996**	**5.074**	**5.019**	**5.124**	**51.34**	**5.108**
Stddev	.026	.31	.154	.025	.021	.125	.144	1.51	.144
%RSD	2.523	.6372	3.028	.5051	.4039	2.483	2.810	2.937	2.826
#1	1.052	49.76	5.220	5.024	5.067	5.105	5.248	52.65	5.235
#2	1.036	49.27	5.123	4.991	5.097	5.076	5.157	51.67	5.138
#3	1.001	49.16	4.919	4.974	5.059	4.876	4.966	49.69	4.951
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.138**	**5.098**	**5.119**	**49.65**	**49.45**	**5.005**	**49.16**	**4.965**	**1.026**
Stddev	.148	.135	.144	.36	.32	.015	.68	.047	.030
%RSD	2.881	2.638	2.821	.7178	.6425	.3017	1.392	.9506	2.901
#1	5.270	5.209	5.243	50.03	49.81	5.018	49.83	5.017	1.052
#2	5.167	5.137	5.152	49.61	49.33	4.988	49.20	4.954	1.032
#3	4.978	4.949	4.960	49.32	49.21	5.007	48.46	4.925	.9936
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**50.01**	**5.136**	**52.00**	**5.128**	**51.18**	**1.018**	**1.017**	**4.976**	**5.111**
Stddev	.20	.146	1.43	.155	1.39	.028	.026	.040	.142
%RSD	.4045	2.846	2.744	3.018	2.715	2.756	2.514	.7940	2.776
#1	50.25	5.262	53.22	5.266	52.35	1.042	1.042	5.012	5.237
#2	49.89	5.169	52.35	5.159	51.53	1.024	1.017	4.982	5.140
#3	49.90	4.976	50.43	4.961	49.64	.9870	.9906	4.934	4.957
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: CCV Acquired: 11/13/2014 17:02:54 Type: QC
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.973**	**5.111**	**4.999**	**1.034**	**5.098**	**5.007**	**5.132**
Stddev	.134	.117	.019	.034	.277	.058	.147
%RSD	2.692	2.299	.3765	3.275	5.431	1.156	2.857
#1	5.122	5.201	5.018	1.064	5.314	5.070	5.260
#2	4.933	5.153	4.996	1.040	5.193	4.994	5.164
#3	4.863	4.978	4.981	.9972	4.786	4.956	4.972
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**3719.7**
Stddev	112.6
%RSD	3.0264
#1	3619.7
#2	3697.8
#3	3841.7

Sample Name: CCB Acquired: 11/13/2014 17:06:43 Type: QC
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0007**	**<.0000**	**.0006**	**.0170**	**.0001**	**.0004**	**<.0000**
Stddev	.0009	.0153	.0022	.0026	.0001	.0000	.0022
%RSD	127.4	1515.	355.1	15.32	200.6	9.461	93.17
#1	-.0003	-.0147	.0004	.0169	-.0001	.0003	-.0002
#2	.0012	-.0039	-.0015	.0196	.0001	.0004	-.0023
#3	.0013	.0156	.0030	.0144	.0001	.0004	-.0045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Ca1840	Cd2288	Co2286	Cr2835	Cu2178	Fe2599	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0021**	**.0003**	**.0001**	**.0020**	**<.0000**	**.0052**	**<.0000**
Stddev	.0004	.0001	.0003	.0002	.0017	.0006	.0218
%RSD	17.07	48.72	244.5	9.983	299.7	10.78	105.1
#1	.0025	.0004	.0003	.0019	.0014	.0047	.0035
#2	.0019	.0002	.0002	.0022	-.0018	.0050	-.0387
#3	.0020	.0002	-.0002	.0019	-.0013	.0058	-.0270
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Li6707	Mg2798	Mn2576	Mo2020	Na5895	Ni2216	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0006**	**<.0000**	**<.0000**	**<.0000**	**.0192**	**<.0000**	**.0012**
Stddev	.0005	.0039	.0003	.0003	.0029	.0003	.0010
%RSD	95.82	44.05	189.1	93.94	15.00	176.8	79.30
#1	.0009	-.0045	-.0004	-.0007	.0219	-.0001	.0020
#2	-.0001	-.0100	-.0002	-.0001	.0196	.0001	.0015
#3	.0008	-.0121	.0001	-.0002	.0162	-.0005	.0002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: CCB Acquired: 11/13/2014 17:06:43 Type: QC
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W .0028	.0052	.0014	<.0000	<.0000	.0006	.0004
Stddev	.0019	.0021	.0024	.0016	.0071	.0007	.0001
%RSD	70.04	40.82	177.2	10650.	64.45	116.7	23.74
#1	.0007	.0042	-.0013	.0008	-.0034	.0009	.0004
#2	.0031	.0038	.0021	.0010	-.0176	.0010	.0005
#3	.0045	.0077	.0033	-.0019	-.0122	-.0002	.0004
Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	.0025						
Low Limit	-.0025						

Elem	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0000	.0009	W<.0000	.0010	.0002
Stddev	.0013	.0005	.0014	.0491	.0019	.0000
%RSD	20.19	2222.	164.5	17.52	188.2	10.23
#1	-.0056	.0001	.0001	-.2260	-.0001	.0002
#2	-.0081	.0005	.0000	-.2933	-.0001	.0002
#3	-.0061	-.0005	.0025	-.3215	.0031	.0002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass
High Limit				.0480		
Low Limit				-.0470		

Int. Std.	Y_3710
Units	Cts/S
Avg	3953.1
Stddev	17.8
%RSD	.44987
#1	3938.8
#2	3973.0
#3	3947.5

Sample Name: 160-9053-B-1-A Acquired: 11/13/2014 17:10:42 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=50

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0013**	**.0337**	**.0013**	**.0272**	**.0004**	**.0001**	**<.0000**	**1.002**	**.0001**
Stddev	.0008	.0091	.0020	.0035	.0001	.0001	.0034	.001	.0003
%RSD	63.77	27.08	159.8	12.71	20.50	70.74	215.6	.0945	223.1
#1	.0019	.0424	.0024	.0280	.0004	.0001	-.0029	1.002	-.0001
#2	.0015	.0346	.0025	.0234	.0005	.0002	-.0042	1.001	.0001
#3	.0004	.0242	-.0011	.0302	.0004	.0000	.0023	1.003	.0004
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000**	**.0010**	**<.0000**	**.0640**	**.9805**	**.0003**	**2.092**	**.0058**	**<.0000**
Stddev	.0001	.0016	.0006	.0010	.0182	.0011	.020	.0003	.0003
%RSD	445.0	159.5	49.99	1.512	1.856	386.7	.9704	4.523	132.4
#1	.0001	.0020	-.0012	.0651	.9892	-.0008	2.092	.0058	-.0004
#2	.0001	-.0008	-.0019	.0633	.9927	.0002	2.112	.0055	.0001
#3	-.0001	.0018	-.0007	.0636	.9596	.0014	2.072	.0060	-.0005
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**17.30**	**<.0000**	**.1775**	**.0025**	**.4149**	**.0015**	**.0007**	**.5531**	**<.0000**
Stddev	.03	.0002	.0003	.0006	.0046	.0037	.0022	.0029	.0011
%RSD	.1474	402.6	.1962	25.24	1.117	239.7	310.3	.5267	4413.
#1	17.27	-.0001	.1776	.0029	.4096	.0022	.0033	.5550	-.0012
#2	17.32	.0002	.1771	.0018	.4178	-.0024	-.0002	.5498	.0010
#3	17.30	-.0002	.1778	.0027	.4175	.0048	-.0009	.5546	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9053-B-1-A Acquired: 11/13/2014 17:10:42 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=50

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0148**	**<.0000**	**.0010**	**.0001**	**<.0000**	**.0007**	**.0035**
Stddev	.0000	.0045	.0009	.0027	.0187	.0032	.0004
%RSD	.1640	55.72	91.51	2038.	6.977	446.8	10.11
#1	.0148	-.0130	.0006	.0002	-.2896	-.0019	.0032
#2	.0148	-.0043	.0004	-.0026	-.2611	-.0002	.0034
#3	.0148	-.0068	.0021	.0028	-.2543	.0043	.0039
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**3745.5**
Stddev	18.8
%RSD	.50158
#1	3762.3
#2	3749.0
#3	3725.2

Sample Name: 160-9053-B-2-A Acquired: 11/13/2014 17:14:38 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0005**	**.0667**	**.0008**	**.0195**	**.0018**	**.0000**	**.0003**	**1.801**	**.0000**
Stddev	.0007	.0025	.0018	.0028	.0001	.0001	.0029	.019	.0001
%RSD	149.9	3.791	229.0	14.53	7.075	129.7	846.8	1.063	925.1
#1	.0013	.0663	.0015	.0205	.0019	.0000	.0000	1.818	.0000
#2	-.0001	.0694	.0022	.0163	.0018	.0001	.0034	1.804	.0001
#3	.0002	.0644	-.0013	.0216	.0016	.0000	-.0024	1.780	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0003**	**.0009**	**<.0000**	**.0419**	**1.307**	**.0018**	**3.751**	**.0325**	**<.0000**
Stddev	.0002	.0013	.0004	.0011	.030	.0008	.018	.0003	.0002
%RSD	65.12	133.0	227.5	2.714	2.263	45.11	.4789	.7806	68.15
#1	.0001	.0020	-.0006	.0407	1.308	.0009	3.771	.0328	-.0005
#2	.0005	-.0004	-.0001	.0419	1.336	.0021	3.744	.0323	-.0001
#3	.0002	.0012	.0002	.0430	1.277	.0024	3.737	.0324	-.0004
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**30.91**	**.0000**	**.0714**	**.0009**	**.4991**	**.0004**	**<.0000**	**.3996**	**<.0000**
Stddev	.05	.0004	.0020	.0016	.0066	.0034	.0031	.0038	.0004
%RSD	.1558	2036.	2.800	173.3	1.318	933.7	1879.	.9408	156.0
#1	30.94	-.0001	.0705	.0025	.5048	.0024	-.0008	.3961	-.0002
#2	30.93	.0004	.0737	-.0006	.5007	-.0035	-.0029	.4036	-.0007
#3	30.85	-.0003	.0700	.0007	.4919	.0022	.0032	.3991	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9053-B-2-A Acquired: 11/13/2014 17:14:38 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0257	<.0000	.0009	.0015	<.0000	<.0000	.0036
Stddev	.0001	.0023	.0004	.0009	.0337	.0010	.0001
%RSD	.2725	22.25	39.15	57.48	35.19	86.92	3.173
#1	.0257	-.0124	.0008	.0024	-.0625	-.0005	.0035
#2	.0257	-.0110	.0006	.0007	-.1298	-.0024	.0037
#3	.0256	-.0079	.0013	.0014	-.0946	-.0007	.0036
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3728.7
Stddev	55.6
%RSD	1.4902
#1	3675.1
#2	3725.1
#3	3786.0

Sample Name: 160-9053-B-2-A SD Acquired: 11/13/2014 17:18:33 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=250

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0003**	**.0166**	**.0015**	**.0062**	**.0000**	**.0000**	**<.0000**	**.3781**	**.0002**
Stddev	.0012	.0020	.0011	.0037	.0001	.0001	.0022	.0053	.0002
%RSD	396.3	12.13	74.71	59.70	4273.	36920.	271.9	1.397	93.72
#1	-.0006	.0187	.0021	.0022	.0001	.0000	-.0029	.3841	.0004
#2	.0017	.0147	.0022	.0096	-.0001	.0001	.0016	.3762	.0003
#3	-.0002	.0165	.0002	.0069	.0000	.0000	-.0012	.3741	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0002**	**.0007**	**.0001**	**.0157**	**.2370**	**<.0000**	**.7807**	**.0067**	**<.0000**
Stddev	.0005	.0006	.0003	.0017	.0088	.0013	.0127	.0001	.0001
%RSD	230.6	84.64	269.3	10.93	3.700	278.8	1.626	1.989	24.26
#1	-.0003	.0005	.0005	.0161	.2283	.0003	.7913	.0067	-.0005
#2	.0007	.0002	-.0001	.0172	.2368	.0003	.7666	.0069	-.0005
#3	.0003	.0014	.0000	.0139	.2459	-.0019	.7842	.0067	-.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**6.504**	**.0004**	**.0129**	**.0019**	**.1090**	**.0020**	**.0015**	**.0821**	**<.0000**
Stddev	.012	.0003	.0004	.0005	.0037	.0020	.0011	.0034	.0004
%RSD	.1846	74.65	3.430	29.23	3.430	100.7	71.69	4.090	104.0
#1	6.496	.0005	.0133	.0025	.1058	.0023	.0004	.0808	.0001
#2	6.518	.0001	.0124	.0015	.1131	-.0002	.0016	.0859	-.0007
#3	6.499	.0007	.0128	.0016	.1082	.0037	.0026	.0796	-.0007
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9053-B-2-A SD Acquired: 11/13/2014 17:18:33 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=250

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0054	<.0000	<.0000	.0021	<.0000	<.0000	.0067
Stddev	.0001	.0019	.0003	.0016	.0799	.0026	.0001
%RSD	2.116	20.67	166.1	74.74	32.49	4590.	1.347
#1	.0053	-.0112	-.0001	.0032	-.1540	.0006	.0068
#2	.0054	-.0080	-.0005	.0003	-.2985	.0022	.0067
#3	.0055	-.0079	.0001	.0028	-.2853	-.0030	.0067
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3819.1
Stddev	56.5
%RSD	1.4785
#1	3760.3
#2	3824.1
#3	3872.9

Sample Name: 160-9053-B-2-B MS Acquired: 11/13/2014 17:22:29 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0050**	**.4099**	**.0204**	**.0582**	**.0228**	**.0208**	**.0183**	**2.022**	**.0203**
Stddev	.0011	.0042	.0017	.0021	.0001	.0001	.0012	.027	.0002
%RSD	22.22	1.018	8.427	3.524	.6475	.3745	6.741	1.348	.8708
#1	.0059	.4137	.0202	.0606	.0228	.0207	.0169	2.000	.0201
#2	.0055	.4106	.0188	.0570	.0229	.0209	.0193	2.014	.0204
#3	.0038	.4055	.0222	.0570	.0226	.0208	.0188	2.053	.0204
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0217**	**.0223**	**.0226**	**.2955**	**1.572**	**.0187**	**4.154**	**.0538**	**.0103**
Stddev	.0002	.0007	.0029	.0031	.036	.0006	.031	.0004	.0006
%RSD	1.023	3.107	13.00	1.042	2.287	2.972	.7358	.7717	6.060
#1	.0217	.0218	.0229	.2935	1.559	.0185	4.122	.0541	.0102
#2	.0214	.0220	.0253	.2990	1.613	.0184	4.183	.0533	.0098
#3	.0219	.0231	.0195	.2940	1.545	.0194	4.156	.0540	.0110
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**32.72**	**.0215**	**.0962**	**.0242**	**.7180**	**.0098**	**.0056**	**.6861**	**.0203**
Stddev	.02	.0006	.0023	.0014	.0016	.0020	.0031	.0074	.0005
%RSD	.0641	2.626	2.372	5.898	.2185	20.65	56.65	1.079	2.420
#1	32.74	.0208	.0937	.0234	.7180	.0100	.0089	.6842	.0205
#2	32.71	.0217	.0967	.0233	.7165	.0076	.0027	.6798	.0197
#3	32.71	.0219	.0982	.0258	.7196	.0117	.0051	.6943	.0206
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9053-B-2-B MS Acquired: 11/13/2014 17:22:29 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0478	.0067	.0218	.0065	<.0000	.0206	.0250
Stddev	.0001	.0036	.0000	.0015	.0161	.0032	.0004
%RSD	.1147	54.08	.1161	23.20	4.134	15.37	1.752
#1	.0479	.0036	.0218	.0070	-.4028	.0227	.0246
#2	.0478	.0107	.0218	.0077	-.3954	.0221	.0251
#3	.0478	.0060	.0218	.0048	-.3720	.0170	.0254
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3857.6
Stddev	42.8
%RSD	1.1106
#1	3903.7
#2	3850.2
#3	3819.0

Sample Name: 160-9053-B-2-C MSD Acquired: 11/13/2014 17:26:24 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0042**	**.4221**	**.0223**	**.0616**	**.0230**	**.0209**	**.0239**	**2.088**	**.0215**
Stddev	.0007	.0134	.0013	.0014	.0001	.0002	.0028	.052	.0004
%RSD	16.20	3.166	5.639	2.277	.3519	.9559	11.55	2.485	1.881
#1	.0041	.4101	.0236	.0624	.0230	.0207	.0258	2.047	.0211
#2	.0050	.4196	.0211	.0600	.0229	.0209	.0252	2.071	.0215
#3	.0036	.4365	.0222	.0623	.0231	.0211	.0207	2.146	.0219
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0226**	**.0228**	**.0210**	**.3055**	**1.588**	**.0187**	**4.096**	**.0545**	**.0108**
Stddev	.0006	.0020	.0014	.0014	.011	.0018	.031	.0004	.0005
%RSD	2.722	8.924	6.451	.4503	.6912	9.640	.7488	.7806	4.308
#1	.0222	.0226	.0195	.3064	1.598	.0193	4.068	.0541	.0113
#2	.0223	.0249	.0214	.3040	1.591	.0202	4.090	.0549	.0104
#3	.0233	.0208	.0221	.3063	1.576	.0167	4.128	.0546	.0106
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**32.29**	**.0229**	**.0963**	**.0228**	**.7073**	**.0112**	**.0074**	**.7137**	**.0222**
Stddev	.10	.0004	.0027	.0009	.0233	.0013	.0013	.0074	.0001
%RSD	.3220	1.601	2.798	3.798	3.301	11.57	17.56	1.034	.5942
#1	32.18	.0225	.0959	.0228	.6912	.0101	.0067	.7173	.0221
#2	32.30	.0231	.0937	.0237	.6965	.0108	.0089	.7052	.0222
#3	32.39	.0232	.0991	.0219	.7341	.0126	.0065	.7185	.0224
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9053-B-2-C MSD Acquired: 11/13/2014 17:26:24 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0474	.0110	.0221	.0039	<.0000	.0222	.0265
Stddev	.0001	.0045	.0005	.0024	.0959	.0041	.0006
%RSD	.2610	40.43	2.425	62.16	37.49	18.27	2.118
#1	.0473	.0088	.0216	.0064	-.3232	.0188	.0263
#2	.0475	.0081	.0220	.0015	-.2982	.0267	.0261
#3	.0475	.0161	.0227	.0039	-.1460	.0211	.0271
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3698.7
Stddev	50.9
%RSD	1.3749
#1	3733.8
#2	3721.9
#3	3640.4

Sample Name: 160-9053-B-2-A PDS Acquired: 11/13/2014 17:30:17 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0955**	**1.942**	**.0964**	**.5012**	**.4877**	**.0504**	**1.709**	**12.15**	**.0495**
Stddev	.0010	.006	.0031	.0049	.0013	.0002	.025	.14	.0002
%RSD	1.052	.3263	3.248	.9851	.2563	.3647	1.477	1.178	.4670
#1	.0950	1.935	.0928	.4998	.4868	.0502	1.686	12.03	.0492
#2	.0949	1.948	.0984	.5066	.4891	.0505	1.704	12.11	.0496
#3	.0967	1.943	.0981	.4971	.4872	.0505	1.736	12.31	.0497
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.5104**	**.0818**	**.2500**	**1.017**	**48.44**	**.4782**	**13.18**	**.1759**	**.4122**
Stddev	.0052	.0013	.0008	.007	.14	.0016	.11	.0007	.0055
%RSD	1.016	1.638	.3205	.6527	.2963	.3378	.8317	.4119	1.334
#1	.5055	.0807	.2501	1.009	48.29	.4783	13.08	.1752	.4069
#2	.5098	.0815	.2508	1.020	48.57	.4798	13.16	.1759	.4117
#3	.5158	.0833	.2492	1.021	48.46	.4766	13.30	.1766	.4179
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**40.87**	**.4090**	**2.372**	**.1050**	**51.79**	**.1009**	**.1446**	**4.261**	**1.024**
Stddev	.09	.0045	.026	.0004	.70	.0032	.0021	.026	.012
%RSD	.2150	1.112	1.099	.4168	1.361	3.126	1.421	.6013	1.123
#1	40.77	.4060	2.347	.1048	51.18	.1006	.1424	4.241	1.014
#2	40.91	.4068	2.370	.1048	51.62	.0980	.1448	4.253	1.021
#3	40.94	.4142	2.399	.1055	52.56	.1042	.1465	4.290	1.036
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9053-B-2-A PDS Acquired: 11/13/2014 17:30:17 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0744	1.211	.2008	.2063	4.640	.4703	.2078
Stddev	.0001	.027	.0013	.0039	.113	.0028	.0023
%RSD	.1959	2.214	.6311	1.888	2.427	.6060	1.121
#1	.0742	1.209	.1993	.2034	4.604	.4729	.2060
#2	.0745	1.185	.2015	.2048	4.551	.4707	.2069
#3	.0743	1.238	.2015	.2107	4.767	.4673	.2104
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3850.1
Stddev	44.8
%RSD	1.1630
#1	3883.3
#2	3868.0
#3	3799.2

Sample Name: 160-9053-B-3-A Acquired: 11/13/2014 17:33:56 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	.0023	<.0000	.0265	.0010	<.0000	.0006	2.458	<.0000
Stddev	.0005	.0124	.0015	.0030	.0001	.0000	.0019	.023	.0002
%RSD	358.1	529.2	311.8	11.36	12.70	104.0	340.3	.9380	199.3
#1	-.0004	-.0098	.0000	.0297	.0010	.0000	.0017	2.460	-.0001
#2	.0003	.0150	-.0022	.0237	.0010	.0000	.0017	2.479	.0001
#3	.0006	.0018	.0007	.0262	.0012	.0000	-.0017	2.433	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0018	<.0000	.0252	1.524	<.0000	5.424	.0139	<.0000
Stddev	.0003	.0014	.0015	.0010	.012	.0005	.032	.0003	.0001
%RSD	414.6	80.22	56.68	4.002	.7765	95.38	.5870	2.131	24.95
#1	-.0001	.0010	-.0011	.0255	1.538	.0000	5.389	.0137	-.0007
#2	-.0004	.0010	-.0041	.0260	1.516	-.0010	5.435	.0138	-.0005
#3	.0003	.0034	-.0027	.0240	1.519	-.0007	5.449	.0143	-.0005
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	38.37	.0000	.2303	.0036	.3619	<.0000	.0024	.5199	<.0000
Stddev	.05	.0002	.0020	.0014	.0067	.0008	.0020	.0005	.0005
%RSD	.1287	571.9	.8489	38.87	1.849	136.4	84.91	.0973	62.01
#1	38.39	.0003	.2302	.0048	.3693	-.0012	.0036	.5204	-.0012
#2	38.41	-.0002	.2323	.0038	.3599	-.0008	.0000	.5197	-.0009
#3	38.31	.0000	.2284	.0021	.3564	.0003	.0035	.5195	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9053-B-3-A Acquired: 11/13/2014 17:33:56 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0373	<.0000	<.0000	.0006	<.0000	<.0000	.0032
Stddev	.0001	.0016	.0001	.0019	.0415	.0026	.0001
%RSD	.1792	16.93	182.8	297.9	12.75	393.0	3.287
#1	.0373	-.0111	-.0001	.0022	-.2892	-.0013	.0032
#2	.0373	-.0090	-.0002	.0011	-.3175	-.0028	.0031
#3	.0372	-.0080	.0001	-.0015	-.3710	.0022	.0033
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3925.6
Stddev	19.4
%RSD	.49487
#1	3942.0
#2	3904.1
#3	3930.7

Sample Name: 160-9053-B-4-A Acquired: 11/13/2014 17:37:50 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0007	<.0000	.0035	.0240	.0009	<.0000	.0006	2.507	.0000
Stddev	.0016	.0082	.0029	.0018	.0003	.0000	.0026	.020	.0002
%RSD	239.8	53.05	82.67	7.513	30.93	124.0	458.1	.8086	2375.
#1	.0024	-.0155	.0068	.0231	.0012	.0000	.0023	2.488	-.0002
#2	.0001	-.0237	.0015	.0261	.0007	.0000	.0019	2.504	.0002
#3	-.0006	-.0072	.0022	.0228	.0008	.0000	-.0025	2.528	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0014	<.0000	.0202	1.581	<.0000	5.528	.0139	<.0000
Stddev	.0006	.0011	.0020	.0019	.017	.0006	.042	.0004	.0003
%RSD	12820.	75.93	95.08	9.416	1.052	116.0	.7550	2.861	49.71
#1	-.0006	.0019	-.0027	.0189	1.562	.0002	5.491	.0134	-.0007
#2	.0006	.0021	-.0038	.0224	1.594	-.0008	5.520	.0142	-.0006
#3	.0000	.0002	.0001	.0194	1.588	-.0009	5.573	.0139	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	38.57	.0005	.2306	.0026	.3102	.0034	<.0000	.5162	<.0000
Stddev	.13	.0003	.0027	.0012	.0078	.0058	.0023	.0016	.0008
%RSD	.3402	53.54	1.153	44.83	2.504	167.1	108.7	.3082	194.0
#1	38.45	.0008	.2276	.0035	.3034	.0083	-.0045	.5176	.0005
#2	38.55	.0003	.2315	.0013	.3085	-.0029	-.0018	.5165	-.0010
#3	38.71	.0004	.2327	.0029	.3187	.0049	.0000	.5145	-.0006
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9053-B-4-A Acquired: 11/13/2014 17:37:50 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0375	<.0000	.0001	.0013	<.0000	.0024	.0041
Stddev	.0001	.0052	.0003	.0008	.0308	.0026	.0000
%RSD	.3304	58.30	381.2	61.46	9.262	109.4	1.196
#1	.0374	-.0102	.0002	.0006	-.3664	.0000	.0042
#2	.0373	-.0033	.0002	.0012	-.3234	.0020	.0042
#3	.0376	-.0135	-.0002	.0022	-.3067	.0051	.0041
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3754.8
Stddev	42.1
%RSD	1.1222
#1	3794.6
#2	3759.0
#3	3710.7

Sample Name: 160-9053-D-6-A Acquired: 11/13/2014 17:41:43 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	.0028	.0227	.0010	.0000	.0026	2.516	.0000
Stddev	.0003	.0047	.0018	.0016	.0001	.0001	.0046	.017	.0001
%RSD	412.4	66.82	66.05	7.175	7.954	709.3	175.3	.6771	254.6
#1	-.0003	-.0082	.0044	.0209	.0010	.0001	.0044	2.533	-.0001
#2	.0003	-.0109	.0031	.0232	.0009	.0000	-.0026	2.499	.0000
#3	-.0003	-.0018	.0008	.0240	.0010	.0000	.0060	2.516	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0025	<.0000	.0159	1.773	.0000	5.892	.0007	<.0000
Stddev	.0004	.0015	.0015	.0024	.036	.0004	.007	.0003	.0003
%RSD	3905.	58.90	55.91	15.13	2.032	867.0	.1114	46.60	81.59
#1	.0004	.0043	-.0026	.0179	1.770	-.0004	5.897	.0007	-.0007
#2	.0000	.0015	-.0044	.0132	1.739	.0003	5.894	.0009	-.0002
#3	-.0004	.0018	-.0013	.0167	1.811	.0002	5.884	.0003	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	50.02	<.0000	.0034	.0015	4.197	<.0000	.0021	.0300	.0002
Stddev	.08	.0003	.0015	.0006	.028	.0011	.0031	.0061	.0003
%RSD	.1545	90.64	43.80	40.87	.6628	167.8	144.6	20.33	171.5
#1	49.97	-.0006	.0051	.0010	4.205	-.0013	.0032	.0361	.0005
#2	49.99	.0000	.0025	.0022	4.167	.0006	.0046	.0239	.0001
#3	50.11	-.0004	.0025	.0013	4.221	-.0013	-.0013	.0302	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9053-D-6-A Acquired: 11/13/2014 17:41:43 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0374	<.0000	.0001	.0024	<.0000	.0020	.0037
Stddev	.0002	.0049	.0004	.0010	.0851	.0048	.0002
%RSD	.4362	97.22	431.3	41.79	31.02	235.6	4.116
#1	.0373	.0004	.0004	.0018	-.2355	.0075	.0038
#2	.0373	-.0090	-.0003	.0035	-.2154	-.0003	.0038
#3	.0376	-.0064	.0001	.0018	-.3718	-.0011	.0035
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3715.8
Stddev	34.0
%RSD	.91535
#1	3677.2
#2	3728.8
#3	3741.4

Sample Name: 160-9053-D-7-A Acquired: 11/13/2014 17:45:36 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**.0012**	**<.0000**	**.0209**	**.0009**	**<.0000**	**<.0000**	**2.477**	**.0002**
Stddev	.0008	.0049	.0012	.0009	.0001	.0000	.0052	.048	.0000
%RSD	1101.	413.2	98.58	4.185	7.042	440.1	265.1	1.927	16.42
#1	.0006	-.0007	-.0020	.0219	.0010	.0000	-.0052	2.526	.0002
#2	.0004	-.0025	.0002	.0206	.0009	.0000	.0040	2.473	.0003
#3	-.0008	.0067	-.0020	.0202	.0009	.0000	-.0047	2.431	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0002**	**.0033**	**<.0000**	**.0151**	**1.788**	**<.0000**	**5.891**	**.0005**	**<.0000**
Stddev	.0003	.0013	.0017	.0006	.034	.0006	.070	.0004	.0003
%RSD	182.0	41.07	70.42	4.292	1.882	148.8	1.181	67.17	206.1
#1	.0003	.0035	-.0023	.0144	1.779	-.0003	5.934	.0008	.0001
#2	-.0002	.0045	-.0008	.0153	1.760	-.0011	5.927	.0001	.0000
#3	.0004	.0018	-.0042	.0157	1.826	.0001	5.810	.0007	-.0005
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**49.59**	**.0001**	**.0010**	**.0016**	**4.183**	**<.0000**	**.0032**	**.0280**	**<.0000**
Stddev	.18	.0003	.0016	.0018	.073	.0015	.0007	.0040	.0007
%RSD	.3688	241.7	162.3	111.6	1.755	253.1	21.04	14.22	2616.
#1	49.38	.0004	.0029	.0009	4.259	.0012	.0025	.0257	.0003
#2	49.73	-.0002	-.0002	.0003	4.177	-.0016	.0038	.0326	.0004
#3	49.66	.0002	.0004	.0037	4.112	-.0013	.0034	.0257	-.0008
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9053-D-7-A Acquired: 11/13/2014 17:45:36 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0374	<.0000	.0004	<.0000	<.0000	.0028	.0030
Stddev	.0003	.0024	.0001	.0015	.0503	.0009	.0004
%RSD	.7105	20.39	39.46	359.4	16.80	33.16	12.34
#1	.0371	-.0145	.0004	.0006	-.2793	.0036	.0035
#2	.0376	-.0103	.0002	-.0022	-.2622	.0018	.0029
#3	.0375	-.0104	.0005	.0003	-.3566	.0030	.0027
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3855.6
Stddev	74.6
%RSD	1.9358
#1	3786.4
#2	3845.8
#3	3934.7

Sample Name: CCV Acquired: 11/13/2014 17:49:31 Type: QC
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.007**	**49.81**	**5.017**	**4.954**	**5.026**	**4.987**	**5.027**	**50.95**	**5.023**
Stddev	.004	.13	.028	.012	.113	.027	.029	.20	.020
%RSD	.3520	.2635	.5580	.2481	2.241	.5350	.5660	.3984	.3979
#1	1.005	49.68	4.985	4.941	4.900	4.963	4.997	50.72	5.001
#2	1.005	49.94	5.037	4.953	5.062	5.016	5.033	51.02	5.029
#3	1.011	49.83	5.030	4.966	5.116	4.983	5.053	51.11	5.040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.054**	**4.928**	**5.018**	**48.94**	**49.57**	**4.993**	**49.43**	**4.954**	**1.014**
Stddev	.022	.025	.022	.09	.13	.004	.34	.021	.005
%RSD	.4345	.5183	.4441	.1775	.2542	.0753	.6868	.4233	.4502
#1	5.029	4.928	4.993	48.86	49.51	4.996	49.04	4.931	1.009
#2	5.060	4.902	5.026	49.03	49.72	4.995	49.57	4.973	1.016
#3	5.072	4.953	5.036	48.93	49.49	4.989	49.67	4.956	1.018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**50.58**	**5.058**	**51.56**	**5.045**	**50.88**	**1.002**	**1.002**	**4.932**	**5.025**
Stddev	.08	.021	.19	.023	.11	.003	.010	.021	.019
%RSD	.1651	.4192	.3625	.4583	.2222	.3038	.9634	.4328	.3705
#1	50.48	5.034	51.34	5.019	50.75	.9981	.9918	4.908	5.006
#2	50.63	5.066	51.65	5.053	50.97	1.004	1.003	4.941	5.025
#3	50.62	5.074	51.69	5.063	50.93	1.003	1.011	4.948	5.043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: CCV Acquired: 11/13/2014 17:49:31 Type: QC
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.026**	**4.969**	**4.968**	**1.028**	**4.680**	**5.020**	**5.046**
Stddev	.028	.022	.011	.004	.038	.023	.019
%RSD	.5518	.4531	.2182	.3403	.8135	.4580	.3854
#1	4.994	4.974	4.956	1.025	4.663	4.993	5.025
#2	5.042	4.944	4.977	1.027	4.652	5.035	5.051
#3	5.041	4.988	4.970	1.031	4.723	5.031	5.063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**3765.7**
Stddev	18.1
%RSD	.48117
#1	3783.7
#2	3766.1
#3	3747.4

Sample Name: CCB Acquired: 11/13/2014 17:53:23 Type: QC
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	<.0000	.0003	.0107	<.0000	.0001	.0002
Stddev	.0010	.0066	.0005	.0028	.0001	.0000	.0031
%RSD	287.1	5957.	174.7	26.45	29.96	9.379	1967.
#1	.0009	.0036	.0003	.0134	-.0003	.0001	.0038
#2	-.0008	-.0077	-.0002	.0109	-.0002	.0001	-.0016
#3	.0009	.0037	.0008	.0077	-.0004	.0001	-.0017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Ca1840	Cd2288	Co2286	Cr2835	Cu2178	Fe2599	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0022	.0002	.0000	.0010	<.0000	<.0000	.0081
Stddev	.0006	.0002	.0001	.0013	.0022	.0016	.0454
%RSD	26.97	71.75	359.5	131.7	112.0	474.9	564.2
#1	.0022	.0004	.0000	-.0004	-.0016	.0007	.0427
#2	.0028	.0001	.0002	.0013	.0000	-.0022	.0248
#3	.0016	.0003	.0000	.0022	-.0043	.0004	-.0434
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Li6707	Mg2798	Mn2576	Mo2020	Na5895	Ni2216	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	<.0000	<.0000	.0132	<.0000	.0001
Stddev	.0008	.0116	.0000	.0002	.0052	.0002	.0020
%RSD	130.6	385.2	40.40	109.7	39.38	185.9	1803.
#1	.0003	-.0163	-.0001	-.0002	.0190	.0000	.0024
#2	-.0008	.0046	-.0001	.0000	.0089	.0000	-.0012
#3	-.0012	.0027	-.0001	-.0003	.0118	-.0003	-.0009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: CCB Acquired: 11/13/2014 17:53:23 Type: QC
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0015	.0006	.0015	<.0000	<.0000	.0003	<.0000
Stddev	.0016	.0044	.0012	.0038	.0031	.0007	.0001
%RSD	102.2	691.5	79.52	452.6	56.35	222.4	980.0
#1	.0020	.0057	.0013	-.0032	-.0054	.0010	.0001
#2	-.0002	-.0017	.0028	-.0028	-.0086	.0001	.0000
#3	.0028	-.0021	.0004	.0035	-.0024	-.0002	-.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0001	.0014	W<.0000	.0008	<.0000
Stddev	.0054	.0005	.0015	.0083	.0024	.0004
%RSD	92.34	413.9	111.3	4.668	310.5	625.8
#1	-.0117	.0008	.0031	-.1836	-.0018	.0004
#2	-.0010	-.0003	.0001	-.1678	.0028	-.0002
#3	-.0049	-.0001	.0009	-.1800	.0013	-.0003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass
High Limit				.0480		
Low Limit				-.0470		

Int. Std.	Y_3710
Units	Cts/S
Avg	3693.9
Stddev	37.7
%RSD	1.0204
#1	3720.0
#2	3650.7
#3	3711.1

Sample Name: 160-9053-D-10-A Acquired: 11/13/2014 17:57:19 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	.0165	.0022	.0211	.0010	.0000	<.0000	2.414	.0000
Stddev	.0002	.0019	.0007	.0005	.0002	.0000	.0006	.018	.0000
%RSD	136.4	11.50	30.64	2.381	20.99	413.8	40.59	.7268	912.9
#1	.0002	.0146	.0023	.0215	.0011	.0000	-.0009	2.400	.0000
#2	.0004	.0184	.0015	.0205	.0012	.0000	-.0017	2.408	.0000
#3	-.0001	.0164	.0028	.0212	.0008	.0000	-.0021	2.434	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0013	<.0000	.0325	1.648	.0003	5.569	.0015	<.0000
Stddev	.0000	.0014	.0046	.0011	.029	.0014	.039	.0000	.0002
%RSD	52.55	106.1	180.9	3.528	1.767	424.7	.7082	1.835	96.85
#1	.0001	.0001	.0027	.0319	1.614	.0020	5.609	.0015	-.0004
#2	.0000	.0028	-.0056	.0338	1.662	-.0005	5.568	.0014	-.0002
#3	.0000	.0010	-.0048	.0317	1.667	-.0005	5.530	.0015	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	46.60	.0007	.0019	.0025	4.060	.0001	<.0000	.0727	<.0000
Stddev	.06	.0002	.0004	.0013	.055	.0022	.0037	.0038	.0005
%RSD	.1231	25.90	21.92	53.58	1.365	3237.	850.8	5.266	2118.
#1	46.66	.0009	.0023	.0038	4.012	-.0024	.0032	.0704	-.0004
#2	46.56	.0005	.0019	.0025	4.047	.0018	-.0042	.0706	-.0001
#3	46.57	.0007	.0015	.0012	4.120	.0008	-.0003	.0772	.0005
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9053-D-10-A Acquired: 11/13/2014 17:57:19 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0349	<.0000	.0003	.0022	<.0000	.0044	.0034
Stddev	.0001	.0023	.0011	.0026	.0308	.0019	.0002
%RSD	.4276	39.55	415.1	122.1	11.00	42.99	5.189
#1	.0349	-.0086	.0007	-.0001	-.2500	.0044	.0036
#2	.0351	-.0045	.0011	.0016	-.2782	.0026	.0032
#3	.0348	-.0047	-.0010	.0050	-.3116	.0064	.0034
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3696.4
Stddev	18.0
%RSD	.48645
#1	3686.7
#2	3717.2
#3	3685.4

Sample Name: 160-9053-D-12-A Acquired: 11/13/2014 18:01:12 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0492	.0024	.0230	.0011	.0000	<.0000	2.373	<.0000
Stddev	.0009	.0047	.0032	.0015	.0003	.0000	.0014	.015	.0001
%RSD	1471.	9.535	133.6	6.531	22.62	84.08	96.32	.6175	219.8
#1	.0011	.0492	.0031	.0247	.0013	.0000	-.0024	2.390	.0001
#2	-.0004	.0445	.0051	.0226	.0008	.0000	-.0022	2.366	-.0002
#3	-.0005	.0539	-.0011	.0217	.0012	.0001	.0002	2.364	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	.0039	<.0000	.0660	1.619	<.0000	5.492	.0039	<.0000
Stddev	.0001	.0009	.0010	.0031	.011	.0013	.020	.0001	.0001
%RSD	74.24	23.46	38.00	4.633	.6614	123.7	.3694	2.202	50.25
#1	.0002	.0029	-.0037	.0625	1.607	-.0016	5.498	.0038	-.0001
#2	.0000	.0043	-.0017	.0673	1.624	-.0019	5.469	.0039	-.0004
#3	.0002	.0046	-.0025	.0682	1.626	.0004	5.509	.0040	-.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	45.87	.0003	.0056	.0025	3.765	.0003	.0023	.1271	<.0000
Stddev	.16	.0003	.0007	.0012	.027	.0011	.0007	.0052	.0005
%RSD	.3430	96.69	12.78	47.44	.7114	328.1	29.72	4.093	108.4
#1	45.73	.0004	.0050	.0017	3.783	-.0008	.0027	.1331	-.0009
#2	45.83	.0004	.0055	.0038	3.778	.0004	.0015	.1233	-.0007
#3	46.04	.0000	.0064	.0019	3.735	.0014	.0027	.1251	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9053-D-12-A Acquired: 11/13/2014 18:01:12 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0344	<.0000	.0010	.0001	<.0000	<.0000	.0039
Stddev	.0002	.0031	.0005	.0014	.0747	.0014	.0000
%RSD	.4391	29.38	51.23	1154.	19.79	100.9	1.083
#1	.0343	-.0071	.0010	.0006	-.2923	-.0001	.0039
#2	.0343	-.0123	.0015	-.0015	-.4319	-.0028	.0039
#3	.0345	-.0127	.0005	.0013	-.4079	-.0012	.0038
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3840.5
Stddev	59.1
%RSD	1.5387
#1	3773.3
#2	3884.4
#3	3863.8

Sample Name: 160-9053-D-12-B MS Acquired: 11/13/2014 18:05:04 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	.0362	<.0000	.0203	.0010	.0000	<.0000	2.287	<.0000
Stddev	.0008	.0054	.0019	.0004	.0002	.0000	.0005	.016	.0002
%RSD	283.7	14.77	421.4	1.741	25.40	1542.	351.6	.6870	422.6
#1	.0010	.0301	-.0026	.0205	.0012	.0000	-.0003	2.270	-.0001
#2	.0004	.0388	.0003	.0204	.0009	.0000	.0004	2.292	-.0003
#3	-.0006	.0398	.0009	.0199	.0007	.0000	-.0005	2.300	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0033	<.0000	.0553	1.522	<.0000	5.160	.0039	<.0000
Stddev	.0002	.0008	.0009	.0014	.006	.0004	.010	.0005	.0002
%RSD	603.6	25.78	38.08	2.535	.3896	16.86	.1991	13.72	42.49
#1	-.0003	.0036	-.0026	.0565	1.519	-.0022	5.160	.0039	-.0005
#2	.0001	.0039	-.0014	.0538	1.519	-.0031	5.150	.0033	-.0002
#3	.0000	.0023	-.0031	.0558	1.529	-.0027	5.170	.0044	-.0004
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	43.47	.0003	.0030	.0017	3.563	.0034	.0003	.1137	.0006
Stddev	.21	.0002	.0005	.0016	.030	.0028	.0036	.0017	.0005
%RSD	.4776	78.53	15.52	95.31	.8373	81.47	1118.	1.457	93.21
#1	43.47	.0000	.0035	.0014	3.529	.0059	.0041	.1123	.0007
#2	43.26	.0004	.0030	.0034	3.576	.0004	-.0001	.1155	.0000
#3	43.67	.0004	.0025	.0003	3.585	.0039	-.0031	.1133	.0010
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9053-D-12-B MS Acquired: 11/13/2014 18:05:04 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0320	<.0000	.0003	.0044	<.0000	.0027	.0035
Stddev	.0001	.0042	.0006	.0016	.0721	.0017	.0002
%RSD	.3855	38.15	215.9	35.74	18.25	61.85	5.016
#1	.0320	-.0158	.0000	.0026	-.4593	.0045	.0035
#2	.0318	-.0077	-.0001	.0055	-.4090	.0011	.0034
#3	.0321	-.0097	.0010	.0051	-.3171	.0025	.0037
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3758.6
Stddev	28.0
%RSD	.74603
#1	3786.8
#2	3758.2
#3	3730.7

Sample Name: 160-9053-D-12-C MSD Acquired: 11/13/2014 18:08:57 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0407	.0014	.0203	.0010	.0000	<.0000	2.391	<.0000
Stddev	.0001	.0110	.0016	.0003	.0002	.0000	.0044	.028	.0001
%RSD	77.09	27.13	120.7	1.327	16.36	1589.	1723.	1.161	75.72
#1	.0000	.0522	.0028	.0203	.0009	.0000	.0046	2.403	-.0002
#2	-.0003	.0395	-.0004	.0200	.0011	.0000	-.0015	2.410	-.0003
#3	-.0001	.0302	.0017	.0205	.0012	.0000	-.0039	2.359	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0036	<.0000	.0603	1.580	<.0000	5.366	.0039	<.0000
Stddev	.0007	.0018	.0014	.0011	.002	.0021	.055	.0003	.0001
%RSD	1888.	51.14	83.10	1.771	.1257	528.8	1.032	6.835	31.82
#1	.0005	.0057	-.0031	.0615	1.579	.0018	5.326	.0036	-.0005
#2	.0003	.0026	-.0013	.0597	1.582	-.0006	5.429	.0039	-.0004
#3	-.0007	.0024	-.0005	.0597	1.579	-.0023	5.342	.0041	-.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	45.08	.0002	.0053	.0016	3.759	.0025	<.0000	.1182	.0003
Stddev	.17	.0002	.0005	.0015	.036	.0012	.0016	.0021	.0004
%RSD	.3830	118.8	9.239	95.79	.9622	48.68	100.3	1.810	108.1
#1	45.16	.0000	.0049	.0000	3.774	.0025	-.0022	.1179	.0004
#2	45.19	.0004	.0059	.0031	3.785	.0013	.0002	.1163	.0006
#3	44.88	.0002	.0052	.0016	3.718	.0037	-.0029	.1205	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9053-D-12-C MSD Acquired: 11/13/2014 18:08:57 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0337	<.0000	.0008	.0018	<.0000	<.0000	.0037
Stddev	.0002	.0027	.0005	.0004	.0515	.0013	.0003
%RSD	.6275	29.56	59.52	21.24	17.14	139.0	8.133
#1	.0337	-.0060	.0003	.0016	-.3229	-.0016	.0036
#2	.0339	-.0101	.0007	.0023	-.2416	.0005	.0040
#3	.0335	-.0110	.0012	.0016	-.3371	-.0017	.0035
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3768.9
Stddev	27.9
%RSD	.73992
#1	3767.0
#2	3742.0
#3	3797.7

Sample Name: MB 160-155544/1-A Acquired: 11/13/2014 18:12:49 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0007	<.0000	.0041	<.0000	<.0000	<.0000	<.0000	.0610	.0001
Stddev	.0008	.0024	.0012	.0008	.0001	.0000	.0020	.0010	.0000
%RSD	114.5	29.98	30.51	49.05	228.1	248.0	98.45	1.683	10.93
#1	.0014	-.0053	.0050	-.0012	.0000	.0000	.0002	.0622	.0001
#2	.0010	-.0094	.0027	-.0012	.0001	.0000	-.0028	.0606	.0001
#3	-.0002	-.0095	.0046	-.0027	-.0002	-.0001	-.0036	.0603	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0004	<.0000	.0141	<.0000	<.0000	<.0000	.0001	<.0000
Stddev	.0004	.0002	.0030	.0007	.0164	.0011	.0033	.0002	.0002
%RSD	1273.	49.32	871.1	4.829	34.90	77.75	26.17	275.1	50.59
#1	.0004	.0006	-.0038	.0149	-.0316	-.0003	-.0106	.0001	-.0002
#2	-.0003	.0002	.0016	.0138	-.0450	-.0025	-.0166	.0003	-.0003
#3	-.0002	.0003	.0012	.0136	-.0642	-.0016	-.0111	-.0001	-.0005
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0379	.0002	<.0000	.0011	.0053	.0000	<.0000	.0020	.0005
Stddev	.0070	.0002	.0020	.0022	.0022	.0005	.0009	.0020	.0001
%RSD	18.38	126.4	815.2	194.7	40.57	124500.	38.68	99.16	26.72
#1	.0314	.0004	-.0004	.0030	.0032	-.0002	-.0014	.0038	.0006
#2	.0371	.0003	.0018	.0016	.0053	.0006	-.0032	-.0002	.0003
#3	.0453	-.0001	-.0021	-.0013	.0075	-.0004	-.0024	.0025	.0006
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: MB 160-155544/1-A Acquired: 11/13/2014 18:12:49 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	<.0000	<.0000	.0033	<.0000	<.0000	.0101
Stddev	.0000	.0074	.0003	.0013	.0262	.0033	.0002
%RSD	7.340	74.69	49.24	39.03	12.57	8567.	1.513
#1	.0004	-.0099	-.0008	.0046	-.1896	-.0035	.0103
#2	.0003	-.0025	-.0010	.0031	-.2382	.0003	.0100
#3	.0004	-.0173	-.0003	.0021	-.1970	.0031	.0100
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4028.6
Stddev	28.6
%RSD	.70892
#1	3996.9
#2	4036.6
#3	4052.3

Sample Name: LCS 160-155544/2-A Acquired: 11/13/2014 18:16:46 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1792**	**7.830**	**.7919**	**1.562**	**.8117**	**.7986**	**.8637**	**8.834**	**.8128**
Stddev	.0015	.021	.0102	.003	.0014	.0032	.0104	.113	.0111
%RSD	.8365	.2751	1.286	.1941	.1770	.4023	1.207	1.277	1.369
#1	.1775	7.822	.7847	1.565	.8106	.7968	.8578	8.728	.8032
#2	.1802	7.854	.8035	1.562	.8133	.8023	.8757	8.953	.8250
#3	.1799	7.814	.7873	1.559	.8112	.7966	.8576	8.823	.8103
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.8622**	**.8263**	**.8235**	**7.886**	**7.759**	**.8021**	**7.710**	**.7890**	**.4328**
Stddev	.0114	.0108	.0096	.037	.043	.0008	.033	.0030	.0055
%RSD	1.318	1.303	1.165	.4700	.5566	.0971	.4294	.3743	1.280
#1	.8519	.8164	.8147	7.854	7.753	.8015	7.687	.7873	.4278
#2	.8744	.8377	.8337	7.926	7.805	.8030	7.748	.7924	.4387
#3	.8604	.8249	.8222	7.878	7.719	.8017	7.695	.7872	.4320
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**8.046**	**.8403**	**.8410**	**.8448**	**8.386**	**.4133**	**.3999**	**.0152**	**.8557**
Stddev	.014	.0113	.0116	.0115	.082	.0035	.0017	.0057	.0103
%RSD	.1737	1.342	1.374	1.364	.9764	.8480	.4348	37.17	1.206
#1	8.048	.8304	.8302	.8354	8.335	.4106	.3979	.0197	.8466
#2	8.058	.8525	.8532	.8576	8.481	.4173	.4010	.0171	.8669
#3	8.030	.8378	.8397	.8413	8.343	.4120	.4008	.0089	.8535
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LCS 160-155544/2-A Acquired: 11/13/2014 18:16:46 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8200	.8196	.8236	.1777	.6028	.7955	.8401
Stddev	.0014	.0063	.0028	.0009	.0764	.0008	.0115
%RSD	.1761	.7746	.3408	.5116	12.67	.0989	1.374
#1	.8190	.8124	.8214	.1777	.5236	.7946	.8306
#2	.8217	.8243	.8268	.1768	.6760	.7960	.8529
#3	.8194	.8223	.8226	.1786	.6090	.7959	.8368
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3886.6
Stddev	52.3
%RSD	1.3447
#1	3932.9
#2	3829.9
#3	3897.0

Sample Name: LCSD 160-155544/3-A Acquired: 11/13/2014 18:20:22 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1991	8.894	.9232	1.755	.9221	.9122	.9739	10.17	.9389
Stddev	.0009	.019	.0087	.011	.0003	.0004	.0093	.11	.0078
%RSD	.4365	.2092	.9396	.6002	.0321	.0444	.9572	1.110	.8255
#1	.1991	8.908	.9327	1.743	.9220	.9125	.9816	10.29	.9464
#2	.1999	8.900	.9214	1.764	.9219	.9117	.9766	10.18	.9393
#3	.1981	8.873	.9156	1.757	.9225	.9124	.9636	10.06	.9309
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.005	.9624	.9596	9.021	8.875	.9135	8.791	.8955	.4950
Stddev	.010	.0062	.0088	.011	.012	.0014	.057	.0007	.0047
%RSD	1.001	.6442	.9183	.1267	.1356	.1496	.6527	.0771	.9429
#1	1.015	.9589	.9679	9.008	8.875	.9127	8.839	.8960	.4990
#2	1.007	.9695	.9606	9.031	8.863	.9151	8.727	.8947	.4960
#3	.9948	.9586	.9504	9.023	8.887	.9128	8.807	.8957	.4899
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.120	.9817	.9664	.9772	9.362	.4714	.4576	.0153	.9816
Stddev	.009	.0083	.0063	.0070	.099	.0086	.0024	.0017	.0089
%RSD	.0929	.8406	.6545	.7168	1.053	1.834	.5304	11.30	.9027
#1	9.115	.9894	.9715	.9838	9.445	.4806	.4578	.0171	.9892
#2	9.130	.9826	.9684	.9781	9.388	.4700	.4599	.0137	.9837
#3	9.116	.9730	.9594	.9699	9.253	.4635	.4550	.0150	.9719
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LCSD 160-155544/3-A Acquired: 11/13/2014 18:20:22 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9321	.9516	.9275	.2028	.8742	.9010	.9576
Stddev	.0012	.0096	.0011	.0007	.0465	.0042	.0082
%RSD	.1276	1.007	.1197	.3279	5.319	.4673	.8605
#1	.9329	.9431	.9262	.2032	.8234	.9057	.9650
#2	.9307	.9620	.9282	.2020	.9145	.8997	.9592
#3	.9326	.9496	.9282	.2031	.8848	.8976	.9487
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3756.4
Stddev	37.2
%RSD	.99056
#1	3724.8
#2	3746.9
#3	3797.4

Sample Name: 160-9030-G-4-F Acquired: 11/13/2014 18:23:58 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0004**	**4.011**	**.0039**	**.0490**	**.1061**	**.0003**	**.0009**	**18.99**	**.0001**
Stddev	.0010	.012	.0033	.0029	.0004	.0000	.0023	.28	.0001
%RSD	259.0	.2862	86.59	5.967	.3754	6.754	261.2	1.499	102.7
#1	.0004	4.015	.0075	.0496	.1061	.0003	.0026	19.11	.0003
#2	.0014	4.019	.0033	.0458	.1065	.0003	-.0017	19.19	.0001
#3	-.0007	3.998	.0009	.0516	.1057	.0003	.0017	18.66	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0014**	**.0053**	**.0081**	**4.454**	**1.441**	**.0089**	**6.320**	**.0961**	**.0086**
Stddev	.0001	.0009	.0007	.027	.016	.0015	.038	.0007	.0004
%RSD	8.481	16.33	9.019	.5977	1.080	16.50	.6026	.7451	5.151
#1	.0012	.0046	.0072	4.467	1.433	.0103	6.336	.0964	.0085
#2	.0015	.0051	.0086	4.473	1.431	.0074	6.347	.0967	.0091
#3	.0014	.0063	.0084	4.424	1.459	.0088	6.276	.0953	.0082
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**18.58**	**.0052**	**.1109**	**.0082**	**21.61**	**.0029**	**.0032**	**4.228**	**<.0000**
Stddev	.07	.0001	.0012	.0008	.34	.0012	.0019	.018	.0004
%RSD	.4024	2.733	1.084	10.34	1.582	40.89	61.27	.4382	143.7
#1	18.62	.0053	.1103	.0072	21.73	.0016	.0011	4.249	.0002
#2	18.62	.0052	.1123	.0087	21.88	.0039	.0050	4.216	-.0005
#3	18.49	.0051	.1101	.0085	21.23	.0032	.0034	4.218	-.0006
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9030-G-4-F Acquired: 11/13/2014 18:23:58 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1655	<.0000	.0806	.0035	<.0000	.0128	.0214
Stddev	.0004	.0049	.0012	.0003	.1191	.0009	.0005
%RSD	.2692	60.89	1.478	8.852	76.07	7.220	2.283
#1	.1660	-.0047	.0816	.0038	-.0702	.0118	.0218
#2	.1654	-.0138	.0810	.0033	-.1071	.0131	.0216
#3	.1651	-.0058	.0793	.0033	-.2924	.0136	.0209
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3791.5
Stddev	60.1
%RSD	1.5863
#1	3754.6
#2	3758.9
#3	3860.9

Sample Name: 160-9030-G-4-F SD Acquired: 11/13/2014 18:27:49 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=50

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0003**	**.8025**	**.0002**	**.0123**	**.0210**	**.0000**	**.0006**	**3.900**	**.0001**
Stddev	.0010	.0118	.0017	.0026	.0002	.0000	.0009	.031	.0001
%RSD	396.6	1.465	1053.	21.39	.8714	79.36	160.4	.7955	147.6
#1	.0004	.7895	-.0011	.0094	.0210	.0000	.0006	3.924	-.0001
#2	.0012	.8055	.0021	.0130	.0211	.0001	.0014	3.910	.0002
#3	-.0008	.8125	-.0005	.0145	.0207	.0000	-.0004	3.865	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0005**	**.0011**	**<.0000**	**.8965**	**.2948**	**.0013**	**1.288**	**.0195**	**.0011**
Stddev	.0003	.0013	.0026	.0045	.0217	.0006	.015	.0001	.0003
%RSD	70.47	119.1	197.8	.4967	7.354	46.54	1.143	.2891	29.28
#1	.0002	-.0003	-.0009	.9014	.2904	.0007	1.292	.0194	.0008
#2	.0004	.0023	-.0041	.8955	.3183	.0013	1.272	.0195	.0012
#3	.0008	.0014	.0011	.8927	.2756	.0019	1.300	.0195	.0014
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.701**	**.0008**	**.0233**	**.0038**	**4.335**	**.0024**	**.0032**	**.8236**	**<.0000**
Stddev	.018	.0005	.0022	.0004	.039	.0005	.0036	.0075	.0006
%RSD	.4919	64.72	9.306	9.864	.8872	20.71	111.6	.9099	188.5
#1	3.690	.0013	.0210	.0035	4.371	.0023	.0074	.8233	.0004
#2	3.722	.0003	.0252	.0042	4.339	.0029	.0012	.8313	-.0006
#3	3.690	.0008	.0238	.0037	4.294	.0020	.0011	.8164	-.0008
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9030-G-4-F SD Acquired: 11/13/2014 18:27:49 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=50

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0333	<.0000	.0158	<.0000	<.0000	<.0000	.0106
Stddev	.0000	.0012	.0004	.0002	.0418	.0001	.0002
%RSD	.1441	18.64	2.645	189.8	26.00	86.98	1.718
#1	.0333	-.0060	.0154	.0001	-.1150	-.0002	.0107
#2	.0334	-.0077	.0157	-.0004	-.1697	.0000	.0108
#3	.0334	-.0054	.0162	.0000	-.1970	-.0001	.0104
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3761.1
Stddev	16.7
%RSD	.44523
#1	3752.0
#2	3750.9
#3	3780.4

Sample Name: 160-9030-G-5-D Acquired: 11/13/2014 18:31:42 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=25

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0897	.0027	.0732	.0044	.0000	<.0000	17.22	.0001
Stddev	.0003	.0027	.0015	.0015	.0001	.0000	.0019	.06	.0001
%RSD	53.16	2.967	57.12	2.032	1.988	568.2	68.46	.3272	61.16
#1	-.0004	.0877	.0020	.0714	.0045	.0000	-.0028	17.18	.0002
#2	-.0004	.0928	.0016	.0740	.0043	.0000	-.0009	17.19	.0001
#3	-.0010	.0888	.0045	.0740	.0043	.0000	-.0048	17.28	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	.0013	<.0000	.4244	1.018	.0199	10.13	.1122	.0016
Stddev	.0007	.0004	.0019	.0018	.021	.0003	.04	.0004	.0003
%RSD	184.3	32.04	88.10	.4173	2.037	1.449	.3972	.3335	16.31
#1	.0010	.0014	-.0011	.4249	1.027	.0201	10.10	.1120	.0013
#2	.0005	.0016	-.0011	.4225	.9938	.0201	10.12	.1121	.0018
#3	-.0004	.0008	-.0044	.4259	1.032	.0196	10.18	.1127	.0016
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	39.08	.0006	.0063	.0029	41.89	.0017	.0004	.6746	.0000
Stddev	.14	.0002	.0008	.0029	.18	.0024	.0007	.0112	.0004
%RSD	.3687	29.03	12.03	100.3	.4185	142.2	161.4	1.665	1989.
#1	38.96	.0006	.0056	.0060	41.80	.0002	.0008	.6863	-.0004
#2	39.04	.0004	.0063	.0002	41.79	.0004	.0009	.6640	.0002
#3	39.24	.0007	.0071	.0026	42.10	.0044	-.0004	.6734	.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9030-G-5-D Acquired: 11/13/2014 18:31:42 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=25

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2780	<.0000	.0039	.0012	<.0000	.0000	.0084
Stddev	.0008	.0021	.0003	.0004	.0580	.0025	.0001
%RSD	.2907	32.64	8.075	33.21	19.16	866000.	1.666
#1	.2772	-.0058	.0039	.0013	-.3689	.0025	.0084
#2	.2779	-.0046	.0035	.0008	-.2603	.0000	.0082
#3	.2788	-.0086	.0042	.0016	-.2792	-.0025	.0085
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3734.7
Stddev	19.0
%RSD	.50941
#1	3750.1
#2	3740.5
#3	3713.4

Sample Name: CCV Acquired: 11/13/2014 18:35:35 Type: QC
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.043**	**49.68**	**5.157**	**4.912**	**5.121**	**4.981**	**5.198**	**51.98**	**5.186**
Stddev	.047	.30	.253	.029	.019	.174	.267	2.44	.259
%RSD	4.513	.6067	4.907	.5850	.3656	3.498	5.135	4.696	4.990
#1	1.098	49.97	5.447	4.941	5.139	5.130	5.505	54.80	5.484
#2	1.018	49.71	5.037	4.884	5.122	4.789	5.066	50.73	5.054
#3	1.015	49.37	4.986	4.911	5.102	5.023	5.022	50.42	5.020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.209**	**5.243**	**5.200**	**49.48**	**50.33**	**5.042**	**49.00**	**4.929**	**1.038**
Stddev	.261	.241	.264	.38	.25	.010	.69	.043	.051
%RSD	5.018	4.593	5.081	.7662	.4900	.1938	1.416	.8819	4.927
#1	5.510	5.520	5.504	49.90	50.61	5.046	49.80	4.975	1.096
#2	5.080	5.121	5.068	49.35	50.23	5.030	48.70	4.924	1.011
#3	5.037	5.087	5.027	49.18	50.14	5.048	48.51	4.888	1.006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**50.42**	**5.223**	**52.52**	**5.224**	**51.09**	**1.035**	**1.029**	**4.923**	**5.211**
Stddev	.22	.258	2.49	.258	2.47	.049	.051	.025	.263
%RSD	.4340	4.937	4.741	4.939	4.830	4.745	4.976	.5065	5.049
#1	50.67	5.520	55.39	5.522	53.93	1.092	1.088	4.948	5.514
#2	50.32	5.093	51.26	5.089	49.79	1.012	1.005	4.899	5.078
#3	50.27	5.056	50.92	5.061	49.54	1.002	.9948	4.922	5.042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: CCV Acquired: 11/13/2014 18:35:35 Type: QC
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.093**	**5.192**	**5.026**	**1.052**	**5.319**	**4.980**	**5.200**
Stddev	.133	.232	.029	.052	.417	.041	.262
%RSD	2.608	4.464	.5708	4.992	7.847	.8163	5.033
#1	5.244	5.459	5.059	1.112	5.795	5.023	5.502
#2	4.996	5.076	5.009	1.024	5.146	4.976	5.068
#3	5.039	5.041	5.010	1.019	5.016	4.942	5.031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**3612.2**
Stddev	158.6
%RSD	4.3910
#1	3429.1
#2	3702.1
#3	3705.5

Sample Name: CCB Acquired: 11/13/2014 18:39:19 Type: QC
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0012	.0033	.0088	.0000	.0004	.0001
Stddev	.0004	.0017	.0018	.0022	.0003	.0001	.0009
%RSD	482.3	140.1	55.52	25.20	1249.	28.15	1190.
#1	.0003	.0030	.0026	.0082	.0004	.0005	.0009
#2	-.0001	-.0003	.0054	.0070	-.0001	.0004	.0002
#3	-.0005	.0009	.0019	.0113	-.0002	.0003	-.0009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Ca1840	Cd2288	Co2286	Cr2835	Cu2178	Fe2599	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0030	.0002	.0004	.0019	<.0000	.0043	.0217
Stddev	.0006	.0002	.0002	.0012	.0027	.0006	.0253
%RSD	19.17	93.77	39.96	61.50	88.17	14.92	116.6
#1	.0025	.0005	.0005	.0032	-.0012	.0044	.0496
#2	.0030	.0001	.0004	.0018	-.0061	.0049	.0004
#3	.0036	.0001	.0002	.0008	-.0018	.0036	.0150
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Li6707	Mg2798	Mn2576	Mo2020	Na5895	Ni2216	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0023	.0004	<.0000	.0149	.0005	.0015
Stddev	.0010	.0056	.0002	.0003	.0065	.0001	.0014
%RSD	81.48	248.9	47.96	259.1	43.43	11.36	97.25
#1	-.0022	-.0028	.0002	-.0005	.0135	.0006	.0017
#2	-.0003	.0083	.0004	.0002	.0092	.0005	.0027
#3	-.0011	.0013	.0004	.0000	.0220	.0005	-.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: CCB Acquired: 11/13/2014 18:39:19 Type: QC
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W .0029	.0036	.0038	<.0000	<.0000	.0000	.0005
Stddev	.0019	.0010	.0017	.0022	.0103	.0008	.0000
%RSD	66.25	27.45	44.57	72.69	221.3	7218.	4.412
#1	.0051	.0030	.0020	-.0005	-.0043	-.0007	.0005
#2	.0019	.0031	.0053	-.0045	-.0152	-.0001	.0005
#3	.0017	.0047	.0043	-.0041	.0054	.0009	.0004
Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	.0025						
Low Limit	-.0025						

Elem	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0007	.0030	W<.0000	.0006	.0005
Stddev	.0013	.0001	.0018	.0808	.0031	.0001
%RSD	33.04	19.28	62.33	93.95	513.4	17.73
#1	-.0027	.0007	.0010	-.1342	-.0024	.0006
#2	-.0052	.0009	.0032	.0073	.0037	.0005
#3	-.0036	.0006	.0047	-.1310	.0005	.0005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass
High Limit				.0480		
Low Limit				-.0470		

Int. Std.	Y_3710
Units	Cts/S
Avg	3693.8
Stddev	33.4
%RSD	.90518
#1	3655.7
#2	3707.6
#3	3718.1

Sample Name: MB 160-154847/1-A Acquired: 11/13/2014 18:43:16 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	<.0000	.0012	.0053	<.0000	.0001	<.0000	.0968	.0001
Stddev	.0004	.0066	.0011	.0014	.0002	.0000	.0040	.0008	.0001
%RSD	288.6	97.67	92.03	25.63	123.0	65.83	2021.	.8178	143.8
#1	.0000	-.0004	.0023	.0065	-.0002	.0001	-.0044	.0959	.0001
#2	.0005	-.0062	.0001	.0056	-.0003	.0000	.0036	.0974	.0002
#3	-.0002	-.0136	.0012	.0038	.0001	.0001	.0002	.0971	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0014	<.0000	.0093	.0231	<.0000	.0041	.0017	<.0000
Stddev	.0002	.0010	.0024	.0009	.0138	.0008	.0056	.0001	.0001
%RSD	147.9	73.19	75.69	10.12	59.91	62.21	135.7	8.267	25.04
#1	.0001	.0009	-.0009	.0086	.0307	-.0005	.0085	.0016	-.0002
#2	-.0001	.0026	-.0057	.0088	.0313	-.0020	.0060	.0019	-.0002
#3	-.0004	.0007	-.0029	.0103	.0071	-.0013	-.0022	.0016	-.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0443	.0003	.0017	.0012	.0173	.0003	.0024	.0130	.0004
Stddev	.0021	.0003	.0028	.0009	.0034	.0016	.0028	.0024	.0002
%RSD	4.648	95.38	159.6	76.45	19.36	465.8	119.1	18.57	52.59
#1	.0432	.0005	.0019	.0002	.0146	-.0014	.0000	.0128	.0002
#2	.0431	.0004	.0044	.0013	.0163	.0018	.0055	.0156	.0006
#3	.0467	.0000	-.0011	.0020	.0211	.0006	.0016	.0107	.0006
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: MB 160-154847/1-A Acquired: 11/13/2014 18:43:16 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	<.0000	.0007	<.0000	<.0000	.0005	.0135
Stddev	.0001	.0029	.0003	.0007	.0659	.0020	.0002
%RSD	24.42	39.93	48.55	49.05	66.64	396.6	1.767
#1	.0004	-.0096	.0009	-.0014	-.1527	.0019	.0134
#2	.0003	-.0040	.0010	-.0006	-.1184	.0014	.0134
#3	.0005	-.0082	.0003	-.0019	-.0254	-.0017	.0138
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3686.6
Stddev	43.2
%RSD	1.1721
#1	3729.3
#2	3687.5
#3	3642.9

Sample Name: LCS 160-154847/2-A Acquired: 11/13/2014 18:47:12 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2070	9.866	.9909	1.931	1.037	1.013	1.030	10.84	1.007
Stddev	.0035	.039	.0123	.013	.002	.001	.010	.08	.011
%RSD	1.715	.3993	1.237	.6872	.1439	.0955	.9435	.7554	1.067
#1	.2085	9.829	.9966	1.925	1.036	1.012	1.032	10.86	1.011
#2	.2095	9.862	.9993	1.922	1.036	1.013	1.038	10.91	1.016
#3	.2029	9.907	.9768	1.946	1.039	1.014	1.019	10.75	.9953
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.084	1.059	1.035	10.09	9.900	1.019	9.620	.9924	.5217
Stddev	.011	.012	.011	.01	.019	.003	.054	.0044	.0053
%RSD	.9947	1.124	1.095	.0500	.1927	.3042	.5569	.4413	1.009
#1	1.088	1.067	1.039	10.08	9.897	1.020	9.560	.9873	.5234
#2	1.092	1.065	1.044	10.09	9.920	1.016	9.641	.9950	.5259
#3	1.071	1.046	1.022	10.09	9.882	1.022	9.661	.9948	.5158
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.04	1.062	1.031	1.063	9.714	.5044	.4944	4.889	1.050
Stddev	.03	.010	.012	.011	.097	.0073	.0096	.014	.008
%RSD	.2857	.9500	1.132	1.008	.9950	1.453	1.941	.2885	.7791
#1	10.01	1.066	1.031	1.068	9.745	.5050	.4980	4.892	1.054
#2	10.05	1.069	1.043	1.070	9.791	.5114	.5017	4.874	1.054
#3	10.07	1.050	1.020	1.051	9.606	.4968	.4835	4.902	1.040
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LCS 160-154847/2-A Acquired: 11/13/2014 18:47:12 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.044	1.022	1.021	.2157	.9895	.9939	1.026
Stddev	.001	.011	.002	.0014	.0401	.0030	.009
%RSD	.1266	1.056	.1690	.6311	4.051	.3067	.8716
#1	1.043	1.023	1.023	.2173	1.017	.9945	1.029
#2	1.045	1.031	1.019	.2149	1.008	.9906	1.032
#3	1.045	1.010	1.022	.2149	.9435	.9966	1.016
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3702.2
Stddev	17.6
%RSD	.47631
#1	3703.8
#2	3683.8
#3	3718.9

Sample Name: 160-9005-F-1-C Acquired: 11/13/2014 18:50:46 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0002**	**<.0000**	**.0031**	**.1246**	**.0008**	**.0001**	**<.0000**	**4.947**	**.0001**
Stddev	.0006	.0028	.0008	.0039	.0001	.0001	.0041	.143	.0002
%RSD	385.9	23.00	26.55	3.102	13.14	74.82	444.2	2.899	280.0
#1	-.0001	-.0144	.0023	.1285	.0008	.0002	.0037	5.092	.0002
#2	-.0003	-.0091	.0030	.1208	.0010	.0001	-.0023	4.806	-.0002
#3	.0009	-.0134	.0040	.1245	.0008	.0000	-.0041	4.941	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**.0023**	**<.0000**	**.0503**	**.1220**	**.0146**	**.7310**	**<.0000**	**<.0000**
Stddev	.0003	.0006	.0010	.0009	.0214	.0013	.0065	.0003	.0001
%RSD	275.3	26.55	36.02	1.797	17.57	8.733	.8903	2805.	41.15
#1	.0004	.0017	-.0032	.0504	.1188	.0155	.7235	.0002	-.0002
#2	-.0001	.0029	-.0017	.0493	.1024	.0132	.7347	.0001	-.0002
#3	.0000	.0023	-.0037	.0511	.1449	.0153	.7348	-.0004	-.0004
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**57.87**	**.0000**	**.0004**	**.0021**	**30.18**	**<.0000**	**.0324**	**.5100**	**.0008**
Stddev	.12	.0003	.0013	.0007	.89	.0053	.0041	.0040	.0007
%RSD	.1988	838.8	317.4	31.86	2.961	12010.	12.62	.7892	88.67
#1	57.99	.0000	-.0009	.0025	31.09	-.0044	.0328	.5145	.0007
#2	57.76	-.0002	.0017	.0025	29.30	-.0016	.0282	.5068	.0016
#3	57.87	.0003	.0005	.0013	30.15	.0058	.0363	.5086	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9005-F-1-C Acquired: 11/13/2014 18:50:46 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1185	<.0000	.0008	.0005	<.0000	.0055	.0120
Stddev	.0002	.0033	.0007	.0012	.0954	.0017	.0003
%RSD	.1271	57.46	86.71	223.4	51.59	31.27	2.376
#1	.1185	-.0081	.0016	.0018	-.0864	.0068	.0121
#2	.1186	-.0072	.0003	-.0007	-.2770	.0061	.0117
#3	.1183	-.0020	.0005	.0005	-.1915	.0036	.0123
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3592.7
Stddev	79.1
%RSD	2.2027
#1	3514.9
#2	3673.1
#3	3590.1

Sample Name: 160-9005-F-2-C Acquired: 11/13/2014 18:54:39 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0043	.0006	.0619	.0061	.0000	<.0000	1.045	<.0000
Stddev	.0008	.0078	.0019	.0014	.0002	.0001	.0010	.014	.0001
%RSD	85.51	182.4	329.7	2.189	2.945	125.0	64.35	1.374	107.5
#1	-.0013	-.0032	.0023	.0634	.0063	.0001	-.0028	1.039	-.0001
#2	.0000	.0124	-.0015	.0607	.0060	.0000	-.0010	1.036	-.0002
#3	-.0014	.0036	.0010	.0616	.0060	.0001	-.0010	1.062	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	<.0000	1.755	.1174	.0067	.3473	.0416	.0000
Stddev	.0004	.0025	.0017	.006	.0237	.0003	.0082	.0002	.0001
%RSD	732.8	602.1	61.07	.3334	20.19	4.321	2.361	.3807	441.9
#1	.0003	.0020	-.0048	1.754	.1395	.0068	.3426	.0417	-.0001
#2	-.0001	-.0031	-.0025	1.761	.1203	.0064	.3425	.0414	.0001
#3	-.0004	-.0002	-.0013	1.749	.0924	.0069	.3567	.0417	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	24.07	.0004	.0004	.0020	11.38	.0021	.0012	.0951	.0003
Stddev	.07	.0002	.0022	.0006	.19	.0017	.0059	.0106	.0004
%RSD	.3060	47.61	569.1	31.69	1.640	81.74	494.1	11.16	114.3
#1	23.99	.0002	.0028	.0016	11.34	.0037	-.0039	.0951	.0002
#2	24.14	.0006	-.0014	.0027	11.22	.0003	-.0002	.0844	.0001
#3	24.07	.0004	-.0002	.0016	11.58	.0021	.0077	.1056	.0008
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9005-F-2-C Acquired: 11/13/2014 18:54:39 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0788	<.0000	.0007	.0043	.0681	.0007	.0060
Stddev	.0002	.0022	.0004	.0007	.0351	.0030	.0001
%RSD	.2037	43.37	54.43	15.27	51.46	445.6	1.828
#1	.0787	-.0031	.0003	.0049	.0335	-.0011	.0060
#2	.0790	-.0075	.0009	.0036	.1036	-.0011	.0060
#3	.0788	-.0049	.0009	.0044	.0673	.0042	.0058
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3464.4
Stddev	20.2
%RSD	.58422
#1	3473.8
#2	3478.3
#3	3441.2

Sample Name: 160-9005-F-3-C Acquired: 11/13/2014 18:58:31 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0068	.0009	.0345	.0012	.0016	.0058	45.73	.0001
Stddev	.0003	.0097	.0022	.0019	.0002	.0000	.0042	.34	.0002
%RSD	143.4	143.3	260.0	5.459	15.43	.7620	71.19	.7529	375.1
#1	.0001	.0172	-.0015	.0345	.0010	.0016	.0088	45.36	.0002
#2	-.0003	.0050	.0012	.0326	.0011	.0016	.0076	45.79	-.0002
#3	-.0005	-.0019	.0029	.0364	.0014	.0016	.0011	46.04	.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	.0007	.3585	.1815	.8316	.0144	7.757	.0021	.0065
Stddev	.0004	.0010	.0028	.0016	.0416	.0009	.062	.0003	.0001
%RSD	184.7	134.6	.7681	.8612	5.004	6.483	.8030	12.25	1.507
#1	.0006	-.0001	.3553	.1803	.8258	.0154	7.729	.0018	.0065
#2	.0003	.0005	.3599	.1809	.8758	.0136	7.714	.0023	.0065
#3	-.0002	.0018	.3602	.1832	.7931	.0143	7.829	.0021	.0066
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	36.70	.0002	.0012	.0042	60.62	.0023	.0619	.9321	.0019
Stddev	.11	.0003	.0007	.0017	.79	.0013	.0049	.0057	.0011
%RSD	.3018	129.9	58.62	40.20	1.302	58.45	7.847	.6087	58.57
#1	36.74	.0003	.0012	.0059	59.98	.0021	.0574	.9274	.0024
#2	36.57	.0005	.0005	.0041	60.37	.0011	.0612	.9384	.0006
#3	36.78	-.0001	.0018	.0026	61.50	.0037	.0671	.9304	.0026
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9005-F-3-C Acquired: 11/13/2014 18:58:31 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5819	<.0000	.0018	.0007	<.0000	<.0000	.0734
Stddev	.0011	.0029	.0006	.0029	.0608	.0005	.0006
%RSD	.1886	60.18	32.18	410.3	162.3	34.61	.7962
#1	.5822	-.0022	.0020	-.0023	-.0842	-.0014	.0727
#2	.5807	-.0080	.0011	.0034	-.0596	-.0021	.0735
#3	.5828	-.0045	.0022	.0010	.0313	-.0010	.0739
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3510.6
Stddev	21.9
%RSD	.62519
#1	3529.4
#2	3486.5
#3	3516.0

Sample Name: 160-9005-F-4-G Acquired: 11/13/2014 19:02:23 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=50

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	.0015	.0263	.0008	.0000	<.0000	46.94	<.0000
Stddev	.0006	.0117	.0029	.0038	.0002	.0000	.0037	.22	.0002
%RSD	263.1	60.87	200.9	14.63	20.69	681.3	462.1	.4755	226.3
#1	.0001	-.0235	.0043	.0280	.0008	.0000	.0026	46.69	.0001
#2	-.0010	-.0060	-.0016	.0289	.0006	.0000	-.0047	47.12	.0000
#3	.0002	-.0282	.0017	.0219	.0009	.0000	-.0003	47.01	-.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0007	<.0000	.0093	.9484	.0133	8.204	.0009	.0001
Stddev	.0005	.0008	.0041	.0003	.0324	.0007	.041	.0000	.0004
%RSD	343.5	107.5	1794.	3.760	3.414	5.287	.5040	3.784	473.4
#1	-.0004	.0004	.0038	.0090	.9578	.0138	8.244	.0009	.0005
#2	-.0005	.0002	-.0043	.0096	.9750	.0125	8.205	.0009	-.0003
#3	.0004	.0017	-.0002	.0091	.9124	.0135	8.161	.0009	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	26.44	.0001	<.0000	.0026	55.02	.0030	.0344	.9054	<.0000
Stddev	.03	.0003	.0003	.0012	.29	.0018	.0057	.0092	.0005
%RSD	.1286	277.5	16.61	43.89	.5189	58.38	16.65	1.019	45.64
#1	26.46	.0003	-.0019	.0013	54.70	.0049	.0334	.9108	-.0011
#2	26.46	.0002	-.0014	.0035	55.25	.0028	.0405	.9107	-.0018
#3	26.40	-.0002	-.0019	.0031	55.12	.0014	.0292	.8948	-.0007
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9005-F-4-G Acquired: 11/13/2014 19:02:23 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=50

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6058	<.0000	.0017	.0006	<.0000	.0013	.0102
Stddev	.0012	.0010	.0009	.0016	.0408	.0035	.0002
%RSD	.1912	9.356	52.55	279.3	29.74	264.4	1.536
#1	.6058	-.0103	.0027	.0002	-.1293	.0052	.0101
#2	.6069	-.0117	.0014	.0023	-.1011	.0005	.0101
#3	.6046	-.0098	.0010	-.0008	-.1816	-.0017	.0104
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3587.7
Stddev	28.3
%RSD	.79012
#1	3576.3
#2	3566.7
#3	3619.9

Sample Name: 160-9005-F-4-G SD Acquired: 11/13/2014 19:06:16 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=50

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	.0010	.0043	<.0000	.0000	.0035	9.774	<.0000
Stddev	.0010	.0034	.0030	.0027	.0002	.0000	.0034	.031	.0000
%RSD	146.5	64.60	292.1	63.43	139.8	1152.	97.03	.3129	55.66
#1	-.0004	-.0085	-.0004	.0054	-.0004	.0000	.0074	9.763	-.0001
#2	-.0017	-.0055	-.0010	.0012	-.0001	.0000	.0024	9.751	-.0001
#3	.0002	-.0017	.0045	.0063	.0000	.0000	.0008	9.809	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0000	<.0000	.0012	.2168	.0025	1.694	.0004	<.0000
Stddev	.0003	.0007	.0017	.0021	.0140	.0008	.006	.0001	.0003
%RSD	232.6	2275.	67.30	168.9	6.449	30.87	.3816	31.86	222.4
#1	.0001	-.0004	-.0011	.0035	.2019	.0027	1.698	.0004	.0001
#2	-.0005	.0009	-.0022	.0009	.2297	.0017	1.697	.0003	.0000
#3	.0000	-.0004	-.0045	-.0007	.2188	.0032	1.687	.0005	-.0005
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.338	<.0000	<.0000	.0013	10.99	.0019	.0032	.1731	<.0000
Stddev	.021	.0003	.0023	.0019	.03	.0015	.0011	.0009	.0004
%RSD	.3913	261.2	254.1	153.4	.2679	78.61	33.25	.5337	97.65
#1	5.357	-.0001	.0012	.0011	11.01	.0019	.0044	.1739	-.0007
#2	5.316	-.0005	-.0034	.0033	10.96	.0034	.0025	.1721	-.0003
#3	5.341	.0002	-.0006	-.0006	11.01	.0004	.0027	.1734	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9005-F-4-G SD Acquired: 11/13/2014 19:06:16 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=50

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1240	<.0000	.0003	.0003	<.0000	<.0000	.0084
Stddev	.0004	.0105	.0004	.0023	.0298	.0023	.0004
%RSD	.3385	121.8	164.1	874.0	3143.	751.7	4.285
#1	.1244	-.0203	.0006	-.0023	-.0245	-.0010	.0087
#2	.1235	-.0060	-.0002	.0009	-.0108	-.0022	.0087
#3	.1240	.0003	.0004	.0022	.0325	.0023	.0080
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3515.0
Stddev	42.2
%RSD	1.1996
#1	3560.7
#2	3506.6
#3	3477.7

Sample Name: 160-9005-F-4-H MS Acquired: 11/13/2014 19:10:08 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0212**	**1.040**	**.1097**	**.2252**	**.1096**	**.1076**	**.1088**	**47.55**	**.1106**
Stddev	.0002	.012	.0018	.0049	.0002	.0004	.0058	.31	.0008
%RSD	.9318	1.110	1.652	2.195	.2203	.3422	5.310	.6507	.6994
#1	.0214	1.030	.1118	.2199	.1094	.1072	.1029	47.78	.1113
#2	.0211	1.052	.1085	.2259	.1098	.1080	.1145	47.66	.1108
#3	.0211	1.037	.1088	.2297	.1098	.1077	.1091	47.20	.1098
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1166**	**.1137**	**.1091**	**1.084**	**1.990**	**.1201**	**9.145**	**.1054**	**.0546**
Stddev	.0011	.0006	.0020	.003	.039	.0001	.059	.0005	.0001
%RSD	.9104	.5164	1.801	.2542	1.963	.0979	.6472	.4639	.2738
#1	.1175	.1133	.1073	1.084	2.030	.1201	9.103	.1052	.0545
#2	.1169	.1134	.1112	1.087	1.988	.1203	9.213	.1051	.0545
#3	.1154	.1143	.1088	1.082	1.952	.1201	9.118	.1060	.0547
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**27.17**	**.1154**	**.1163**	**.1179**	**55.73**	**.0558**	**.0839**	**1.423**	**.1097**
Stddev	.10	.0012	.0014	.0019	.57	.0015	.0009	.012	.0006
%RSD	.3636	1.010	1.195	1.621	1.032	2.719	1.077	.8091	.5686
#1	27.09	.1167	.1150	.1189	56.18	.0543	.0849	1.419	.1103
#2	27.28	.1151	.1178	.1191	55.93	.0557	.0833	1.436	.1097
#3	27.13	.1144	.1159	.1157	55.08	.0573	.0834	1.414	.1091
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9005-F-4-H MS Acquired: 11/13/2014 19:10:08 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7122	.0998	.1065	.0222	<.0000	.1063	.1215
Stddev	.0026	.0026	.0005	.0009	.0096	.0010	.0012
%RSD	.3649	2.602	.4532	4.198	35.21	.9554	.9765
#1	.7096	.0978	.1064	.0225	-.0329	.1073	.1224
#2	.7148	.0989	.1071	.0230	-.0162	.1063	.1219
#3	.7123	.1027	.1062	.0212	-.0327	.1053	.1201
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3623.3
Stddev	21.0
%RSD	.58000
#1	3637.9
#2	3599.2
#3	3632.7

Sample Name: 160-9005-F-4-I MSD Acquired: 11/13/2014 19:13:56 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0206**	**1.015**	**.1069**	**.2199**	**.1061**	**.1048**	**.1046**	**46.75**	**.1061**
Stddev	.0003	.004	.0007	.0037	.0004	.0004	.0016	.56	.0013
%RSD	1.406	.4124	.6530	1.667	.3778	.4033	1.524	1.189	1.241
#1	.0204	1.018	.1066	.2159	.1058	.1045	.1031	47.15	.1069
#2	.0206	1.016	.1077	.2231	.1066	.1053	.1063	46.99	.1067
#3	.0210	1.010	.1065	.2206	.1060	.1046	.1045	46.11	.1046
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1123**	**.1123**	**.1062**	**1.055**	**1.972**	**.1154**	**9.157**	**.1036**	**.0525**
Stddev	.0009	.0018	.0020	.004	.023	.0014	.007	.0005	.0007
%RSD	.7903	1.568	1.838	.4186	1.163	1.203	.0808	.4666	1.323
#1	.1129	.1114	.1078	1.057	1.966	.1165	9.156	.1038	.0532
#2	.1126	.1143	.1040	1.059	1.997	.1158	9.150	.1039	.0526
#3	.1112	.1112	.1067	1.050	1.952	.1138	9.164	.1030	.0518
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**27.18**	**.1103**	**.1108**	**.1119**	**54.73**	**.0522**	**.0823**	**1.413**	**.1062**
Stddev	.07	.0015	.0025	.0007	.82	.0019	.0036	.005	.0017
%RSD	.2669	1.320	2.241	.6564	1.497	3.593	4.348	.3646	1.591
#1	27.11	.1111	.1096	.1124	55.32	.0542	.0832	1.414	.1079
#2	27.26	.1112	.1137	.1123	55.08	.0518	.0854	1.417	.1063
#3	27.18	.1086	.1092	.1110	53.80	.0505	.0784	1.407	.1045
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9005-F-4-I MSD Acquired: 11/13/2014 19:13:56 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7067	.0984	.1037	.0217	<.0000	.1021	.1170
Stddev	.0023	.0015	.0013	.0015	.0626	.0004	.0016
%RSD	.3220	1.551	1.218	6.699	228.5	.4029	1.401
#1	.7050	.0968	.1030	.0211	-.0935	.1019	.1183
#2	.7093	.0986	.1052	.0207	.0309	.1026	.1176
#3	.7057	.0999	.1030	.0234	-.0196	.1018	.1152
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3594.7
Stddev	9.7
%RSD	.26913
#1	3602.2
#2	3583.8
#3	3598.3

Sample Name: 160-8922-C-1-H Acquired: 11/13/2014 19:17:45 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=20

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000**	**.1414**	**.0151**	**.4593**	**.0033**	**.0000**	**.0023**	**32.20**	**.0002**
Stddev	.0008	.0043	.0034	.0031	.0002	.0001	.0010	.57	.0002
%RSD	9153.	3.048	22.54	.6677	6.524	198.3	45.38	1.773	104.6
#1	-.0004	.1382	.0129	.4573	.0030	.0000	.0011	32.46	.0000
#2	.0009	.1397	.0190	.4578	.0035	.0000	.0028	32.58	.0003
#3	-.0005	.1463	.0134	.4628	.0033	.0001	.0029	31.54	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**<.0000**	**.0566**	**.0010**	**.1135**	**.6202**	**.0236**	**9.240**	**.0065**	**.0020**
Stddev	.0005	.0012	.0027	.0019	.0072	.0003	.030	.0004	.0001
%RSD	181.7	2.207	265.6	1.659	1.165	1.160	.3301	5.957	4.000
#1	.0000	.0558	.0041	.1117	.6272	.0239	9.205	.0063	.0021
#2	.0001	.0559	-.0004	.1132	.6204	.0235	9.257	.0070	.0019
#3	-.0008	.0580	-.0007	.1155	.6128	.0233	9.259	.0063	.0021
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**59.73**	**.0007**	**.0031**	**.0040**	**54.65**	**.0036**	**.0004**	**2.886**	**<.0000**
Stddev	.07	.0007	.0009	.0005	1.17	.0027	.0027	.004	.0005
%RSD	.1206	91.34	29.44	11.45	2.135	74.29	620.3	.1436	85.14
#1	59.67	.0013	.0026	.0046	55.24	.0040	.0017	2.884	-.0004
#2	59.72	.0000	.0026	.0037	55.41	.0007	.0023	2.891	-.0012
#3	59.81	.0009	.0042	.0038	53.31	.0060	-.0027	2.884	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-8922-C-1-H Acquired: 11/13/2014 19:17:45 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=20

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5880	<.0000	.0069	.0000	<.0000	.0114	.0044
Stddev	.0010	.0031	.0007	.0005	.0218	.0010	.0003
%RSD	.1725	93.46	9.938	3837.	29.74	8.386	7.738
#1	.5872	-.0044	.0074	-.0006	-.0866	.0125	.0047
#2	.5876	-.0059	.0071	.0004	-.0480	.0109	.0043
#3	.5891	.0002	.0061	.0002	-.0848	.0108	.0041
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3398.1
Stddev	44.0
%RSD	1.2943
#1	3386.2
#2	3361.2
#3	3446.8

Sample Name: CCV Acquired: 11/13/2014 19:21:39 Type: QC
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.063**	**50.43**	**5.320**	**4.914**	**5.204**	**5.177**	**5.344**	**53.37**	**5.338**
Stddev	.017	.21	.057	.029	.015	.037	.062	.41	.056
%RSD	1.571	.4074	1.068	.5879	.2931	.7136	1.164	.7769	1.049
#1	1.078	50.54	5.374	4.939	5.213	5.212	5.392	53.74	5.387
#2	1.067	50.20	5.323	4.882	5.186	5.181	5.366	53.45	5.350
#3	1.045	50.56	5.261	4.921	5.213	5.139	5.274	52.92	5.277
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.365**	**5.439**	**5.345**	**50.45**	**51.59**	**5.092**	**50.09**	**4.996**	**1.059**
Stddev	.051	.100	.066	.16	.12	.016	.22	.020	.009
%RSD	.9522	1.843	1.238	.3094	.2325	.3105	.4335	.3991	.8122
#1	5.410	5.540	5.399	50.56	51.72	5.106	50.32	5.012	1.067
#2	5.376	5.438	5.365	50.27	51.48	5.074	49.89	4.974	1.062
#3	5.309	5.340	5.271	50.51	51.56	5.095	50.07	5.002	1.050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**50.85**	**5.394**	**54.01**	**5.429**	**51.89**	**1.062**	**1.067**	**4.947**	**5.404**
Stddev	.21	.054	.50	.058	.34	.010	.012	.032	.055
%RSD	.4109	1.005	.9302	1.059	.6590	.9172	1.150	.6547	1.013
#1	51.03	5.441	54.45	5.480	52.08	1.073	1.080	4.963	5.451
#2	50.62	5.407	54.13	5.439	52.10	1.060	1.065	4.910	5.418
#3	50.90	5.335	53.46	5.366	51.50	1.053	1.056	4.968	5.344
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: CCV Acquired: 11/13/2014 19:21:39 Type: QC
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.150**	**5.299**	**5.106**	**1.085**	F **5.507**	**5.036**	**5.350**
Stddev	.060	.107	.015	.013	.207	.018	.056
%RSD	1.163	2.024	.2866	1.148	3.758	.3651	1.046
#1	5.215	5.406	5.122	1.095	5.719	5.052	5.397
#2	5.098	5.299	5.093	1.088	5.497	5.016	5.365
#3	5.137	5.191	5.104	1.071	5.306	5.040	5.288
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
Value					5.000		
Range					10.00%		

Int. Std.	Y_3710
Units	Cts/S
Avg	**3483.5**
Stddev	36.0
%RSD	1.0343
#1	3444.9
#2	3489.6
#3	3516.1

Sample Name: CCB Acquired: 11/13/2014 19:25:23 Type: QC
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**<.0000**	**.0012**	**.0116**	**.0005**	**.0005**	**.0019**	**.0038**
Stddev	.0008	.0126	.0009	.0032	.0004	.0001	.0027	.0009
%RSD	752.4	178.5	71.38	27.81	67.80	15.59	143.7	23.66
#1	.0006	.0059	.0019	.0143	.0009	.0006	-.0012	.0048
#2	-.0008	-.0192	.0016	.0123	.0004	.0005	.0036	.0036
#3	.0005	-.0078	.0002	.0080	.0003	.0005	.0034	.0031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Cd2288	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0002**	**.0004**	**.0010**	**.0025**	**.0044**	**.0100**	**<.0000**	**<.0000**
Stddev	.0004	.0005	.0013	.0010	.0003	.0175	.0010	.0026
%RSD	259.0	117.6	130.6	41.96	7.696	174.5	190.6	114.3
#1	.0006	-.0001	-.0002	.0037	.0047	-.0093	-.0011	-.0022
#2	-.0001	.0005	.0008	.0017	.0043	.0248	-.0012	.0003
#3	-.0001	.0008	.0023	.0021	.0041	.0146	.0007	-.0048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mn2576	Mo2020	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0004**	**<.0000**	**.0163**	**.0001**	**.0016**	W **.0026**	**.0063**	**.0029**
Stddev	.0005	.0003	.0078	.0002	.0010	.0013	.0051	.0039
%RSD	120.4	76.41	47.45	156.1	63.16	50.29	80.48	134.7
#1	.0005	-.0001	.0148	.0004	.0008	.0017	.0029	.0063
#2	.0008	-.0004	.0095	.0000	.0027	.0041	.0121	.0037
#3	-.0001	-.0006	.0248	.0000	.0012	.0020	.0039	-.0013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass
High Limit						.0025		
Low Limit						-.0025		

Sample Name: CCB Acquired: 11/13/2014 19:25:23 Type: QC
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2516	Sn1899	Sr4077	Th2832	Ti3349	Tl1908	U_3670
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	.0009	.0005	<.0000	.0008	.0004	.0308
Stddev	.0026	.0093	.0007	.0001	.0026	.0010	.0010	.0572
%RSD	492.1	71.12	78.44	25.42	52.75	127.8	289.2	186.0
#1	.0008	-.0082	.0011	.0006	-.0025	.0015	.0015	-.0285
#2	-.0036	-.0072	.0001	.0004	-.0077	-.0003	.0000	.0351
#3	.0011	-.0237	.0015	.0004	-.0047	.0011	-.0005	.0857
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	V_2908	Zn2138
Units	ppm	ppm
Avg	.0008	.0002
Stddev	.0040	.0001
%RSD	491.4	28.36
#1	-.0037	.0002
#2	.0037	.0001
#3	.0024	.0002
Check ?	Chk Pass	Chk Pass
High Limit		
Low Limit		

Int. Std.	Y_3710
Units	Cts/S
Avg	3463.8
Stddev	28.4
%RSD	.82114
#1	3473.1
#2	3431.9
#3	3486.5

Sample Name: 160-9069-E-1-E Acquired: 11/13/2014 19:29:20 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**<.0000**	**.0008**	**.0101**	**.0045**	**.0000**	**<.0000**	**19.95**	**.0002**
Stddev	.0001	.0056	.0035	.0037	.0002	.0000	.0058	.32	.0002
%RSD	109.8	27.91	459.1	36.19	3.584	72.98	795.7	1.583	82.85
#1	.0002	-.0161	.0045	.0117	.0044	.0000	.0057	20.30	.0001
#2	.0000	-.0179	.0001	.0059	.0043	.0000	-.0023	19.85	.0004
#3	.0003	-.0266	-.0023	.0128	.0046	.0001	-.0057	19.70	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0002**	**.0012**	**<.0000**	**.0205**	**.3051**	**.0034**	**4.526**	**.1793**	**.0019**
Stddev	.0004	.0007	.0043	.0020	.0128	.0003	.028	.0009	.0002
%RSD	187.2	60.11	113.0	9.694	4.187	8.303	.6075	.4818	10.43
#1	.0006	.0019	.0006	.0183	.2906	.0037	4.542	.1796	.0021
#2	-.0002	.0015	-.0041	.0222	.3103	.0031	4.494	.1783	.0018
#3	.0003	.0004	-.0078	.0210	.3145	.0033	4.541	.1799	.0018
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.348**	**.0002**	**<.0000**	**.0003**	**14.01**	**.0015**	**<.0000**	**.7507**	**<.0000**
Stddev	.018	.0001	.0011	.0008	.23	.0017	.0049	.0074	.0004
%RSD	.3432	73.43	48.71	267.3	1.629	116.4	4794.	.9907	114.1
#1	5.369	.0001	-.0020	.0000	14.27	-.0004	.0052	.7593	-.0005
#2	5.339	.0003	-.0034	.0012	13.92	.0020	-.0010	.7464	.0001
#3	5.335	.0002	-.0013	-.0003	13.84	.0028	-.0045	.7464	-.0006
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9069-E-1-E Acquired: 11/13/2014 19:29:20 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1657	<.0000	.0002	.0004	<.0000	.0008	.0057
Stddev	.0004	.0053	.0003	.0009	.0526	.0030	.0004
%RSD	.2541	53.52	161.3	215.6	22.23	361.1	7.653
#1	.1662	-.0131	.0005	-.0002	-.1765	.0016	.0055
#2	.1656	-.0128	-.0002	.0000	-.2596	.0035	.0055
#3	.1654	-.0038	.0003	.0014	-.2740	-.0025	.0062
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3502.7
Stddev	38.3
%RSD	1.0945
#1	3461.5
#2	3509.3
#3	3537.3

Sample Name: 160-9069-E-2-C Acquired: 11/13/2014 19:33:13 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005	<.0000	.0016	.0131	.0021	.0000	.0043	21.84	.0001
Stddev	.0007	.0093	.0002	.0055	.0001	.0000	.0029	.16	.0001
%RSD	149.0	75.47	12.71	42.20	4.203	193.0	66.02	.7425	150.1
#1	.0006	-.0125	.0017	.0152	.0021	.0000	.0053	21.68	.0002
#2	.0012	-.0029	.0017	.0172	.0022	.0000	.0011	21.83	.0000
#3	-.0003	-.0215	.0014	.0068	.0020	.0000	.0065	22.00	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	.0029	<.0000	.0085	.2793	.0052	5.739	.0693	.0020
Stddev	.0007	.0015	.0017	.0016	.0440	.0008	.010	.0006	.0002
%RSD	259.1	50.66	303.8	19.15	15.75	14.86	.1733	.8265	10.26
#1	.0004	.0014	.0007	.0103	.3225	.0046	5.735	.0688	.0022
#2	.0010	.0030	-.0025	.0080	.2345	.0061	5.732	.0692	.0020
#3	-.0005	.0043	.0001	.0072	.2810	.0049	5.750	.0699	.0018
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.42	.0005	<.0000	.0037	19.64	.0039	<.0000	.8021	<.0000
Stddev	.04	.0002	.0008	.0003	.18	.0038	.0021	.0171	.0009
%RSD	.3526	46.99	28.12	7.132	.9282	96.10	359.8	2.131	135.6
#1	11.46	.0004	-.0036	.0036	19.50	-.0004	-.0005	.8207	.0003
#2	11.38	.0008	-.0023	.0035	19.58	.0066	.0015	.7870	-.0007
#3	11.42	.0003	-.0022	.0040	19.85	.0056	-.0028	.7986	-.0014
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9069-E-2-C Acquired: 11/13/2014 19:33:13 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2244	<.0000	.0011	.0011	<.0000	.0013	.0041
Stddev	.0010	.0038	.0007	.0027	.0667	.0040	.0002
%RSD	.4601	38.54	67.68	244.3	26.98	307.3	3.748
#1	.2255	-.0072	.0016	-.0020	-.2837	-.0033	.0041
#2	.2234	-.0142	.0014	.0024	-.2873	.0036	.0040
#3	.2242	-.0082	.0002	.0028	-.1701	.0036	.0043
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3450.2
Stddev	11.9
%RSD	.34373
#1	3454.2
#2	3459.6
#3	3436.9

Sample Name: 160-9069-E-3-F Acquired: 11/13/2014 19:37:06 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0012**	**<.0000**	**.0026**	**.0199**	**.0018**	**<.0000**	**.0003**	**13.90**	**.0001**
Stddev	.0001	.0144	.0014	.0023	.0002	.0000	.0013	.21	.0001
%RSD	5.111	248.0	52.63	11.58	9.144	83.90	432.3	1.481	69.78
#1	.0011	.0061	.0015	.0198	.0020	.0000	.0010	13.87	.0001
#2	.0012	-.0217	.0022	.0222	.0018	.0000	-.0012	14.12	.0001
#3	.0012	-.0017	.0042	.0176	.0016	.0000	.0010	13.71	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**.0032**	**<.0000**	**.0201**	**.5270**	**.0055**	**4.663**	**.0244**	**.0042**
Stddev	.0003	.0008	.0027	.0017	.0209	.0002	.033	.0007	.0003
%RSD	482.2	25.73	172.3	8.623	3.974	4.559	.7113	2.852	6.776
#1	.0003	.0031	-.0024	.0192	.5353	.0057	4.630	.0251	.0039
#2	-.0002	.0025	-.0037	.0221	.5425	.0052	4.696	.0237	.0044
#3	.0000	.0041	.0014	.0190	.5032	.0056	4.664	.0243	.0044
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**36.84**	**.0005**	**<.0000**	**.0016**	**25.15**	**.0028**	**<.0000**	**.8371**	**<.0000**
Stddev	.19	.0002	.0017	.0014	.36	.0033	.0013	.0067	.0003
%RSD	.5087	36.19	71.56	86.20	1.428	118.1	123.5	.7982	69.89
#1	36.68	.0003	-.0018	.0023	25.05	.0020	.0004	.8315	-.0001
#2	37.05	.0005	-.0011	.0000	25.55	.0064	-.0021	.8353	-.0006
#3	36.81	.0005	-.0044	.0025	24.86	.0000	-.0014	.8445	-.0008
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9069-E-3-F Acquired: 11/13/2014 19:37:06 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2233	<.0000	.0009	.0020	<.0000	.0004	.0037
Stddev	.0009	.0033	.0004	.0005	.0645	.0013	.0001
%RSD	.3845	59.86	45.72	28.00	21.54	321.9	2.089
#1	.2224	-.0089	.0013	.0022	-.2996	.0018	.0036
#2	.2242	-.0022	.0005	.0023	-.2352	.0003	.0037
#3	.2232	-.0056	.0008	.0013	-.3643	-.0008	.0037
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3438.9
Stddev	52.0
%RSD	1.5133
#1	3455.5
#2	3380.5
#3	3480.5

Sample Name: 160-8955-A-4-B Acquired: 11/13/2014 19:40:59 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	.0052	.0125	.0557	<.0000	.0009	52.26	<.0000
Stddev	.0007	.0054	.0027	.0015	.0001	.0000	.0037	1.03	.0001
%RSD	130.7	56.33	53.22	11.98	.0979	4957.	410.8	1.979	544.7
#1	-.0013	-.0038	.0083	.0116	.0557	.0000	.0039	52.44	-.0001
#2	-.0002	-.0145	.0038	.0117	.0557	.0000	-.0032	53.19	.0000
#3	.0000	-.0106	.0033	.0143	.0556	.0000	.0021	51.15	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0059	.0448	.0399	2.493	.0032	12.09	.0019	.0017
Stddev	.0004	.0010	.0031	.0009	.008	.0007	.09	.0002	.0001
%RSD	95.66	17.21	6.821	2.195	.3268	23.10	.7329	8.246	7.164
#1	.0000	.0048	.0474	.0401	2.484	.0041	12.13	.0017	.0018
#2	-.0006	.0065	.0456	.0407	2.498	.0028	12.15	.0019	.0018
#3	-.0007	.0065	.0414	.0390	2.498	.0028	11.98	.0019	.0016
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.386	.0040	.0170	.0183	7.586	.0027	<.0000	12.79	<.0000
Stddev	.033	.0002	.0010	.0016	.157	.0016	.0043	.09	.0010
%RSD	.5155	5.305	5.590	8.687	2.075	61.69	179.1	.7166	380.9
#1	6.412	.0041	.0161	.0187	7.562	.0026	-.0052	12.82	.0006
#2	6.397	.0041	.0170	.0197	7.754	.0011	.0025	12.86	-.0001
#3	6.349	.0037	.0180	.0166	7.441	.0044	-.0044	12.69	-.0013
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-8955-A-4-B Acquired: 11/13/2014 19:40:59 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2722	<.0000	.0021	<.0000	<.0000	.0060	.1151
Stddev	.0011	.0056	.0005	.0008	.1013	.0014	.0027
%RSD	.3871	67.21	23.04	40.20	40.24	23.64	2.347
#1	.2731	-.0147	.0015	-.0010	-.1819	.0077	.1147
#2	.2724	-.0043	.0024	-.0024	-.2051	.0052	.1179
#3	.2710	-.0060	.0023	-.0022	-.3677	.0052	.1126
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3440.2
Stddev	89.2
%RSD	2.5927
#1	3377.6
#2	3400.6
#3	3542.3

Sample Name: 160-8955-A-10-B Acquired: 11/13/2014 19:44:50 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0002**	**.0266**	**.0036**	**.0127**	**.0321**	**<.0000**	**<.0000**	**36.92**	**<.0000**
Stddev	.0009	.0061	.0023	.0032	.0001	.0000	.0046	.52	.0003
%RSD	363.3	22.97	63.23	24.86	.3781	270.3	487.7	1.401	299.6
#1	.0008	.0203	.0031	.0162	.0319	-.0001	.0043	37.46	-.0001
#2	.0008	.0270	.0016	.0103	.0322	.0000	-.0030	36.88	.0002
#3	-.0008	.0325	.0061	.0115	.0321	.0000	-.0041	36.42	-.0004
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0003**	**.0105**	**<.0000**	**.1667**	**2.435**	**<.0000**	**13.44**	**.0037**	**.0022**
Stddev	.0002	.0016	.0017	.0016	.022	.0010	.01	.0001	.0004
%RSD	69.58	15.64	35.28	.9636	.8938	219.0	.0621	3.010	19.91
#1	.0005	.0120	-.0050	.1652	2.411	-.0004	13.44	.0037	.0021
#2	.0002	.0107	-.0030	.1664	2.453	.0005	13.43	.0038	.0026
#3	.0002	.0088	-.0064	.1684	2.442	-.0016	13.44	.0036	.0018
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**8.597**	**.0043**	**.0139**	**.0143**	**6.866**	**.0021**	**.0044**	**13.52**	**<.0000**
Stddev	.028	.0006	.0007	.0020	.101	.0025	.0042	.04	.0002
%RSD	.3286	13.55	4.826	13.89	1.471	121.0	95.76	.3137	23.90
#1	8.575	.0050	.0131	.0121	6.964	-.0004	.0092	13.51	-.0008
#2	8.628	.0041	.0143	.0160	6.871	.0046	.0031	13.57	-.0005
#3	8.586	.0039	.0141	.0146	6.762	.0020	.0010	13.48	-.0007
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-8955-A-10-B Acquired: 11/13/2014 19:44:50 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2080	<.0000	.0020	<.0000	<.0000	.0096	.0205
Stddev	.0007	.0003	.0006	.0020	.0990	.0042	.0001
%RSD	.3479	3.960	30.60	185.8	37.96	43.82	.4102
#1	.2075	-.0077	.0021	.0008	-.1521	.0070	.0206
#2	.2089	-.0073	.0025	-.0032	-.3457	.0073	.0205
#3	.2077	-.0079	.0013	-.0008	-.2851	.0144	.0205
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3607.5
Stddev	14.6
%RSD	.40387
#1	3590.8
#2	3617.5
#3	3614.3

Sample Name: 160-8955-A-16-B Acquired: 11/13/2014 19:48:42 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0008**	**<.0000**	**.0043**	**.0163**	**.0154**	**.0000**	**<.0000**	**24.31**	**<.0000**
Stddev	.0010	.0038	.0013	.0008	.0001	.0000	.0013	.19	.0003
%RSD	122.8	22.48	29.42	4.819	.8465	85.20	1372.	.7977	668300.
#1	.0018	-.0127	.0030	.0170	.0156	.0000	.0006	24.09	.0002
#2	.0007	-.0199	.0056	.0155	.0155	.0000	-.0017	24.45	-.0003
#3	-.0001	-.0186	.0044	.0165	.0153	.0000	.0007	24.39	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**<.0000**	**.0254**	**<.0000**	**.1215**	**2.634**	**.0053**	**11.39**	**.0005**	**.0038**
Stddev	.0002	.0006	.0015	.0042	.049	.0011	.02	.0001	.0002
%RSD	55.72	2.306	421.6	3.431	1.873	19.84	.1543	24.21	5.535
#1	-.0006	.0253	.0013	.1170	2.585	.0062	11.39	.0007	.0041
#2	-.0003	.0261	-.0016	.1223	2.633	.0055	11.40	.0005	.0037
#3	-.0002	.0250	-.0008	.1252	2.684	.0042	11.37	.0005	.0037
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.13**	**.0041**	**.0057**	**.0158**	**5.937**	**<.0000**	**.0024**	**14.24**	**.0001**
Stddev	.02	.0003	.0020	.0018	.065	.0007	.0023	.05	.0010
%RSD	.2068	8.175	34.96	11.41	1.100	977.6	97.87	.3406	1118.
#1	10.13	.0043	.0067	.0142	5.868	.0006	.0047	14.18	-.0004
#2	10.12	.0037	.0034	.0156	5.998	.0000	.0025	14.26	-.0006
#3	10.16	.0043	.0069	.0178	5.946	-.0008	.0000	14.27	.0012
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-8955-A-16-B Acquired: 11/13/2014 19:48:42 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1326	<.0000	.0009	.0024	<.0000	.0136	.0154
Stddev	.0005	.0020	.0003	.0008	.0443	.0019	.0002
%RSD	.3396	20.20	27.41	33.93	34.29	13.96	1.519
#1	.1323	-.0107	.0012	.0024	-.1398	.0116	.0153
#2	.1323	-.0113	.0007	.0033	-.1670	.0139	.0153
#3	.1331	-.0076	.0009	.0016	-.0805	.0154	.0157
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3548.2
Stddev	16.5
%RSD	.46515
#1	3567.2
#2	3537.7
#3	3539.8

Sample Name: 240-43773-K-1-A Acquired: 11/13/2014 19:52:33 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=50

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	.0022	.7675	7.185	.0000	.0048	315.8	<.0000
Stddev	.0010	.0062	.0016	.0055	.119	.0000	.0033	2.1	.0001
%RSD	1023.	446.8	74.49	.7157	1.653	159.0	68.76	.6514	60.01
#1	-.0012	-.0055	.0014	.7702	7.055	.0000	.0076	314.1	-.0002
#2	.0006	-.0043	.0041	.7712	7.289	.0000	.0011	318.1	-.0003
#3	.0003	.0057	.0011	.7612	7.211	.0000	.0058	315.1	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0038	<.0000	2.014	12.70	1.147	33.14	.3429	.0002
Stddev	.0004	.0017	.0021	.007	.04	.004	.22	.0018	.0003
%RSD	71.49	45.37	71.18	.3564	.3074	.3283	.6779	.5286	158.6
#1	-.0004	.0018	-.0044	2.022	12.74	1.150	33.26	.3432	.0000
#2	-.0010	.0047	-.0005	2.014	12.67	1.143	33.28	.3445	.0005
#3	-.0003	.0048	-.0039	2.007	12.69	1.149	32.88	.3409	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	729.2	<.0000	<.0000	.0008	.1103	.0057	<.0000	.2873	<.0000
Stddev	5.8	.0003	.0014	.0005	.0088	.0033	.0005	.0047	.0010
%RSD	.7963	98.12	34.57	57.01	7.976	58.22	175.8	1.643	45.65
#1	730.5	.0000	-.0024	.0004	.1084	.0066	-.0007	.2917	-.0022
#2	734.3	-.0006	-.0047	.0013	.1198	.0084	-.0003	.2879	-.0033
#3	722.9	-.0003	-.0048	.0008	.1025	.0020	.0002	.2823	-.0013
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 240-43773-K-1-A Acquired: 11/13/2014 19:52:33 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=50

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	38.39	<.0000	.0068	.0009	<.0000	.0001	.0075
Stddev	.56	.0057	.0004	.0009	.0503	.0021	.0001
%RSD	1.460	102.2	6.417	97.00	11.25	3475.	1.908
#1	37.84	-.0062	.0073	.0019	-.3916	.0013	.0073
#2	38.96	-.0109	.0066	.0004	-.4893	.0013	.0075
#3	38.38	.0004	.0064	.0004	-.4616	-.0024	.0076
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3361.5
Stddev	23.5
%RSD	.70027
#1	3352.6
#2	3343.7
#3	3388.2

Sample Name: LCSD 160-154847/18-A Acquired: 11/13/2014 19:56:52 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2202	10.46	1.073	1.957	1.095	1.065	1.090	11.78	1.088
Stddev	.0026	.02	.013	.010	.004	.003	.009	.10	.009
%RSD	1.162	.2097	1.228	.5263	.3615	.2723	.8385	.8427	.8651
#1	.2185	10.44	1.084	1.947	1.093	1.063	1.094	11.85	1.096
#2	.2189	10.47	1.058	1.957	1.100	1.068	1.080	11.67	1.078
#3	.2231	10.48	1.077	1.967	1.093	1.064	1.097	11.82	1.092
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.175	1.195	1.122	12.13	10.60	1.072	10.23	1.035	.5601
Stddev	.007	.004	.012	.05	.02	.004	.02	.002	.0033
%RSD	.6397	.3634	1.109	.3939	.2144	.3604	.2068	.1968	.5841
#1	1.181	1.191	1.131	12.11	10.57	1.071	10.21	1.033	.5612
#2	1.167	1.199	1.108	12.19	10.61	1.077	10.23	1.037	.5565
#3	1.177	1.195	1.126	12.10	10.61	1.069	10.25	1.036	.5627
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.67	1.157	1.113	1.155	10.24	.5303	.5365	5.002	1.123
Stddev	.04	.010	.013	.009	.11	.0076	.0065	.033	.010
%RSD	.3283	.8558	1.140	.8089	1.037	1.432	1.203	.6673	.8891
#1	10.65	1.166	1.124	1.164	10.30	.5357	.5431	4.963	1.132
#2	10.71	1.146	1.099	1.146	10.12	.5216	.5302	5.019	1.112
#3	10.65	1.158	1.116	1.153	10.30	.5337	.5362	5.023	1.124
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LCSD 160-154847/18-A Acquired: 11/13/2014 19:56:52 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.099	1.115	1.059	.2342	1.218	1.033	1.111
Stddev	.005	.007	.004	.0006	.023	.002	.009
%RSD	.4626	.6403	.3382	.2738	1.873	.2181	.8267
#1	1.096	1.109	1.055	.2335	1.207	1.036	1.119
#2	1.105	1.114	1.062	.2345	1.244	1.033	1.101
#3	1.096	1.123	1.059	.2347	1.202	1.031	1.114
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3482.2
Stddev	4.8
%RSD	.13817
#1	3485.1
#2	3485.0
#3	3476.7

Sample Name: MB 160-156239/1-A Acquired: 11/13/2014 20:00:27 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0054	.0014	.0183	.0005	.0001	.0011	.1816	.0002
Stddev	.0006	.0118	.0036	.0020	.0001	.0001	.0002	.0094	.0003
%RSD	120.1	220.5	249.6	10.77	27.42	139.6	20.43	5.202	112.7
#1	-.0010	-.0061	.0006	.0200	.0006	.0002	.0011	.1893	.0005
#2	.0001	.0048	-.0017	.0162	.0006	.0000	.0013	.1845	.0002
#3	-.0004	.0175	.0053	.0186	.0004	.0000	.0009	.1711	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0003	.0016	.0188	.0002	<.0000	.0335	.0002	<.0000
Stddev	.0003	.0022	.0030	.0019	.0247	.0019	.0153	.0003	.0005
%RSD	135.8	642.5	186.5	9.937	13350.	1171.	45.64	123.9	89.52
#1	.0000	-.0014	.0051	.0207	.0281	.0012	.0367	.0005	-.0005
#2	-.0001	-.0004	-.0003	.0190	-.0083	.0006	.0470	.0000	-.0011
#3	-.0005	.0029	.0001	.0169	-.0192	-.0023	.0169	.0001	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0773	.0004	.0002	.0007	.0094	.0026	<.0000	.0671	.0023
Stddev	.0074	.0005	.0016	.0014	.0036	.0007	.0034	.0044	.0003
%RSD	9.557	138.9	720.2	184.1	38.73	25.44	1362.	6.493	11.15
#1	.0854	.0009	-.0015	.0004	.0093	.0034	.0023	.0706	.0025
#2	.0711	-.0002	.0006	-.0004	.0058	.0026	.0012	.0684	.0020
#3	.0752	.0004	.0016	.0022	.0131	.0020	-.0042	.0622	.0022
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: MB 160-156239/1-A Acquired: 11/13/2014 20:00:27 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0017	<.0000	.0005	.0028	.0960	.0020	.0162
Stddev	.0002	.0034	.0007	.0030	.1767	.0003	.0007
%RSD	9.553	53.54	152.1	110.0	184.1	15.26	4.575
#1	.0018	-.0033	.0000	.0062	.2817	.0022	.0169
#2	.0016	-.0058	.0013	.0006	.0765	.0016	.0162
#3	.0015	-.0100	.0001	.0015	-.0702	.0021	.0154
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3530.1
Stddev	132.8
%RSD	3.7615
#1	3417.8
#2	3495.9
#3	3676.7

Sample Name: LCSSRM 160-156239/2- Acquired: 11/13/2014 20:04:22 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=2

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.3571**	**39.24**	**.4728**	**.4620**	**1.058**	**.2941**	**.0017**	**41.42**	**.7790**
Stddev	.0076	.09	.0031	.0055	.002	.0007	.0034	.41	.0108
%RSD	2.125	.2306	.6646	1.190	.2286	.2516	208.5	.9942	1.386
#1	.3601	39.34	.4724	.4564	1.061	.2949	.0045	41.45	.7820
#2	.3626	39.20	.4761	.4674	1.056	.2937	-.0022	41.81	.7880
#3	.3484	39.17	.4698	.4622	1.058	.2936	.0026	40.99	.7670
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.142**	**.5055**	**1.459**	**63.08**	**11.83**	**.0387**	**13.31**	**2.124**	**.5804**
Stddev	.012	.0098	.024	.20	.03	.0003	.04	.007	.0077
%RSD	1.022	1.940	1.615	.3228	.2215	.6499	.2931	.3193	1.318
#1	1.147	.5035	1.465	63.31	11.85	.0388	13.34	2.128	.5824
#2	1.151	.5161	1.478	62.98	11.84	.0389	13.32	2.128	.5869
#3	1.129	.4968	1.433	62.94	11.80	.0384	13.26	2.116	.5720
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.127**	**1.351**	**2.640**	**.5569**	**1.254**	**.6436**	**.6960**	**2.303**	**.8227**
Stddev	.011	.016	.035	.0055	.017	.0114	.0112	.021	.0106
%RSD	.2085	1.212	1.306	.9903	1.347	1.778	1.609	.9318	1.288
#1	5.136	1.353	2.642	.5586	1.251	.6499	.7000	2.327	.8273
#2	5.115	1.366	2.673	.5614	1.273	.6504	.7047	2.285	.8303
#3	5.130	1.334	2.604	.5507	1.239	.6304	.6834	2.297	.8106
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LCSSRM 160-156239/2- Acquired: 11/13/2014 20:04:22 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=2

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8540	.0376	.9773	.8075	.1821	.7571	.7041
Stddev	.0027	.0077	.0025	.0086	.0250	.0026	.0094
%RSD	.3220	20.35	.2570	1.066	13.76	.3420	1.338
#1	.8572	.0373	.9801	.8038	.1718	.7580	.7065
#2	.8524	.0455	.9753	.8173	.2106	.7591	.7120
#3	.8524	.0302	.9765	.8013	.1638	.7542	.6937
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3863.8
Stddev	52.2
%RSD	1.3521
#1	3842.9
#2	3825.2
#3	3923.2

Sample Name: CCV Acquired: 11/13/2014 20:08:01 Type: QC
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.052**	**50.96**	**5.351**	**4.806**	**5.257**	**5.091**	**5.369**	**53.51**	**5.371**
Stddev	.011	.18	.052	.009	.015	.144	.068	.54	.065
%RSD	1.027	.3438	.9707	.1978	.2792	2.824	1.258	1.000	1.205
#1	1.057	51.10	5.337	4.795	5.274	5.002	5.351	53.49	5.356
#2	1.040	50.76	5.307	4.808	5.249	5.015	5.312	52.99	5.315
#3	1.060	51.02	5.408	4.814	5.247	5.257	5.443	54.06	5.442
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.386**	**5.418**	**5.378**	**50.07**	**52.33**	**5.143**	**50.46**	**4.928**	**1.062**
Stddev	.058	.048	.063	.18	.12	.010	.25	.018	.014
%RSD	1.080	.8941	1.161	.3651	.2344	.1984	.4897	.3632	1.270
#1	5.377	5.425	5.357	50.25	52.46	5.153	50.51	4.939	1.060
#2	5.332	5.367	5.330	49.88	52.22	5.143	50.19	4.907	1.050
#3	5.448	5.463	5.449	50.09	52.31	5.133	50.67	4.937	1.076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**51.52**	**5.422**	**54.33**	**5.450**	**52.00**	**1.068**	**1.074**	**4.882**	**5.430**
Stddev	.10	.058	.64	.060	.56	.010	.010	.019	.052
%RSD	.2025	1.063	1.171	1.106	1.075	.8991	.9486	.3882	.9537
#1	51.60	5.417	54.24	5.453	51.82	1.069	1.077	4.873	5.425
#2	51.40	5.367	53.74	5.389	51.56	1.059	1.062	4.869	5.381
#3	51.57	5.482	55.01	5.509	52.63	1.078	1.082	4.904	5.484
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: CCV Acquired: 11/13/2014 20:08:01 Type: QC
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.082**	**5.269**	**5.147**	**1.088**	**5.360**	**5.038**	**5.385**
Stddev	.135	.056	.009	.018	.063	.020	.056
%RSD	2.656	1.054	.1713	1.631	1.176	.3885	1.041
#1	4.975	5.290	5.157	1.087	5.379	5.042	5.379
#2	5.037	5.205	5.139	1.070	5.290	5.017	5.332
#3	5.234	5.310	5.144	1.105	5.412	5.056	5.443
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**3433.6**
Stddev	39.6
%RSD	1.1545
#1	3426.9
#2	3476.2
#3	3397.8

Sample Name: CCB Acquired: 11/13/2014 20:11:45 Type: QC
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0029	.0002	.0116	.0004	.0005	.0003	.0045	.0003
Stddev	.0014	.0027	.0013	.0047	.0002	.0001	.0055	.0013	.0001
%RSD	2066.	91.44	783.6	40.28	58.14	21.64	1775.	28.73	49.28
#1	-.0014	.0008	-.0003	.0170	.0006	.0006	.0015	.0055	.0002
#2	-.0001	.0021	.0017	.0088	.0005	.0005	-.0057	.0030	.0004
#3	.0013	.0059	-.0009	.0090	.0001	.0004	.0052	.0048	.0002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	.0003	<.0000	.0068	.0034	.0027	<.0000	.0004	<.0000
Stddev	.0002	.0006	.0014	.0019	.0186	.0021	.0085	.0002	.0001
%RSD	86.84	175.7	94.48	27.22	552.1	77.61	1174.	44.18	76.29
#1	.0003	.0010	-.0004	.0084	-.0154	.0052	-.0059	.0004	-.0001
#2	.0000	.0000	-.0010	.0074	.0038	.0019	-.0054	.0005	-.0001
#3	.0003	.0000	-.0031	.0048	.0218	.0011	.0091	.0002	.0000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0148	.0002	.0001	.0019	.0044	.0028	.0007	<.0000	.0005
Stddev	.0050	.0003	.0016	.0012	.0053	.0009	.0040	.0021	.0004
%RSD	33.77	110.8	2270.	63.65	120.1	31.52	543.7	12.42	76.25
#1	.0170	-.0001	.0014	.0013	.0022	.0019	-.0036	-.0148	.0002
#2	.0184	.0005	.0005	.0011	.0105	.0029	.0041	-.0189	.0009
#3	.0091	.0003	-.0017	.0033	.0006	.0036	.0017	-.0161	.0004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Sample Name: CCB Acquired: 11/13/2014 20:11:45 Type: QC
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0007	<.0000	.0006	.0006	<.0000	.0014	.0004
Stddev	.0000	.0061	.0011	.0023	.0125	.0018	.0002
%RSD	6.592	88.50	199.7	408.6	237.3	132.0	40.89
#1	.0007	.0001	.0015	.0027	.0073	.0033	.0005
#2	.0007	-.0106	.0010	-.0019	-.0055	.0008	.0002
#3	.0006	-.0101	-.0007	.0009	-.0176	-.0001	.0005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_3710
Units	Cts/S
Avg	3422.7
Stddev	40.3
%RSD	1.1766
#1	3379.4
#2	3429.6
#3	3459.0

Sample Name: LCDSRM 160-156239/11 Acquired: 11/13/2014 20:15:42 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=2

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.3446**	**38.05**	**.4684**	**.4423**	**1.052**	**.2840**	**.0061**	**40.51**	**.7570**
Stddev	.0085	.13	.0086	.0051	.002	.0014	.0030	.92	.0158
%RSD	2.476	.3401	1.832	1.157	.1996	.4877	49.60	2.263	2.092
#1	.3361	37.90	.4586	.4381	1.050	.2824	.0043	39.49	.7393
#2	.3445	38.11	.4742	.4409	1.053	.2849	.0044	40.78	.7619
#3	.3532	38.13	.4726	.4480	1.053	.2846	.0096	41.27	.7698
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.120**	**.4839**	**1.417**	**59.87**	**11.61**	**.0381**	**13.11**	**2.028**	**.5583**
Stddev	.024	.0136	.036	.36	.04	.0003	.15	.013	.0129
%RSD	2.164	2.805	2.517	.5958	.3768	.6814	1.156	.6588	2.317
#1	1.094	.4684	1.377	59.48	11.56	.0381	12.94	2.012	.5436
#2	1.127	.4894	1.427	59.97	11.65	.0383	13.22	2.033	.5632
#3	1.141	.4938	1.446	60.17	11.62	.0378	13.18	2.037	.5680
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.999**	**1.323**	**2.706**	**.5372**	**1.238**	**.6339**	**.6776**	**2.139**	**.8127**
Stddev	.008	.029	.060	.0113	.035	.0167	.0136	.035	.0171
%RSD	.1575	2.177	2.229	2.108	2.852	2.630	2.003	1.635	2.102
#1	4.991	1.291	2.639	.5260	1.198	.6152	.6625	2.155	.7943
#2	5.007	1.331	2.725	.5370	1.251	.6393	.6819	2.162	.8157
#3	4.998	1.347	2.755	.5487	1.264	.6473	.6886	2.098	.8280
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LCDSRM 160-156239/11 Acquired: 11/13/2014 20:15:42 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=2

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8472	.0357	.8595	.7938	.2024	.7245	.6902
Stddev	.0021	.0049	.0024	.0163	.0991	.0040	.0138
%RSD	.2454	13.77	.2827	2.057	48.98	.5556	2.003
#1	.8449	.0311	.8573	.7753	.0923	.7199	.6749
#2	.8489	.0351	.8621	.7998	.2303	.7262	.6937
#3	.8478	.0409	.8591	.8062	.2846	.7274	.7019
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3960.7
Stddev	63.4
%RSD	1.5998
#1	4030.8
#2	3943.5
#3	3907.6

Sample Name: 160-9030-C-1-AB Acquired: 11/13/2014 20:19:19 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=5

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	12.78	.0214	.0075	.3195	.0009	<.0000	128.0	.0001
Stddev	.0009	.04	.0018	.0037	.0010	.0000	.0026	1.6	.0003
%RSD	151.0	.3318	8.370	50.03	.3010	1.595	312.5	1.282	184.8
#1	.0000	12.83	.0231	.0080	.3205	.0009	.0017	129.6	.0005
#2	-.0001	12.77	.0196	.0109	.3194	.0009	-.0008	128.1	.0000
#3	-.0016	12.74	.0214	.0035	.3186	.0009	-.0034	126.4	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0124	.0288	.0242	26.72	1.920	.0454	13.67	.4822	.0053
Stddev	.0001	.0006	.0032	.04	.034	.0003	.06	.0021	.0003
%RSD	.6238	2.037	13.41	.1605	1.756	.6898	.4101	.4426	6.382
#1	.0124	.0286	.0280	26.76	1.958	.0451	13.74	.4844	.0050
#2	.0123	.0295	.0221	26.68	1.907	.0454	13.64	.4801	.0057
#3	.0125	.0284	.0226	26.73	1.894	.0457	13.64	.4820	.0052
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.853	.0274	1.233	.0172	26.36	.0038	<.0000	1.105	<.0000
Stddev	.016	.0003	.017	.0014	.45	.0017	.0020	.014	.0009
%RSD	.5760	1.112	1.353	8.234	1.712	43.43	164.2	1.218	54.33
#1	2.851	.0277	1.250	.0177	26.81	.0052	.0009	1.120	-.0006
#2	2.838	.0275	1.234	.0183	26.36	.0020	-.0032	1.097	-.0020
#3	2.871	.0271	1.216	.0156	25.90	.0044	-.0014	1.097	-.0022
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9030-C-1-AB Acquired: 11/13/2014 20:19:19 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=5

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6604	.0102	.8988	.0017	<.0000	.0945	.0756
Stddev	.0014	.0059	.0029	.0020	.0186	.0006	.0011
%RSD	.2101	58.05	.3252	115.8	46.70	.6559	1.460
#1	.6620	.0034	.8989	-.0001	-.0404	.0951	.0768
#2	.6594	.0140	.8959	.0014	-.0210	.0945	.0754
#3	.6599	.0133	.9018	.0038	-.0582	.0939	.0747
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3650.0
Stddev	26.1
%RSD	.71531
#1	3624.8
#2	3648.4
#3	3676.9

Sample Name: 160-9030-C-1-AB SD Acquired: 11/13/2014 20:23:09 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=25

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	2.587	.0059	.0039	.0648	.0002	<.0000	27.57	<.0000
Stddev	.0014	.009	.0018	.0014	.0001	.0000	.0010	.06	.0002
%RSD	187.0	.3313	29.97	36.65	.1732	12.53	86.25	.2009	433.2
#1	-.0003	2.584	.0039	.0027	.0649	.0002	-.0012	27.63	-.0002
#2	-.0023	2.597	.0074	.0035	.0647	.0002	-.0022	27.57	.0002
#3	.0004	2.581	.0064	.0055	.0648	.0002	-.0002	27.52	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0024	.0082	.0017	5.523	.4107	.0076	2.839	.0995	.0009
Stddev	.0004	.0005	.0023	.005	.0173	.0006	.018	.0005	.0002
%RSD	18.60	6.082	140.0	.0961	4.225	7.782	.6445	.4962	26.30
#1	.0024	.0085	.0022	5.518	.4305	.0082	2.840	.0999	.0010
#2	.0029	.0084	.0037	5.529	.4035	.0076	2.857	.0990	.0011
#3	.0020	.0076	-.0009	5.523	.3981	.0070	2.820	.0997	.0006
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5813	.0059	.2500	.0060	5.277	.0009	<.0000	.2204	<.0000
Stddev	.0088	.0002	.0038	.0016	.033	.0006	.0017	.0047	.0003
%RSD	1.521	2.844	1.535	25.94	.6218	61.38	232.6	2.150	33.38
#1	.5756	.0059	.2464	.0046	5.297	.0006	-.0026	.2150	-.0013
#2	.5915	.0057	.2497	.0058	5.239	.0006	-.0004	.2240	-.0010
#3	.5767	.0060	.2540	.0077	5.295	.0016	.0008	.2223	-.0006
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9030-C-1-AB SD Acquired: 11/13/2014 20:23:09 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=25

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1345	.0005	.1827	.0000	.0413	.0184	.0215
Stddev	.0004	.0041	.0011	.0017	.0853	.0027	.0003
%RSD	.2871	813.2	.5889	9119.	206.4	14.50	1.182
#1	.1349	.0042	.1839	-.0015	.0919	.0187	.0215
#2	.1341	.0013	.1823	.0019	.0892	.0209	.0212
#3	.1345	-.0039	.1819	-.0003	-.0571	.0156	.0217
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3399.2
Stddev	21.0
%RSD	.61901
#1	3389.8
#2	3384.6
#3	3423.3

Sample Name: 160-9030-C-1-AC MS Acquired: 11/13/2014 20:27:00 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=5

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0470**	**17.17**	**.2552**	**.4319**	**.5984**	**.2386**	**.2443**	**127.1**	**.2441**
Stddev	.0009	.03	.0017	.0002	.0014	.0004	.0049	.7	.0014
%RSD	1.953	.1568	.6587	.0381	.2288	.1655	1.991	.5738	.5938
#1	.0477	17.18	.2571	.4317	.5989	.2386	.2445	127.6	.2454
#2	.0459	17.19	.2545	.4321	.5994	.2390	.2394	126.3	.2425
#3	.0473	17.14	.2539	.4319	.5968	.2382	.2491	127.5	.2444
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2655**	**.2804**	**.2672**	**27.93**	**4.888**	**.2871**	**16.57**	**.7019**	**.1218**
Stddev	.0022	.0053	.0007	.04	.022	.0018	.03	.0002	.0004
%RSD	.8250	1.872	.2640	.1254	.4575	.6380	.1644	.0265	.3123
#1	.2675	.2759	.2675	27.92	4.902	.2876	16.58	.7017	.1222
#2	.2632	.2791	.2664	27.97	4.862	.2851	16.59	.7018	.1215
#3	.2659	.2862	.2677	27.91	4.899	.2887	16.54	.7021	.1217
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.039**	**.2740**	**1.355**	**.2695**	**21.28**	**.0782**	**.1190**	**1.296**	**.2362**
Stddev	.007	.0024	.006	.0033	.10	.0028	.0003	.013	.0021
%RSD	.1407	.8876	.4822	1.213	.4726	3.631	.2724	1.004	.9064
#1	5.043	.2754	1.356	.2729	21.34	.0813	.1187	1.303	.2365
#2	5.043	.2712	1.348	.2664	21.16	.0777	.1193	1.305	.2339
#3	5.031	.2755	1.361	.2692	21.33	.0756	.1189	1.281	.2381
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9030-C-1-AC MS Acquired: 11/13/2014 20:27:00 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=5

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8310	.2433	1.102	.0530	.2450	.3151	.3139
Stddev	.0023	.0045	.003	.0015	.0483	.0026	.0014
%RSD	.2758	1.842	.2854	2.773	19.73	.8117	.4510
#1	.8323	.2393	1.101	.0514	.1972	.3179	.3153
#2	.8323	.2482	1.106	.0534	.2439	.3146	.3124
#3	.8283	.2424	1.100	.0542	.2939	.3129	.3141
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3621.8
Stddev	22.2
%RSD	.61235
#1	3611.6
#2	3647.2
#3	3606.5

Sample Name: 160-9030-C-1-AD MSD Acquired: 11/13/2014 20:30:42 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0460**	**18.17**	**.2561**	**.4214**	**.5947**	**.2287**	**.2370**	**131.9**	**.2408**
Stddev	.0009	.17	.0021	.0036	.0051	.0018	.0018	.7	.0009
%RSD	2.010	.9553	.8054	.8452	.8576	.8008	.7629	.5616	.3849
#1	.0455	18.31	.2569	.4255	.5988	.2303	.2365	132.8	.2418
#2	.0455	17.98	.2538	.4187	.5890	.2267	.2390	131.4	.2407
#3	.0471	18.23	.2577	.4201	.5963	.2291	.2355	131.5	.2399
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2606**	**.2773**	**.2716**	**26.98**	**4.928**	**.2798**	**15.29**	**.6475**	**.1210**
Stddev	.0016	.0009	.0029	.19	.058	.0033	.14	.0055	.0008
%RSD	.6101	.3199	1.067	.7143	1.171	1.164	.9298	.8424	.6627
#1	.2623	.2778	.2749	27.10	4.932	.2803	15.35	.6523	.1219
#2	.2602	.2763	.2709	26.76	4.868	.2763	15.13	.6416	.1203
#3	.2592	.2778	.2692	27.08	4.983	.2828	15.39	.6487	.1209
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.405**	**.2704**	**1.493**	**.2665**	**23.17**	**.0730**	**.1195**	**1.599**	**.2325**
Stddev	.039	.0011	.006	.0028	.12	.0022	.0016	.012	.0029
%RSD	.7237	.3906	.4208	1.032	.5327	2.962	1.329	.7513	1.266
#1	5.440	.2715	1.499	.2683	23.31	.0705	.1200	1.607	.2358
#2	5.363	.2701	1.493	.2678	23.13	.0740	.1207	1.585	.2313
#3	5.413	.2694	1.486	.2633	23.07	.0745	.1177	1.604	.2303
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9030-C-1-AD MSD Acquired: 11/13/2014 20:30:42 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8024	.2422	1.021	.0513	.2208	.3114	.3167
Stddev	.0066	.0066	.007	.0033	.0350	.0041	.0022
%RSD	.8279	2.723	.7051	6.411	15.86	1.307	.6797
#1	.8074	.2361	1.027	.0544	.1908	.3109	.3191
#2	.7948	.2413	1.013	.0515	.2123	.3076	.3163
#3	.8049	.2492	1.023	.0479	.2593	.3157	.3148
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3525.5
Stddev	17.9
%RSD	.50641
#1	3515.8
#2	3546.1
#3	3514.6

Sample Name: 160-9030-B-2-J Acquired: 11/13/2014 20:34:25 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	12.23	.0151	.0070	.3261	.0009	.0025	84.12	.0001
Stddev	.0004	.04	.0015	.0037	.0014	.0000	.0040	.50	.0002
%RSD	70.60	.3204	9.726	52.98	.4435	2.848	159.8	.5896	214.4
#1	-.0010	12.22	.0134	.0096	.3249	.0009	.0038	84.35	.0003
#2	-.0002	12.19	.0157	.0027	.3257	.0009	.0056	84.46	.0001
#3	-.0007	12.27	.0161	.0085	.3277	.0009	-.0020	83.55	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0124	.0252	.0276	27.95	2.172	.0337	11.01	.4465	.0048
Stddev	.0007	.0017	.0009	.08	.015	.0002	.03	.0024	.0003
%RSD	5.350	6.781	3.094	.2917	.7078	.6163	.2988	.5417	6.195
#1	.0129	.0268	.0274	27.86	2.175	.0338	11.00	.4462	.0050
#2	.0117	.0254	.0269	27.98	2.155	.0334	10.98	.4442	.0050
#3	.0126	.0234	.0285	28.02	2.186	.0337	11.05	.4490	.0045
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.137	.0265	1.392	.0167	13.95	.0028	.0024	1.419	<.0000
Stddev	.012	.0001	.007	.0017	.12	.0004	.0008	.009	.0001
%RSD	.5608	.3620	.5104	10.24	.8941	14.73	31.62	.5983	11.97
#1	2.128	.0266	1.390	.0181	14.01	.0031	.0017	1.417	-.0012
#2	2.133	.0266	1.399	.0173	14.04	.0023	.0033	1.412	-.0009
#3	2.151	.0264	1.385	.0148	13.81	.0030	.0023	1.429	-.0011
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9030-B-2-J Acquired: 11/13/2014 20:34:25 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4504	.0108	.8060	.0026	.0880	.0883	.0722
Stddev	.0017	.0041	.0024	.0015	.0422	.0025	.0008
%RSD	.3813	38.20	.2979	55.88	47.90	2.886	1.044
#1	.4494	.0149	.8033	.0022	.0699	.0912	.0723
#2	.4495	.0108	.8079	.0043	.1362	.0868	.0729
#3	.4524	.0066	.8068	.0015	.0579	.0868	.0714
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3604.4
Stddev	7.7
%RSD	.21435
#1	3599.3
#2	3600.5
#3	3613.3

Sample Name: 160-9030-B-3-X Acquired: 11/13/2014 20:38:15 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	11.00	.0079	.0070	.3129	.0008	<.0000	32.62	<.0000
Stddev	.0010	.02	.0012	.0017	.0003	.0001	.0027	.42	.0002
%RSD	489.4	.1676	14.61	24.26	.1086	7.894	762.6	1.295	50.34
#1	.0000	10.98	.0069	.0089	.3133	.0007	.0005	32.15	-.0004
#2	.0007	11.02	.0092	.0066	.3127	.0008	.0018	32.97	-.0005
#3	-.0013	11.01	.0077	.0056	.3128	.0007	-.0034	32.74	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0102	.0171	.0196	28.04	2.805	.0189	6.740	.5378	.0011
Stddev	.0002	.0024	.0032	.00	.031	.0010	.009	.0010	.0002
%RSD	2.292	14.35	16.49	.0115	1.113	5.075	.1394	.1877	22.48
#1	.0104	.0163	.0206	28.04	2.826	.0179	6.741	.5371	.0010
#2	.0104	.0198	.0160	28.04	2.769	.0198	6.748	.5390	.0010
#3	.0100	.0151	.0222	28.04	2.821	.0191	6.730	.5373	.0014
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.951	.0120	1.363	.0164	3.412	.0004	.0024	1.107	<.0000
Stddev	.001	.0007	.021	.0005	.054	.0021	.0012	.005	.0017
%RSD	.0205	5.867	1.555	2.881	1.590	559.5	48.29	.4916	444.6
#1	4.952	.0112	1.339	.0161	3.349	-.0005	.0015	1.102	-.0009
#2	4.950	.0125	1.379	.0170	3.437	-.0012	.0020	1.105	-.0018
#3	4.952	.0123	1.370	.0162	3.448	.0027	.0037	1.113	.0015
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9030-B-3-X Acquired: 11/13/2014 20:38:15 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1252	.0036	.9278	.0037	.2186	.0489	.0787
Stddev	.0002	.0016	.0032	.0011	.0191	.0016	.0012
%RSD	.1935	44.82	.3451	29.39	8.740	3.294	1.552
#1	.1250	.0048	.9313	.0031	.1974	.0483	.0773
#2	.1255	.0018	.9251	.0050	.2240	.0508	.0796
#3	.1251	.0043	.9270	.0031	.2344	.0477	.0792
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3566.3
Stddev	28.8
%RSD	.80709
#1	3585.5
#2	3533.2
#3	3580.2

Sample Name: 160-9069-B-4-K Acquired: 11/13/2014 20:42:07 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0010**	**11.90**	**.0122**	**.0060**	**.4526**	**.0007**	**.0036**	**47.06**	**.0007**
Stddev	.0003	.01	.0009	.0028	.0003	.0000	.0001	.34	.0002
%RSD	34.35	.1097	7.088	47.52	.0738	2.394	2.219	.7259	26.07
#1	.0013	11.90	.0125	.0082	.4527	.0007	.0037	47.40	.0006
#2	.0006	11.89	.0112	.0070	.4522	.0007	.0037	47.06	.0005
#3	.0011	11.92	.0128	.0028	.4528	.0007	.0036	46.72	.0009
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0122**	**.0155**	**.0332**	**19.42**	**2.268**	**.0167**	**6.428**	**.7189**	**.0040**
Stddev	.0003	.0005	.0021	.02	.019	.0014	.036	.0020	.0004
%RSD	2.584	3.331	6.427	.0789	.8371	8.210	.5598	.2745	9.239
#1	.0121	.0154	.0328	19.41	2.251	.0155	6.444	.7208	.0036
#2	.0125	.0151	.0355	19.44	2.264	.0165	6.386	.7168	.0039
#3	.0118	.0161	.0313	19.41	2.288	.0182	6.452	.7190	.0043
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.6016**	**.0148**	**.6674**	**.0731**	**2.148**	**.0030**	**.0019**	**1.137**	**<.0000**
Stddev	.0044	.0007	.0052	.0020	.021	.0016	.0029	.013	.0005
%RSD	.7236	4.430	.7851	2.795	.9854	52.13	153.4	1.126	101.8
#1	.6055	.0156	.6728	.0754	2.170	.0020	-.0012	1.151	-.0010
#2	.5969	.0147	.6671	.0719	2.146	.0048	.0046	1.133	-.0001
#3	.6025	.0143	.6623	.0719	2.127	.0021	.0024	1.126	-.0004
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9069-B-4-K Acquired: 11/13/2014 20:42:07 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2097	.0048	.2294	.0012	.0752	.0490	.2266
Stddev	.0004	.0025	.0011	.0026	.0702	.0027	.0021
%RSD	.2049	51.97	.4871	219.8	93.44	5.472	.9113
#1	.2093	.0040	.2282	.0009	.1487	.0467	.2287
#2	.2097	.0028	.2294	-.0013	.0680	.0485	.2266
#3	.2102	.0075	.2305	.0039	.0088	.0519	.2246
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3545.5
Stddev	21.2
%RSD	.59684
#1	3525.7
#2	3543.0
#3	3567.8

Sample Name: 160-9069-B-5-O Acquired: 11/13/2014 20:45:57 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0013**	**11.04**	**.0345**	**<.0000**	**.6790**	**.0007**	**.0013**	**33.11**	**.0012**
Stddev	.0003	.02	.0008	.0023	.0005	.0000	.0006	.30	.0002
%RSD	24.08	.1544	2.222	162.7	.0692	6.045	51.20	.8930	18.98
#1	.0016	11.02	.0348	-.0041	.6794	.0007	.0020	32.77	.0010
#2	.0012	11.05	.0350	-.0005	.6785	.0008	.0007	33.20	.0012
#3	.0010	11.05	.0336	.0003	.6791	.0007	.0011	33.34	.0014
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0088**	**.0176**	**.0678**	**27.85**	**1.763**	**.0138**	**6.935**	**1.002**	**.0077**
Stddev	.0004	.0014	.0017	.08	.011	.0015	.044	.001	.0003
%RSD	4.087	7.805	2.440	.2963	.6197	10.62	.6423	.1380	3.421
#1	.0085	.0173	.0694	27.77	1.762	.0123	6.903	1.001	.0075
#2	.0092	.0190	.0661	27.85	1.753	.0152	6.915	1.002	.0080
#3	.0087	.0163	.0679	27.93	1.774	.0139	6.986	1.003	.0076
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.5766**	**.0118**	**.9055**	**.1183**	**1.594**	**.0033**	**.0023**	**1.322**	**<.0000**
Stddev	.0027	.0002	.0131	.0027	.019	.0024	.0042	.030	.0016
%RSD	.4597	1.950	1.443	2.271	1.167	74.95	185.7	2.287	311.4
#1	.5797	.0120	.8906	.1154	1.572	.0007	.0060	1.306	.0011
#2	.5752	.0115	.9109	.1188	1.605	.0034	.0031	1.357	-.0020
#3	.5750	.0118	.9150	.1206	1.604	.0056	-.0023	1.304	-.0006
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9069-B-5-O Acquired: 11/13/2014 20:45:57 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1588	.0087	.3032	<.0000	<.0000	.0530	.3811
Stddev	.0001	.0018	.0014	.0010	.0801	.0024	.0038
%RSD	.0906	20.61	.4596	215.3	163.1	4.468	1.010
#1	.1586	.0071	.3022	.0005	-.0290	.0506	.3768
#2	.1588	.0106	.3027	-.0004	.0190	.0531	.3827
#3	.1589	.0084	.3048	-.0014	-.1374	.0553	.3840
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3541.7
Stddev	25.3
%RSD	.71572
#1	3566.7
#2	3542.4
#3	3516.1

Sample Name: 160-9069-C-6-I Acquired: 11/13/2014 20:49:47 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=5

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	15.94	.0122	.0018	.4123	.0012	.0041	52.14	.0002
Stddev	.0002	.06	.0028	.0018	.0018	.0000	.0021	1.08	.0001
%RSD	256.4	.3911	22.62	100.2	.4473	2.011	50.55	2.076	46.74
#1	-.0002	15.92	.0093	.0028	.4118	.0012	.0020	50.89	.0003
#2	.0002	15.88	.0148	-.0003	.4107	.0012	.0062	52.80	.0001
#3	-.0002	16.00	.0124	.0029	.4143	.0012	.0041	52.73	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0084	.0168	.0165	19.41	3.881	.0178	8.516	.4135	.0012
Stddev	.0002	.0008	.0009	.07	.031	.0009	.055	.0029	.0002
%RSD	2.427	4.502	5.317	.3419	.7953	4.791	.6459	.7094	16.76
#1	.0085	.0177	.0175	19.39	3.861	.0184	8.455	.4115	.0013
#2	.0085	.0163	.0163	19.36	3.916	.0183	8.532	.4122	.0009
#3	.0082	.0165	.0158	19.49	3.865	.0169	8.561	.4169	.0013
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.656	.0147	.7717	.0271	3.638	.0064	.0036	1.269	<.0000
Stddev	.014	.0001	.0195	.0014	.100	.0030	.0051	.012	.0003
%RSD	.8245	.6660	2.524	5.007	2.739	46.10	144.0	.9089	21.22
#1	1.644	.0148	.7493	.0256	3.523	.0043	.0023	1.256	-.0015
#2	1.652	.0147	.7847	.0284	3.690	.0098	.0092	1.271	-.0010
#3	1.671	.0147	.7812	.0272	3.701	.0052	-.0008	1.279	-.0016
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9069-C-6-I Acquired: 11/13/2014 20:49:47 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=5

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2913	.0125	.1335	.0032	.2340	.0473	.0660
Stddev	.0012	.0026	.0009	.0010	.0248	.0014	.0017
%RSD	.4040	20.53	.6984	31.12	10.60	2.888	2.565
#1	.2914	.0107	.1345	.0021	.2054	.0464	.0640
#2	.2900	.0115	.1332	.0040	.2482	.0489	.0667
#3	.2923	.0155	.1327	.0035	.2484	.0466	.0672
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3427.5
Stddev	26.7
%RSD	.77893
#1	3458.1
#2	3408.6
#3	3415.9

Sample Name: CCV Acquired: 11/13/2014 20:53:39 Type: QC
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.053**	**51.59**	**5.366**	**4.869**	**5.352**	**5.246**	**5.384**	**52.88**	**5.369**
Stddev	.007	.10	.034	.013	.009	.023	.034	.33	.032
%RSD	.6499	.2015	.6277	.2714	.1728	.4345	.6357	.6178	.5946
#1	1.051	51.70	5.360	4.863	5.359	5.220	5.365	52.69	5.353
#2	1.061	51.49	5.335	4.861	5.342	5.257	5.363	52.69	5.348
#3	1.048	51.59	5.402	4.885	5.355	5.262	5.423	53.25	5.406
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.362**	**5.430**	**5.379**	**50.96**	**53.22**	**5.238**	**50.66**	**5.008**	**1.052**
Stddev	.038	.032	.031	.10	.11	.005	.10	.008	.007
%RSD	.7005	.5937	.5760	.1994	.1974	.0908	.2051	.1674	.6418
#1	5.342	5.396	5.372	51.07	53.33	5.242	50.71	5.012	1.049
#2	5.339	5.461	5.352	50.91	53.21	5.239	50.54	4.998	1.047
#3	5.406	5.433	5.413	50.88	53.13	5.233	50.73	5.014	1.059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**51.96**	**5.405**	**54.21**	**5.445**	**51.72**	**1.071**	**1.083**	**4.948**	**5.431**
Stddev	.07	.036	.25	.035	.21	.004	.007	.006	.036
%RSD	.1352	.6639	.4635	.6435	.4149	.3546	.6171	.1277	.6665
#1	51.99	5.384	54.19	5.430	51.75	1.070	1.078	4.946	5.410
#2	51.88	5.385	53.96	5.420	51.49	1.067	1.079	4.955	5.411
#3	52.00	5.447	54.46	5.485	51.92	1.075	1.090	4.943	5.473
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: CCV Acquired: 11/13/2014 20:53:39 Type: QC
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.296**	**5.222**	**5.219**	**1.080**	**5.399**	**5.077**	**5.385**
Stddev	.055	.037	.001	.008	.110	.014	.026
%RSD	1.035	.7012	.0209	.7595	2.039	.2793	.4836
#1	5.234	5.196	5.220	1.076	5.325	5.070	5.375
#2	5.317	5.264	5.218	1.074	5.525	5.068	5.366
#3	5.337	5.207	5.218	1.089	5.346	5.094	5.415
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**3476.3**
Stddev	23.5
%RSD	.67704
#1	3503.3
#2	3464.8
#3	3460.6

Sample Name: CCB Acquired: 11/13/2014 20:57:23 Type: QC
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0049	.0006	.0120	.0003	.0005	.0038	.0027
Stddev	.0008	.0086	.0013	.0014	.0003	.0001	.0044	.0014
%RSD	298.5	176.7	219.4	11.67	85.88	19.61	115.5	53.98
#1	.0004	.0086	.0002	.0134	.0007	.0006	.0064	.0041
#2	-.0011	.0109	-.0004	.0106	.0003	.0005	.0063	.0026
#3	-.0001	-.0050	.0020	.0120	.0001	.0004	-.0013	.0012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Cd2288	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	<.0000	.0006	<.0000	.0064	<.0000	<.0000	.0036
Stddev	.0002	.0004	.0011	.0020	.0024	.0422	.0012	.0081
%RSD	102.1	621.5	182.8	174.0	38.22	625.8	871.9	225.3
#1	.0005	-.0001	.0016	.0011	.0086	-.0368	-.0007	-.0023
#2	.0001	-.0004	-.0006	-.0019	.0068	-.0249	-.0010	.0128
#3	.0001	.0003	.0008	-.0027	.0038	.0415	.0012	.0003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mn2576	Mo2020	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	<.0000	.0170	.0003	.0011	.0015	.0027	.0016
Stddev	.0004	.0002	.0075	.0002	.0012	.0005	.0040	.0021
%RSD	119.8	20.87	44.15	48.46	107.9	31.28	150.5	133.1
#1	.0007	-.0009	.0090	.0002	.0009	.0016	.0073	.0019
#2	.0004	-.0007	.0182	.0005	.0001	.0019	.0003	.0035
#3	-.0001	-.0006	.0239	.0003	.0025	.0010	.0004	-.0007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB Acquired: 11/13/2014 20:57:23 Type: QC
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2516	Sn1899	Sr4077	Th2832	Ti3349	Tl1908	U_3670
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000**	**<.0000**	**.0006**	**.0006**	**<.0000**	**.0002**	**.0003**	**W .1216**
Stddev	.0015	.0050	.0004	.0000	.0017	.0002	.0015	.0881
%RSD	139400.	51.92	57.19	3.436	27.37	126.4	609.7	72.48
#1	.0010	-.0149	.0009	.0006	-.0082	.0004	-.0007	.2063
#2	-.0017	-.0093	.0002	.0006	-.0051	.0000	-.0005	.1282
#3	.0007	-.0048	.0007	.0005	-.0054	.0002	.0020	.0304
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn
High Limit								.0480
Low Limit								-.0470

Elem	V_2908	Zn2138
Units	ppm	ppm
Avg	**.0012**	**.0001**
Stddev	.0008	.0002
%RSD	67.86	235.4
#1	.0020	.0003
#2	.0004	.0000
#3	.0013	-.0001
Check ?	Chk Pass	Chk Pass
High Limit		
Low Limit		

Int. Std.	Y_3710
Units	Cts/S
Avg	**3537.0**
Stddev	51.6
%RSD	1.4596
#1	3486.6
#2	3534.8
#3	3589.8

Sample Name: LB 160-155980/1-A Acquired: 11/13/2014 21:01:20 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0020**	**.0015**	**.0016**	**.0837**	**.0016**	**.0001**	**<.0000**	**.8280**	**<.0000**
Stddev	.0007	.0037	.0023	.0051	.0000	.0000	.0012	.0073	.0001
%RSD	35.05	246.9	149.1	6.112	2.963	46.68	41.51	.8824	131.9
#1	.0016	.0044	.0018	.0823	.0016	.0001	-.0041	.8360	-.0002
#2	.0016	.0027	.0038	.0894	.0017	.0000	-.0027	.8216	.0000
#3	.0028	-.0027	-.0009	.0794	.0016	.0001	-.0017	.8265	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**<.0000**	**.0047**	**<.0000**	**.0056**	**.1112**	**.0017**	**.1892**	**.0002**	**<.0000**
Stddev	.0005	.0019	.0023	.0011	.0216	.0003	.0127	.0004	.0003
%RSD	198.8	39.98	62.70	19.47	19.45	17.43	6.732	150.2	108.0
#1	.0001	.0034	-.0064	.0043	.1360	.0018	.1756	-.0001	-.0006
#2	.0000	.0038	-.0019	.0060	.1015	.0018	.2008	.0006	.0000
#3	-.0008	.0068	-.0030	.0064	.0961	.0013	.1914	.0003	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**522.7**	**.0001**	**.0011**	**.0019**	**.2598**	**<.0000**	**<.0000**	**.0736**	**.0008**
Stddev	10.2	.0007	.0013	.0019	.0021	.0021	.0024	.0024	.0002
%RSD	1.942	488.6	119.5	102.9	.8231	716.2	99.16	3.285	26.39
#1	520.3	-.0005	.0012	.0040	.2617	-.0005	-.0001	.0709	.0010
#2	533.9	.0008	-.0003	.0003	.2575	.0019	-.0049	.0756	.0007
#3	514.0	.0000	.0023	.0012	.2603	-.0023	-.0023	.0744	.0007
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LB 160-155980/1-A Acquired: 11/13/2014 21:01:20 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0019	<.0000	<.0000	.0002	<.0000	.0026	.0089
Stddev	.0001	.0024	.0009	.0009	.1371	.0026	.0003
%RSD	2.975	27.00	279.0	597.6	43.44	101.7	2.910
#1	.0019	-.0064	-.0012	-.0001	-.1709	.0023	.0092
#2	.0018	-.0094	.0006	-.0006	-.3325	.0053	.0087
#3	.0019	-.0112	-.0003	.0012	-.4436	.0001	.0087
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3685.5
Stddev	55.3
%RSD	1.4992
#1	3622.3
#2	3709.3
#3	3724.9

Sample Name: LCS 160-155980/2-A Acquired: 11/13/2014 21:05:24 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2082	9.895	1.039	1.965	1.041	1.030	.9969	11.33	1.025
Stddev	.0034	.013	.020	.005	.002	.001	.0156	.15	.014
%RSD	1.633	.1283	1.957	.2350	.1624	.0495	1.568	1.349	1.328
#1	.2118	9.892	1.061	1.971	1.039	1.031	1.015	11.50	1.041
#2	.2076	9.884	1.020	1.963	1.043	1.030	.9847	11.22	1.015
#3	.2051	9.909	1.035	1.963	1.041	1.029	.9916	11.26	1.020
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.044	1.035	1.028	9.904	10.32	1.010	9.702	.9596	.5019
Stddev	.014	.012	.013	.028	.04	.001	.033	.0010	.0066
%RSD	1.383	1.142	1.237	.2788	.3765	.0653	.3433	.1008	1.319
#1	1.061	1.049	1.042	9.933	10.35	1.011	9.663	.9607	.5092
#2	1.036	1.029	1.017	9.902	10.34	1.010	9.718	.9591	.4963
#3	1.036	1.027	1.026	9.878	10.28	1.010	9.724	.9589	.5001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	575.2	1.028	1.087	1.031	10.31	.5007	.5295	.1475	1.017
Stddev	5.4	.014	.013	.016	.17	.0105	.0146	.0039	.012
%RSD	.9464	1.359	1.193	1.590	1.687	2.099	2.750	2.669	1.215
#1	581.2	1.044	1.101	1.050	10.50	.5124	.5462	.1430	1.031
#2	570.6	1.017	1.077	1.021	10.16	.4921	.5219	.1501	1.007
#3	574.0	1.023	1.082	1.022	10.27	.4977	.5203	.1495	1.012
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LCS 160-155980/2-A Acquired: 11/13/2014 21:05:24 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.040**	**.9858**	**1.024**	**.2045**	**.6875**	**.9936**	**1.057**
Stddev	.003	.0132	.003	.0054	.0788	.0071	.016
%RSD	.2761	1.335	.2980	2.649	11.46	.7160	1.487
#1	1.037	1.000	1.021	.2106	.7701	.9942	1.075
#2	1.043	.9833	1.027	.2022	.6791	.9862	1.045
#3	1.039	.9742	1.025	.2005	.6133	1.000	1.051
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**3534.8**
Stddev	32.8
%RSD	.92863
#1	3498.4
#2	3562.1
#3	3543.8

Sample Name: 160-9144-A-1-B Acquired: 11/13/2014 21:09:09 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0004**	**<.0000**	**.0027**	**.1130**	**.0024**	**.0001**	**.0060**	**1.072**	**<.0000**
Stddev	.0002	.0107	.0018	.0015	.0001	.0000	.0036	.005	.0002
%RSD	48.27	151.5	67.17	1.348	5.198	42.28	59.10	.4605	268.3
#1	.0002	-.0188	.0007	.1113	.0023	.0001	.0033	1.070	.0002
#2	.0006	-.0043	.0042	.1142	.0025	.0001	.0047	1.068	-.0002
#3	.0003	.0020	.0030	.1134	.0025	.0001	.0100	1.077	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**.0022**	**.0010**	**.0069**	**.2668**	**.0013**	**.2308**	**.0009**	**<.0000**
Stddev	.0004	.0012	.0004	.0024	.0378	.0008	.0166	.0003	.0003
%RSD	431.7	52.36	38.39	34.84	14.17	59.05	7.189	28.95	142.7
#1	.0005	.0028	.0006	.0045	.3097	.0019	.2117	.0007	-.0002
#2	.0000	.0009	.0013	.0093	.2521	.0015	.2407	.0007	-.0006
#3	-.0002	.0031	.0012	.0069	.2385	.0004	.2401	.0012	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**468.1**	**.0009**	**.0786**	**.0034**	**2.488**	**.0018**	**<.0000**	**1.034**	**.0013**
Stddev	7.4	.0003	.0013	.0016	.007	.0010	.0056	.009	.0005
%RSD	1.590	37.26	1.593	46.75	.2711	55.51	2071.	.9225	35.81
#1	472.1	.0011	.0798	.0040	2.482	.0026	-.0055	1.038	.0018
#2	459.5	.0005	.0788	.0047	2.485	.0007	.0056	1.023	.0013
#3	472.7	.0010	.0773	.0016	2.495	.0022	-.0009	1.041	.0009
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9144-A-1-B Acquired: 11/13/2014 21:09:09 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0014	<.0000	<.0000	.0038	<.0000	.0017	.0149
Stddev	.0001	.0050	.0006	.0011	.0304	.0024	.0000
%RSD	5.934	57.27	746.2	29.29	12.56	141.7	.2656
#1	.0015	-.0029	.0000	.0025	-.2096	.0014	.0148
#2	.0014	-.0115	-.0008	.0043	-.2456	.0043	.0149
#3	.0014	-.0116	.0005	.0046	-.2700	-.0005	.0149
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3475.1
Stddev	17.7
%RSD	.51021
#1	3458.3
#2	3493.6
#3	3473.5

Sample Name: 160-9144-A-1-B SD Acquired: 11/13/2014 21:13:13 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=5

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0011	<.0000	.0006	.0214	.0007	.0000	.0004	.2337	<.0000
Stddev	.0006	.0092	.0029	.0034	.0002	.0000	.0031	.0035	.0001
%RSD	55.78	96.66	484.2	15.90	32.43	42.08	776.2	1.513	31.87
#1	.0010	-.0117	-.0015	.0175	.0004	.0000	.0020	.2302	-.0002
#2	.0005	.0006	-.0006	.0228	.0009	.0000	.0024	.2337	-.0002
#3	.0017	-.0174	.0039	.0238	.0008	.0001	-.0032	.2373	-.0004
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0013	<.0000	.0016	.0595	.0003	.0427	.0001	<.0000
Stddev	.0007	.0018	.0008	.0028	.0263	.0019	.0011	.0001	.0004
%RSD	1191.	139.9	54.40	176.8	44.10	591.2	2.661	245.7	85.10
#1	-.0001	-.0008	-.0021	.0049	.0770	.0015	.0421	.0001	.0000
#2	.0006	.0025	-.0006	.0003	.0293	-.0018	.0420	-.0001	-.0005
#3	-.0007	.0023	-.0016	-.0003	.0723	.0013	.0440	.0002	-.0008
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	94.76	.0002	.0139	.0005	.5149	.0016	.0003	.1948	<.0000
Stddev	.27	.0001	.0014	.0007	.0094	.0011	.0024	.0026	.0011
%RSD	.2819	36.47	9.993	134.5	1.826	67.08	901.5	1.352	510.9
#1	94.62	.0002	.0147	.0006	.5042	.0026	.0002	.1978	-.0014
#2	95.07	.0003	.0146	.0011	.5217	.0004	-.0021	.1931	.0000
#3	94.59	.0002	.0123	-.0002	.5189	.0018	.0027	.1934	.0008
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9144-A-1-B SD Acquired: 11/13/2014 21:13:13 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=5

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	<.0000	.0001	<.0000	.0182	<.0000	.0090
Stddev	.0001	.0061	.0004	.0034	.0098	.0020	.0002
%RSD	18.52	94.65	454.4	353.2	53.91	443.5	2.035
#1	.0004	-.0037	-.0004	.0029	.0267	.0007	.0089
#2	.0003	-.0022	.0003	-.0023	.0204	-.0028	.0089
#3	.0003	-.0135	.0003	-.0035	.0075	.0007	.0092
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3454.5
Stddev	46.2
%RSD	1.3367
#1	3495.5
#2	3463.6
#3	3404.5

Sample Name: 160-9144-A-1-C MS Acquired: 11/13/2014 21:17:08 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1917**	**9.239**	**.9824**	**1.819**	**.9677**	**.9585**	**.9585**	**10.70**	**.9724**
Stddev	.0030	.065	.0151	.008	.0038	.0045	.0175	.18	.0161
%RSD	1.570	.6983	1.532	.4551	.3908	.4720	1.825	1.662	1.656
#1	.1936	9.275	.9917	1.810	.9681	.9600	.9740	10.83	.9827
#2	.1933	9.277	.9903	1.827	.9713	.9620	.9619	10.77	.9806
#3	.1882	9.164	.9650	1.820	.9638	.9534	.9395	10.50	.9538
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.9836**	**.9784**	**.9796**	**9.117**	**9.697**	**.9505**	**9.021**	**.8803**	**.4757**
Stddev	.0168	.0108	.0189	.039	.029	.0016	.082	.0081	.0080
%RSD	1.712	1.102	1.931	.4267	.3030	.1694	.9053	.9159	1.684
#1	.9961	.9887	.9924	9.131	9.726	.9499	9.095	.8841	.4807
#2	.9902	.9794	.9885	9.147	9.698	.9524	9.035	.8858	.4798
#3	.9644	.9672	.9579	9.073	9.667	.9494	8.933	.8710	.4664
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**480.0**	**.9807**	**1.101**	**.9731**	**12.04**	**.4777**	**.5070**	**1.140**	**.9719**
Stddev	7.4	.0139	.023	.0187	.24	.0096	.0103	.008	.0141
%RSD	1.548	1.422	2.100	1.922	1.955	2.005	2.034	.7018	1.451
#1	472.8	.9909	1.117	.9865	12.20	.4811	.5132	1.145	.9825
#2	487.7	.9864	1.112	.9810	12.15	.4851	.5127	1.145	.9773
#3	479.6	.9648	1.075	.9517	11.77	.4669	.4951	1.131	.9559
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9144-A-1-C MS Acquired: 11/13/2014 21:17:08 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9618	.9319	.9567	.1939	.7149	.9063	1.055
Stddev	.0036	.0114	.0029	.0034	.0544	.0036	.018
%RSD	.3701	1.223	.2997	1.729	7.612	.3930	1.714
#1	.9626	.9438	.9550	.1960	.7664	.9104	1.066
#2	.9649	.9308	.9600	.1956	.7204	.9047	1.064
#3	.9580	.9211	.9551	.1900	.6580	.9038	1.034
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3492.8
Stddev	39.5
%RSD	1.1303
#1	3458.9
#2	3483.4
#3	3536.1

Sample Name: 160-9144-A-1-D MSD Acquired: 11/13/2014 21:20:53 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1962	9.895	1.051	1.930	1.039	1.023	1.004	11.34	1.039
Stddev	.0013	.032	.011	.007	.003	.004	.010	.11	.010
%RSD	.6551	.3190	1.043	.3683	.3096	.3989	.9585	.9610	.9576
#1	.1971	9.931	1.045	1.927	1.043	1.027	1.003	11.35	1.043
#2	.1947	9.879	1.045	1.938	1.038	1.019	.9950	11.22	1.028
#3	.1968	9.874	1.064	1.925	1.037	1.022	1.014	11.44	1.046
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.052	1.036	1.059	9.705	10.40	1.019	9.551	.9359	.4987
Stddev	.009	.010	.012	.031	.00	.004	.054	.0044	.0044
%RSD	.8343	.9376	1.128	.3224	.0324	.3956	.5641	.4722	.8810
#1	1.054	1.041	1.062	9.740	10.40	1.022	9.573	.9382	.4992
#2	1.042	1.025	1.046	9.680	10.40	1.020	9.489	.9308	.4941
#3	1.059	1.041	1.069	9.696	10.39	1.014	9.590	.9387	.5028
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	505.6	1.050	1.177	1.041	12.60	.5027	.5416	1.178	1.023
Stddev	2.6	.010	.014	.011	.11	.0048	.0069	.007	.009
%RSD	.5098	.9507	1.187	1.054	.8420	.9617	1.268	.5817	.9223
#1	502.7	1.052	1.178	1.041	12.60	.5017	.5401	1.184	1.024
#2	507.8	1.040	1.163	1.030	12.49	.4984	.5357	1.170	1.013
#3	506.1	1.059	1.191	1.052	12.71	.5079	.5491	1.179	1.032
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9144-A-1-D MSD Acquired: 11/13/2014 21:20:53 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.032	.9846	1.002	.2044	.8063	.9678	1.131
Stddev	.003	.0077	.000	.0028	.0663	.0019	.010
%RSD	.3002	.7832	.0345	1.390	8.228	.1982	.8478
#1	1.036	.9862	1.002	.2015	.8193	.9658	1.132
#2	1.030	.9762	1.002	.2072	.7344	.9696	1.121
#3	1.032	.9914	1.001	.2045	.8652	.9680	1.140
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3512.7
Stddev	28.3
%RSD	.80445
#1	3498.7
#2	3545.2
#3	3494.2

Sample Name: 160-9115-A-1-F Acquired: 11/13/2014 21:24:36 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0015**	**.0062**	**.0063**	**.1585**	**.0128**	**.0001**	**.0006**	**1.897**	**.0002**
Stddev	.0008	.0127	.0012	.0030	.0001	.0000	.0069	.042	.0001
%RSD	53.15	205.7	19.03	1.908	.9766	31.37	1086.	2.222	60.18
#1	.0006	.0094	.0056	.1564	.0127	.0001	-.0012	1.930	.0003
#2	.0023	-.0078	.0055	.1620	.0129	.0001	-.0051	1.912	.0001
#3	.0017	.0169	.0076	.1572	.0127	.0001	.0083	1.850	.0004
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**<.0000**	**.1786**	**<.0000**	**.0108**	**.4336**	**.0014**	**.2991**	**.0004**	**.0073**
Stddev	.0002	.0042	.0017	.0026	.0258	.0010	.0167	.0003	.0005
%RSD	128.6	2.360	68.20	24.36	5.945	74.18	5.583	73.84	6.620
#1	.0001	.1816	-.0025	.0080	.4546	.0019	.3106	.0006	.0078
#2	-.0003	.1804	-.0043	.0111	.4415	.0002	.3067	.0003	.0070
#3	-.0002	.1738	-.0008	.0133	.4049	.0021	.2799	.0001	.0071
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**516.9**	**.0004**	**.0164**	**.0023**	**12.16**	**.0043**	**.0021**	**.3840**	**.0016**
Stddev	18.0	.0002	.0018	.0012	.32	.0040	.0028	.0024	.0005
%RSD	3.488	52.98	11.04	52.22	2.601	93.51	135.2	.6176	33.13
#1	533.4	.0005	.0152	.0030	12.37	.0008	.0008	.3848	.0010
#2	519.7	.0002	.0185	.0030	12.32	.0033	.0053	.3859	.0020
#3	497.7	.0005	.0156	.0009	11.80	.0086	.0001	.3814	.0018
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9115-A-1-F Acquired: 11/13/2014 21:24:36 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0116	<.0000	.0002	.0024	<.0000	.0086	.0217
Stddev	.0000	.0058	.0007	.0008	.0381	.0007	.0008
%RSD	.3031	171.1	382.5	32.80	22.45	7.645	3.490
#1	.0116	.0015	.0009	.0015	-.1544	.0088	.0225
#2	.0116	-.0019	-.0005	.0030	-.1414	.0078	.0217
#3	.0117	-.0099	.0002	.0026	-.2129	.0091	.0209
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3487.5
Stddev	68.2
%RSD	1.9544
#1	3434.8
#2	3463.1
#3	3564.4

Sample Name: 160-9115-A-2-D Acquired: 11/13/2014 21:28:37 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.3121	.0041	.2562	.0153	.0001	.0072	1.629	<.0000
Stddev	.0004	.0092	.0025	.0039	.0003	.0000	.0018	.044	.0001
%RSD	67.68	2.955	61.19	1.536	1.722	35.43	24.89	2.719	354.0
#1	-.0010	.3138	.0023	.2548	.0156	.0001	.0083	1.673	.0000
#2	-.0006	.3021	.0031	.2606	.0151	.0002	.0081	1.630	.0000
#3	-.0002	.3203	.0070	.2531	.0152	.0001	.0051	1.585	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0010	.5023	.0143	.5779	.3742	.0009	.3848	.0018	.0018
Stddev	.0003	.0137	.0015	.0069	.0351	.0009	.0079	.0003	.0002
%RSD	30.89	2.725	10.48	1.194	9.389	98.57	2.057	14.74	12.42
#1	.0007	.5156	.0128	.5839	.3590	.0019	.3794	.0020	.0016
#2	.0013	.5030	.0158	.5796	.3492	.0003	.3939	.0015	.0021
#3	.0009	.4882	.0143	.5704	.4144	.0005	.3811	.0020	.0018
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	12.42	.0024	.0229	.0037	2.143	.0031	.0007	.4406	.0010
Stddev	.05	.0001	.0013	.0018	.065	.0011	.0037	.0046	.0017
%RSD	.3848	5.341	5.698	49.24	3.028	36.04	529.3	1.046	168.6
#1	12.44	.0025	.0234	.0022	2.208	.0037	-.0016	.4381	-.0009
#2	12.45	.0023	.0238	.0031	2.142	.0039	-.0012	.4377	.0025
#3	12.37	.0025	.0214	.0057	2.079	.0018	.0049	.4459	.0014
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9115-A-2-D Acquired: 11/13/2014 21:28:37 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0096	<.0000	.0160	.0013	.3346	.0659	.0320
Stddev	.0000	.0034	.0009	.0017	.1729	.0009	.0011
%RSD	.3304	1117.	5.542	129.8	51.66	1.383	3.463
#1	.0096	-.0040	.0171	.0032	.4971	.0669	.0332
#2	.0096	.0027	.0157	.0004	.3538	.0657	.0317
#3	.0096	.0004	.0154	.0003	.1530	.0651	.0310
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3684.2
Stddev	87.5
%RSD	2.3754
#1	3596.8
#2	3684.1
#3	3771.8

Sample Name: MB 160-155952/1-A Acquired: 11/13/2014 21:32:28 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	.0006	.0104	.0004	<.0000	.0035	.0825	.0001
Stddev	.0004	.0045	.0027	.0059	.0002	.0000	.0052	.0010	.0001
%RSD	33.05	141.1	458.3	56.26	33.97	145.3	148.2	1.168	123.0
#1	-.0009	-.0009	.0005	.0038	.0003	.0000	.0077	.0816	.0000
#2	-.0017	-.0084	-.0021	.0150	.0006	.0000	.0052	.0835	.0001
#3	-.0015	-.0003	.0033	.0124	.0005	.0000	-.0023	.0825	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0004	<.0000	.0072	<.0000	.0002	.0156	<.0000	<.0000
Stddev	.0003	.0020	.0026	.0008	.0161	.0003	.0031	.0001	.0004
%RSD	91.26	512.6	111.3	10.57	84.21	136.7	19.88	40.90	469.5
#1	-.0004	-.0019	-.0015	.0066	-.0010	.0000	.0161	-.0002	.0000
#2	-.0006	.0012	-.0052	.0081	-.0320	.0001	.0183	-.0005	.0003
#3	.0000	.0018	-.0002	.0070	-.0244	.0005	.0122	-.0003	-.0006
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0974	.0004	.0003	.0007	.0057	.0017	<.0000	.0406	.0006
Stddev	.0150	.0004	.0005	.0010	.0027	.0007	.0029	.0026	.0004
%RSD	15.36	110.9	149.6	135.5	48.05	39.76	25790.	6.436	64.46
#1	.1144	.0006	-.0002	.0014	.0074	.0010	.0032	.0430	.0006
#2	.0913	.0007	.0005	.0012	.0025	.0024	-.0026	.0378	.0011
#3	.0864	-.0001	.0007	-.0004	.0072	.0016	-.0006	.0410	.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: MB 160-155952/1-A Acquired: 11/13/2014 21:32:28 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	<.0000	.0010	<.0000	.1922	<.0000	.0119
Stddev	.0001	.0054	.0005	.0016	.0274	.0044	.0003
%RSD	22.72	141.1	52.43	314.5	14.27	540.1	2.548
#1	.0002	-.0041	.0013	-.0007	.1641	.0031	.0122
#2	.0002	-.0091	.0004	.0012	.1935	.0000	.0119
#3	.0003	.0017	.0013	-.0020	.2190	-.0056	.0116
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3543.2
Stddev	9.4
%RSD	.26616
#1	3553.9
#2	3536.1
#3	3539.6

Sample Name: LCS 160-155952/2-A Acquired: 11/13/2014 21:36:23 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2189	10.33	1.076	2.134	1.079	1.035	1.104	11.48	1.076
Stddev	.0020	.03	.022	.016	.006	.005	.025	.21	.021
%RSD	.9059	.3370	2.017	.7666	.5944	.4562	2.273	1.857	1.923
#1	.2210	10.29	1.096	2.117	1.072	1.030	1.125	11.69	1.097
#2	.2187	10.36	1.078	2.150	1.084	1.040	1.109	11.49	1.077
#3	.2170	10.33	1.053	2.135	1.080	1.035	1.076	11.27	1.055
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.144	1.144	1.105	10.03	10.59	1.058	9.762	.9696	.5412
Stddev	.022	.012	.021	.05	.04	.005	.064	.0021	.0101
%RSD	1.940	1.086	1.852	.4556	.3551	.4574	.6561	.2118	1.867
#1	1.166	1.158	1.127	9.998	10.58	1.053	9.830	.9696	.5510
#2	1.144	1.140	1.102	10.08	10.63	1.063	9.703	.9717	.5418
#3	1.122	1.134	1.087	10.01	10.56	1.059	9.753	.9676	.5308
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.60	1.130	1.119	1.134	10.36	.5400	.5451	2.168	1.125
Stddev	.06	.021	.027	.020	.22	.0083	.0127	.012	.023
%RSD	.5224	1.898	2.425	1.789	2.084	1.543	2.327	.5329	2.038
#1	10.54	1.151	1.145	1.155	10.55	.5489	.5589	2.155	1.148
#2	10.65	1.131	1.121	1.130	10.40	.5388	.5422	2.174	1.126
#3	10.61	1.108	1.091	1.115	10.12	.5324	.5341	2.176	1.102
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LCS 160-155952/2-A Acquired: 11/13/2014 21:36:23 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.074	1.077	1.048	.2287	1.272	.9864	1.108
Stddev	.005	.013	.005	.0055	.102	.0042	.023
%RSD	.5058	1.247	.4989	2.414	8.044	.4307	2.096
#1	1.068	1.091	1.043	.2340	1.378	.9845	1.131
#2	1.079	1.075	1.053	.2289	1.264	.9834	1.109
#3	1.075	1.065	1.049	.2230	1.174	.9913	1.085
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3581.3
Stddev	53.6
%RSD	1.4968
#1	3520.2
#2	3603.0
#3	3620.7

Sample Name: CCV Acquired: 11/13/2014 21:40:00 Type: QC
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.095**	**52.07**	F **5.554**	**4.707**	**5.420**	**5.204**	F **5.573**	**54.37**	F **5.561**
Stddev	.013	.22	.087	.017	.020	.058	.077	.80	.074
%RSD	1.141	.4228	1.564	.3678	.3772	1.110	1.387	1.463	1.336
#1	1.107	52.31	5.652	4.715	5.430	5.202	5.663	55.25	5.644
#2	1.094	51.87	5.520	4.687	5.396	5.263	5.532	54.15	5.536
#3	1.082	52.05	5.489	4.718	5.433	5.148	5.525	53.71	5.502
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Fail
Value			5.000				5.000		5.000
Range			10.00%				10.00%		10.00%

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F **5.539**	F **5.667**	F **5.600**	**49.57**	**53.96**	**5.300**	**49.90**	**4.876**	**1.082**
Stddev	.075	.077	.072	.20	.21	.021	.30	.020	.016
%RSD	1.360	1.359	1.285	.3953	.3822	.3960	.5922	.4134	1.450
#1	5.624	5.743	5.682	49.70	54.07	5.293	50.21	4.897	1.100
#2	5.508	5.670	5.569	49.35	53.72	5.284	49.88	4.858	1.075
#3	5.483	5.589	5.548	49.68	54.09	5.324	49.62	4.873	1.071
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	5.000	5.000	5.000						
Range	10.00%	10.00%	10.00%						

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**52.65**	F **5.588**	F **55.84**	F **5.646**	**52.78**	F **1.108**	F **1.119**	**4.765**	F **5.612**
Stddev	.14	.074	.80	.072	.83	.016	.018	.020	.073
%RSD	.2652	1.325	1.428	1.278	1.565	1.415	1.627	.4154	1.304
#1	52.80	5.671	56.73	5.728	53.72	1.125	1.138	4.769	5.695
#2	52.52	5.563	55.61	5.614	52.46	1.105	1.115	4.743	5.585
#3	52.64	5.530	55.19	5.595	52.16	1.095	1.102	4.782	5.557
Check ?	Chk Pass	Chk Fail	Chk Fail	Chk Fail	Chk Pass	Chk Fail	Chk Fail	Chk Pass	Chk Fail
Value		5.000	50.00	5.000		1.000	1.000		5.000
Range		10.00%	10.00%	10.00%		10.00%	10.00%		10.00%

Sample Name: CCV Acquired: 11/13/2014 21:40:00 Type: QC
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.263	5.412	5.212	F 1.120	F 5.688	5.027	F 5.556
Stddev	.095	.057	.021	.020	.091	.022	.078
%RSD	1.808	1.045	.4067	1.764	1.605	.4459	1.404
#1	5.218	5.474	5.217	1.143	5.758	5.051	5.644
#2	5.199	5.397	5.188	1.110	5.722	5.007	5.530
#3	5.372	5.364	5.230	1.108	5.585	5.022	5.494
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Fail	Chk Pass	Chk Fail
Value				1.000	5.000		5.000
Range				10.00%	10.00%		10.00%

Int. Std.	Y_3710
Units	Cts/S
Avg	3353.1
Stddev	51.7
%RSD	1.5414
#1	3305.4
#2	3346.0
#3	3408.0

Sample Name: CCB Acquired: 11/13/2014 21:43:43 Type: QC
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	.0017	.0115	.0004	.0005	.0009	.0030
Stddev	.0009	.0037	.0021	.0006	.0001	.0001	.0050	.0005
%RSD	65.14	17.37	128.1	5.166	21.64	25.44	562.7	16.18
#1	-.0013	-.0175	.0040	.0122	.0005	.0006	.0027	.0035
#2	-.0023	-.0248	-.0002	.0111	.0004	.0006	.0048	.0026
#3	-.0005	-.0218	.0012	.0113	.0003	.0004	-.0048	.0028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Cd2288	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	.0002	.0003	<.0000	.0056	.0169	.0016	.0060
Stddev	.0002	.0008	.0011	.0033	.0009	.0263	.0016	.0061
%RSD	51.89	498.8	339.9	172.8	16.06	155.8	97.88	102.0
#1	.0006	.0010	.0011	.0012	.0046	.0406	.0014	.0130
#2	.0003	-.0006	.0009	-.0016	.0063	.0214	.0034	.0023
#3	.0002	.0001	-.0010	-.0054	.0059	-.0114	.0002	.0026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mn2576	Mo2020	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	<.0000	.0275	.0001	.0002	.0015	.0047	.0033
Stddev	.0002	.0006	.0062	.0004	.0009	.0007	.0030	.0007
%RSD	43.08	117.7	22.49	274.8	366.5	49.08	65.19	20.17
#1	.0006	-.0005	.0324	-.0001	.0010	.0006	.0079	.0040
#2	.0004	-.0011	.0296	.0006	-.0008	.0019	.0044	.0027
#3	.0003	.0001	.0205	-.0001	.0005	.0019	.0018	.0032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB Acquired: 11/13/2014 21:43:43 Type: QC
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2516	Sn1899	Sr4077	Th2832	Ti3349	Tl1908	U_3670
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	.0005	.0006	<.0000	.0003	<.0000	W .1921
Stddev	.0020	.0039	.0008	.0001	.0040	.0004	.0011	.0016
%RSD	3032.	24.29	146.8	12.96	153.5	156.4	177.9	.8210
#1	-.0024	-.0188	-.0002	.0006	.0013	.0006	.0006	.1930
#2	.0007	-.0181	.0005	.0005	-.0025	.0005	-.0010	.1903
#3	.0015	-.0116	.0014	.0005	-.0066	-.0002	-.0015	.1930
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn
High Limit								.0480
Low Limit								-.0470

Elem	V_2908	Zn2138
Units	ppm	ppm
Avg	<.0000	.0005
Stddev	.0016	.0002
%RSD	569.6	35.13
#1	.0005	.0006
#2	-.0021	.0003
#3	.0008	.0005
Check ?	Chk Pass	Chk Pass
High Limit		
Low Limit		

Int. Std.	Y_3710
Units	Cts/S
Avg	3488.7
Stddev	11.7
%RSD	.33543
#1	3497.8
#2	3475.5
#3	3492.7

Sample Name: 160-9053-B-8-E Acquired: 11/13/2014 21:47:40 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=5

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0002**	**7.643**	**.0067**	**.0079**	**.0309**	**.0004**	**<.0000**	**1.254**	**<.0000**
Stddev	.0006	.010	.0015	.0019	.0001	.0000	.0019	.026	.0002
%RSD	304.0	.1257	21.89	23.84	.4482	4.247	208.2	2.109	192.3
#1	-.0004	7.636	.0083	.0092	.0308	.0004	-.0031	1.229	-.0003
#2	.0007	7.639	.0064	.0088	.0310	.0004	.0002	1.252	.0001
#3	.0002	7.654	.0054	.0057	.0307	.0004	.0001	1.282	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0055**	**.0137**	**.0195**	**13.50**	**.7677**	**.0092**	**1.342**	**.1319**	**.0008**
Stddev	.0005	.0011	.0021	.03	.0387	.0006	.006	.0005	.0002
%RSD	9.699	7.968	10.67	.2452	5.045	7.068	.4595	.4022	19.99
#1	.0061	.0134	.0172	13.48	.7237	.0085	1.348	.1325	.0010
#2	.0051	.0127	.0211	13.48	.7827	.0093	1.336	.1319	.0007
#3	.0054	.0149	.0202	13.54	.7966	.0097	1.341	.1314	.0008
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.553**	**.0128**	**.2854**	**.0296**	**12.34**	**<.0000**	**.0015**	**.4699**	**.0025**
Stddev	.007	.0001	.0063	.0013	.25	.0040	.0026	.0109	.0016
%RSD	.2800	.6033	2.203	4.324	2.063	223.4	171.4	2.317	65.17
#1	2.561	.0127	.2796	.0281	12.10	.0017	.0044	.4592	.0010
#2	2.552	.0128	.2844	.0303	12.31	-.0009	.0003	.4810	.0023
#3	2.547	.0127	.2921	.0304	12.61	-.0061	-.0003	.4695	.0043
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9053-B-8-E Acquired: 11/13/2014 21:47:40 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=5

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0143	.0042	.0926	.0004	.1173	.0154	.2787
Stddev	.0001	.0046	.0002	.0011	.0781	.0015	.0062
%RSD	1.029	108.7	.2336	250.7	66.58	9.585	2.221
#1	.0144	.0089	.0927	.0015	.0395	.0153	.2728
#2	.0142	.0040	.0926	.0003	.1956	.0170	.2781
#3	.0142	-.0003	.0923	-.0006	.1167	.0140	.2852
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3491.9
Stddev	52.4
%RSD	1.4999
#1	3542.1
#2	3496.0
#3	3437.6

Sample Name: 160-9053-B-9-F Acquired: 11/13/2014 21:51:31 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	7.112	.0056	.0029	.0247	.0004	<.0000	1.161	.0001
Stddev	.0001	.021	.0009	.0024	.0003	.0000	.0027	.020	.0001
%RSD	40.19	.2926	15.67	80.91	1.396	11.08	389.5	1.756	198.5
#1	.0002	7.132	.0066	.0046	.0250	.0003	-.0035	1.140	.0002
#2	.0001	7.114	.0050	.0002	.0247	.0004	.0019	1.165	.0000
#3	.0003	7.090	.0051	.0040	.0243	.0004	-.0005	1.180	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0050	.0139	.0187	11.79	.7530	.0090	1.275	.1073	.0008
Stddev	.0005	.0008	.0011	.03	.0406	.0019	.008	.0006	.0002
%RSD	9.473	5.599	5.986	.2325	5.394	21.24	.6104	.5481	28.08
#1	.0056	.0138	.0198	11.77	.7998	.0100	1.279	.1066	.0006
#2	.0049	.0148	.0175	11.77	.7328	.0101	1.266	.1078	.0011
#3	.0047	.0133	.0187	11.82	.7265	.0068	1.279	.1074	.0008
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.414	.0115	.2629	.0252	10.06	<.0000	<.0000	.3892	.0049
Stddev	.001	.0003	.0039	.0016	.16	.0025	.0032	.0013	.0001
%RSD	.0489	2.242	1.499	6.282	1.615	377.0	394.8	.3256	1.379
#1	2.414	.0118	.2591	.0241	9.900	.0010	.0002	.3878	.0049
#2	2.414	.0113	.2626	.0270	10.06	-.0035	.0018	.3901	.0048
#3	2.412	.0113	.2670	.0245	10.22	.0005	-.0045	.3897	.0049
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9053-B-9-F Acquired: 11/13/2014 21:51:31 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0130	<.0000	.0924	<.0000	.2320	.0190	.2128
Stddev	.0001	.0028	.0007	.0032	.0524	.0046	.0039
%RSD	.5973	1890.	.7441	273.4	22.60	24.45	1.822
#1	.0129	-.0032	.0921	.0020	.2034	.0232	.2088
#2	.0130	.0022	.0932	-.0012	.2925	.0140	.2131
#3	.0129	.0005	.0919	-.0044	.2001	.0196	.2166
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3523.5
Stddev	17.8
%RSD	.50631
#1	3543.5
#2	3509.2
#3	3517.9

Sample Name: 160-9053-A-11-C Acquired: 11/13/2014 21:55:22 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	11.37	.0082	.0032	.0392	.0006	.0038	1.035	<.0000
Stddev	.0005	.03	.0013	.0002	.0002	.0000	.0034	.018	.0002
%RSD	386.1	.2966	15.85	6.661	.3909	2.856	88.57	1.703	291.1
#1	.0003	11.34	.0095	.0032	.0390	.0006	.0073	1.055	-.0001
#2	.0001	11.40	.0080	.0033	.0392	.0006	.0035	1.023	.0001
#3	-.0007	11.37	.0070	.0029	.0393	.0006	.0006	1.027	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0092	.0230	.0130	16.95	1.159	.0159	1.884	.0848	.0012
Stddev	.0004	.0008	.0010	.04	.017	.0019	.026	.0004	.0001
%RSD	4.905	3.454	7.665	.2442	1.483	11.65	1.406	.5022	10.86
#1	.0092	.0239	.0128	16.91	1.161	.0174	1.908	.0844	.0012
#2	.0087	.0226	.0141	16.95	1.175	.0138	1.889	.0847	.0011
#3	.0096	.0225	.0122	16.99	1.141	.0164	1.855	.0852	.0014
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.042	.0126	.4097	.0258	8.315	.0022	.0028	.6709	.0006
Stddev	.013	.0005	.0082	.0026	.130	.0038	.0025	.0080	.0006
%RSD	.4413	3.615	1.997	9.921	1.567	170.1	88.92	1.188	109.8
#1	3.028	.0127	.4191	.0287	8.465	.0066	.0056	.6801	.0003
#2	3.055	.0122	.4044	.0239	8.231	.0005	.0018	.6656	.0001
#3	3.043	.0131	.4055	.0247	8.249	-.0004	.0009	.6671	.0013
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9053-A-11-C Acquired: 11/13/2014 21:55:22 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0150	.0088	.1577	<.0000	.2376	.0269	.1805
Stddev	.0001	.0024	.0002	.0006	.0843	.0026	.0037
%RSD	.5743	26.91	.1212	67.92	35.47	9.805	2.048
#1	.0149	.0115	.1576	-.0009	.3290	.0296	.1848
#2	.0150	.0069	.1579	-.0003	.2206	.0268	.1784
#3	.0151	.0080	.1575	-.0015	.1631	.0243	.1783
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3607.9
Stddev	67.2
%RSD	1.8618
#1	3530.6
#2	3640.8
#3	3652.3

Sample Name: 160-9053-B-13-P Acquired: 11/13/2014 21:59:13 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	11.00	.0043	.0014	.0455	.0005	.0014	.7620	<.0000
Stddev	.0007	.05	.0007	.0044	.0001	.0000	.0038	.0016	.0002
%RSD	160.9	.4497	16.49	313.9	.1408	9.549	273.9	.2116	1017.
#1	.0012	10.95	.0041	.0059	.0455	.0005	-.0025	.7606	.0001
#2	-.0001	11.02	.0038	-.0029	.0456	.0004	.0050	.7617	.0001
#3	.0002	11.04	.0051	.0012	.0454	.0004	.0016	.7638	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0058	.0215	.0077	15.53	.7785	.0096	1.173	.0691	.0001
Stddev	.0002	.0006	.0013	.08	.0174	.0021	.022	.0006	.0003
%RSD	3.462	2.648	17.39	.5313	2.241	22.05	1.869	.8659	286.9
#1	.0059	.0221	.0069	15.45	.7639	.0109	1.148	.0686	.0003
#2	.0058	.0214	.0092	15.61	.7736	.0106	1.185	.0691	.0002
#3	.0055	.0210	.0069	15.54	.7978	.0071	1.188	.0697	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.613	.0163	.4494	.0221	4.844	.0002	.0009	.4049	.0007
Stddev	.011	.0005	.0013	.0003	.005	.0010	.0020	.0046	.0004
%RSD	.7004	2.998	.2935	1.473	.0994	480.4	231.0	1.132	59.75
#1	1.612	.0162	.4509	.0220	4.848	-.0008	-.0008	.3997	.0006
#2	1.603	.0159	.4484	.0219	4.846	.0003	.0031	.4066	.0003
#3	1.625	.0169	.4489	.0225	4.838	.0011	.0003	.4084	.0012
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9053-B-13-P Acquired: 11/13/2014 21:59:13 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0100	.0059	.1318	.0012	.1086	.0286	.0441
Stddev	.0000	.0015	.0018	.0008	.0586	.0039	.0003
%RSD	.3884	24.83	1.391	69.40	53.94	13.56	.7875
#1	.0100	.0065	.1297	.0010	.1117	.0266	.0439
#2	.0100	.0043	.1327	.0021	.1655	.0331	.0445
#3	.0099	.0070	.1330	.0005	.0485	.0261	.0440
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3685.2
Stddev	20.8
%RSD	.56496
#1	3703.7
#2	3662.7
#3	3689.4

Sample Name: 160-9053-B-13-P SD Acquired: 11/13/2014 22:03:06 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=25

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	2.135	.0027	<.0000	.0087	.0001	.0044	.1578	<.0000
Stddev	.0004	.007	.0029	.0044	.0003	.0001	.0005	.0028	.0001
%RSD	39.73	.3136	110.6	2292.	2.881	51.28	10.87	1.803	52.80
#1	-.0014	2.136	.0055	-.0003	.0089	.0000	.0049	.1611	-.0002
#2	-.0008	2.127	-.0004	.0043	.0085	.0001	.0042	.1559	-.0002
#3	-.0007	2.140	.0029	-.0045	.0089	.0002	.0040	.1564	-.0005
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0012	.0028	<.0000	3.071	.1665	.0004	.2219	.0135	.0002
Stddev	.0004	.0012	.0015	.014	.0287	.0004	.0135	.0002	.0006
%RSD	33.59	41.32	5048.	.4447	17.23	117.0	6.080	1.538	361.4
#1	.0013	.0039	-.0017	3.085	.1974	-.0001	.2305	.0137	.0007
#2	.0008	.0016	.0009	3.070	.1614	.0005	.2289	.0134	-.0004
#3	.0017	.0031	.0007	3.058	.1408	.0007	.2063	.0133	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3332	.0033	.0874	.0032	.9576	.0005	.0015	.0730	.0006
Stddev	.0088	.0005	.0032	.0020	.0163	.0020	.0006	.0011	.0008
%RSD	2.628	14.79	3.618	62.04	1.703	412.4	37.05	1.500	134.8
#1	.3365	.0032	.0891	.0028	.9756	-.0013	.0020	.0742	-.0003
#2	.3233	.0029	.0893	.0054	.9438	.0026	.0009	.0725	.0007
#3	.3399	.0038	.0837	.0014	.9534	.0002	.0017	.0722	.0013
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9053-B-13-P SD Acquired: 11/13/2014 22:03:06 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=25

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0019**	**<.0000**	**.0257**	**.0032**	**.2127**	**.0084**	**.0148**
Stddev	.0001	.0040	.0006	.0021	.0121	.0031	.0001
%RSD	3.538	111.5	2.192	66.39	5.673	36.99	.6427
#1	.0019	-.0082	.0255	.0020	.1990	.0116	.0147
#2	.0020	-.0010	.0263	.0056	.2216	.0082	.0149
#3	.0019	-.0016	.0253	.0019	.2176	.0054	.0147
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**3414.7**
Stddev	23.7
%RSD	.69425
#1	3391.1
#2	3438.5
#3	3414.6

Sample Name: 160-9053-B-13-Q MS Acquired: 11/13/2014 22:07:02 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0414**	**26.03**	**.1922**	**.3228**	**.2594**	**.1875**	**.2178**	**2.924**	**.2047**
Stddev	.0007	.05	.0012	.0010	.0006	.0006	.0022	.017	.0005
%RSD	1.584	.1940	.5985	.3230	.2339	.3316	1.006	.5867	.2339
#1	.0419	26.05	.1918	.3228	.2591	.1875	.2203	2.928	.2052
#2	.0406	25.97	.1913	.3218	.2590	.1869	.2160	2.905	.2042
#3	.0416	26.07	.1935	.3239	.2601	.1881	.2173	2.938	.2048
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2207**	**.2413**	**.2199**	**18.11**	**3.165**	**.2043**	**3.335**	**.2404**	**.0993**
Stddev	.0011	.0026	.0026	.05	.028	.0013	.015	.0009	.0004
%RSD	.4833	1.065	1.165	.2590	.8700	.6326	.4386	.3600	.3956
#1	.2201	.2437	.2228	18.06	3.133	.2028	3.343	.2414	.0996
#2	.2200	.2386	.2182	18.10	3.182	.2052	3.318	.2399	.0989
#3	.2219	.2416	.2186	18.15	3.179	.2048	3.343	.2400	.0993
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.213**	**.2271**	**.6168**	**.2418**	**3.572**	**.0639**	**.1029**	**.8521**	**.2018**
Stddev	.003	.0006	.0056	.0018	.025	.0024	.0038	.0044	.0006
%RSD	.1056	.2826	.9045	.7457	.7019	3.798	3.669	.5212	.3197
#1	3.216	.2277	.6163	.2401	3.565	.0657	.1052	.8472	.2017
#2	3.210	.2264	.6115	.2416	3.551	.0650	.0985	.8532	.2013
#3	3.212	.2272	.6226	.2437	3.600	.0612	.1050	.8559	.2025
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9053-B-13-Q MS Acquired: 11/13/2014 22:07:02 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2033	.1967	.3626	.0470	.4476	.2134	.2533
Stddev	.0005	.0075	.0019	.0005	.0111	.0027	.0008
%RSD	.2385	3.794	.5226	1.139	2.481	1.268	.3278
#1	.2029	.2032	.3609	.0477	.4586	.2140	.2536
#2	.2032	.1886	.3621	.0468	.4478	.2105	.2524
#3	.2039	.1983	.3646	.0467	.4364	.2158	.2540
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3472.3
Stddev	27.0
%RSD	.77793
#1	3441.3
#2	3490.9
#3	3484.7

Sample Name: 160-9053-B-13-R MSD Acquired: 11/13/2014 22:10:46 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0394**	**24.05**	**.1883**	**.3326**	**.2530**	**.1919**	**.2069**	**2.813**	**.1980**
Stddev	.0008	.15	.0039	.0055	.0013	.0009	.0068	.049	.0038
%RSD	1.977	.6325	2.056	1.656	.5322	.4822	3.285	1.730	1.938
#1	.0385	24.06	.1925	.3362	.2534	.1918	.2147	2.862	.2019
#2	.0400	23.89	.1877	.3353	.2516	.1910	.2036	2.764	.1942
#3	.0397	24.19	.1848	.3262	.2542	.1929	.2024	2.812	.1979
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2141**	**.2390**	**.2075**	**16.64**	**3.198**	**.2062**	**3.287**	**.2424**	**.0948**
Stddev	.0040	.0033	.0042	.11	.041	.0013	.025	.0015	.0011
%RSD	1.874	1.366	2.001	.6319	1.272	.6493	.7732	.6175	1.119
#1	.2184	.2411	.2114	16.69	3.197	.2076	3.280	.2419	.0960
#2	.2104	.2352	.2031	16.52	3.157	.2050	3.266	.2413	.0940
#3	.2135	.2406	.2080	16.71	3.238	.2060	3.315	.2441	.0944
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.448**	**.2195**	**.5931**	**.2284**	**4.009**	**.0643**	**.0944**	**.9558**	**.1957**
Stddev	.002	.0036	.0117	.0072	.095	.0032	.0055	.0074	.0036
%RSD	.0527	1.637	1.980	3.146	2.381	4.957	5.821	.7759	1.822
#1	3.449	.2234	.6066	.2366	4.116	.0637	.1007	.9620	.1997
#2	3.446	.2164	.5860	.2230	3.932	.0614	.0916	.9476	.1927
#3	3.448	.2186	.5866	.2256	3.979	.0677	.0908	.9577	.1947
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9053-B-13-R MSD Acquired: 11/13/2014 22:10:46 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2065	.1983	.3750	.0460	.3078	.2138	.2440
Stddev	.0009	.0046	.0012	.0015	.0666	.0031	.0048
%RSD	.4275	2.343	.3202	3.298	21.64	1.456	1.957
#1	.2066	.2013	.3763	.0473	.3044	.2168	.2491
#2	.2056	.1930	.3739	.0443	.2430	.2106	.2396
#3	.2074	.2006	.3747	.0464	.3761	.2141	.2434
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3678.6
Stddev	45.0
%RSD	1.2229
#1	3649.2
#2	3730.4
#3	3656.1

Sample Name: 160-9053-B-13-P PDS Acquired: 11/13/2014 22:14:30 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0965	12.55	.1053	.4617	.5599	.0523	1.856	11.74	.0531
Stddev	.0013	.06	.0020	.0048	.0026	.0004	.011	.03	.0002
%RSD	1.376	.5086	1.925	1.046	.4616	.7037	.5996	.2898	.3972
#1	.0970	12.56	.1047	.4589	.5609	.0523	1.847	11.73	.0529
#2	.0950	12.61	.1076	.4673	.5618	.0526	1.852	11.71	.0531
#3	.0975	12.48	.1037	.4589	.5569	.0519	1.868	11.78	.0533
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5534	.1067	.2788	16.02	52.28	.5142	10.71	.2099	.4172
Stddev	.0025	.0007	.0010	.06	.20	.0020	.09	.0016	.0010
%RSD	.4453	.6438	.3549	.3655	.3757	.3877	.8104	.7424	.2370
#1	.5523	.1075	.2788	16.05	52.36	.5137	10.74	.2103	.4171
#2	.5517	.1062	.2778	16.06	52.42	.5164	10.77	.2112	.4162
#3	.5562	.1065	.2798	15.95	52.05	.5125	10.61	.2082	.4182
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.44	.4589	2.860	.1313	55.10	.1023	.1542	4.012	1.081
Stddev	.05	.0012	.008	.0023	.14	.0024	.0033	.018	.002
%RSD	.4322	.2621	.2739	1.743	.2583	2.314	2.143	.4549	.1530
#1	11.45	.4593	2.852	.1317	55.00	.1045	.1513	4.002	1.081
#2	11.49	.4576	2.861	.1334	55.04	.1028	.1578	4.033	1.080
#3	11.39	.4598	2.868	.1289	55.27	.0998	.1534	4.001	1.083
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9053-B-13-P PDS Acquired: 11/13/2014 22:14:30 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0604	1.306	.3303	.2212	5.349	.4944	.2599
Stddev	.0003	.026	.0016	.0029	.195	.0025	.0008
%RSD	.4978	2.007	.4914	1.292	3.647	.5042	.3111
#1	.0605	1.336	.3308	.2192	5.574	.4965	.2594
#2	.0607	1.296	.3316	.2244	5.241	.4951	.2595
#3	.0601	1.287	.3285	.2199	5.232	.4916	.2609
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3575.7
Stddev	10.4
%RSD	.29170
#1	3564.6
#2	3585.3
#3	3577.3

Sample Name: MB 160-154334/1-A Acquired: 11/13/2014 22:18:07 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	.0005	.0056	.0000	<.0000	<.0000	.0874	.0002
Stddev	.0018	.0070	.0015	.0032	.0001	.0000	.0065	.0017	.0002
%RSD	199.1	46.48	331.7	58.08	691.0	219.2	139.5	1.986	84.16
#1	-.0003	-.0123	.0021	.0077	.0001	.0000	.0014	.0879	.0000
#2	-.0030	-.0097	-.0009	.0018	-.0001	.0000	-.0114	.0889	.0002
#3	.0005	-.0228	.0002	.0072	.0000	.0000	-.0039	.0855	.0004
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0007	<.0000	.0044	<.0000	.0017	<.0000	<.0000	.0000
Stddev	.0002	.0006	.0007	.0020	.0433	.0005	.0103	.0004	.0002
%RSD	65990.	80.44	40.42	45.33	157.5	30.24	548.5	225.5	479.8
#1	-.0002	.0012	-.0027	.0066	-.0595	.0015	.0063	-.0001	.0003
#2	.0000	.0010	-.0014	.0041	.0218	.0014	.0015	.0002	.0000
#3	.0002	.0001	-.0014	.0026	-.0447	.0023	-.0135	-.0007	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0383	.0005	<.0000	.0017	.0115	.0034	.0009	<.0000	.0004
Stddev	.0132	.0003	.0019	.0009	.0017	.0011	.0003	.0043	.0007
%RSD	34.41	58.29	438.2	53.98	15.19	31.75	36.55	50.20	153.0
#1	.0253	.0008	.0006	.0022	.0134	.0039	.0010	-.0111	-.0002
#2	.0517	.0004	-.0027	.0006	.0111	.0042	.0005	-.0112	.0003
#3	.0381	.0003	.0007	.0022	.0100	.0022	.0011	-.0036	.0011
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: MB 160-154334/1-A Acquired: 11/13/2014 22:18:07 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	.0004	<.0000	<.0000	.2559	<.0000	.0158
Stddev	.0000	.0024	.0007	.0012	.0329	.0032	.0002
%RSD	16.57	638.8	173.1	394.0	12.84	167.0	1.331
#1	.0001	.0030	.0003	.0009	.2594	-.0048	.0158
#2	.0002	-.0016	-.0011	-.0015	.2869	.0015	.0160
#3	.0002	-.0002	-.0005	-.0003	.2215	-.0024	.0156
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3520.5
Stddev	5.3
%RSD	.15034
#1	3516.9
#2	3518.1
#3	3526.6

Sample Name: LCS 160-154334/2-A Acquired: 11/13/2014 22:22:03 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2018	9.955	1.026	1.838	1.056	1.011	1.037	10.68	1.034
Stddev	.0030	.033	.005	.004	.003	.002	.004	.04	.002
%RSD	1.480	.3356	.5337	.2161	.2851	.2198	.4000	.4209	.2317
#1	.1984	9.979	1.023	1.842	1.059	1.013	1.037	10.65	1.032
#2	.2041	9.968	1.022	1.834	1.057	1.011	1.033	10.66	1.033
#3	.2027	9.917	1.032	1.837	1.053	1.009	1.041	10.73	1.037
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.098	1.093	1.069	9.777	10.23	1.055	9.450	.9526	.5130
Stddev	.005	.003	.003	.009	.01	.002	.033	.0013	.0012
%RSD	.4551	.2475	.2523	.0922	.1148	.1534	.3486	.1411	.2344
#1	1.094	1.092	1.066	9.786	10.22	1.055	9.449	.9541	.5121
#2	1.096	1.096	1.069	9.778	10.23	1.056	9.484	.9524	.5124
#3	1.104	1.090	1.071	9.768	10.24	1.053	9.418	.9514	.5143
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.14	1.096	1.058	1.090	9.582	.5047	.5220	4.583	1.048
Stddev	.01	.005	.002	.005	.037	.0016	.0019	.007	.005
%RSD	.1312	.4669	.2107	.4376	.3844	.3200	.3551	.1642	.5242
#1	10.16	1.093	1.056	1.087	9.583	.5035	.5234	4.587	1.044
#2	10.15	1.093	1.058	1.088	9.545	.5040	.5199	4.588	1.045
#3	10.13	1.102	1.061	1.096	9.618	.5065	.5227	4.575	1.054
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LCS 160-154334/2-A Acquired: 11/13/2014 22:22:03 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.047	1.046	.9960	.2224	1.159	.9666	1.105
Stddev	.003	.009	.0025	.0030	.034	.0017	.004
%RSD	.3073	.8293	.2519	1.330	2.912	.1802	.3372
#1	1.051	1.036	.9988	.2210	1.198	.9675	1.102
#2	1.047	1.053	.9941	.2203	1.139	.9678	1.104
#3	1.045	1.048	.9950	.2257	1.141	.9646	1.109
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3662.9
Stddev	2.7
%RSD	.07375
#1	3664.3
#2	3664.6
#3	3659.7

Sample Name: CCV Acquired: 11/13/2014 22:25:38 Type: QC
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.077**	**51.76**	**5.401**	**4.772**	**5.401**	**5.160**	**5.423**	**53.03**	**5.419**
Stddev	.011	.24	.055	.031	.023	.052	.069	.65	.059
%RSD	1.016	.4700	1.022	.6479	.4321	1.001	1.270	1.234	1.093
#1	1.089	51.50	5.462	4.741	5.374	5.219	5.496	53.74	5.480
#2	1.076	51.98	5.355	4.774	5.411	5.126	5.359	52.45	5.362
#3	1.067	51.81	5.386	4.802	5.417	5.133	5.413	52.92	5.415
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.394**	F **5.621**	**5.447**	**50.48**	**54.01**	**5.279**	**50.21**	**4.932**	**1.053**
Stddev	.064	.061	.052	.20	.15	.021	.09	.028	.013
%RSD	1.180	1.086	.9614	.3980	.2782	.4081	.1856	.5618	1.269
#1	5.459	5.690	5.497	50.30	53.92	5.262	50.10	4.904	1.068
#2	5.331	5.599	5.393	50.45	53.93	5.270	50.28	4.959	1.042
#3	5.392	5.574	5.450	50.70	54.19	5.303	50.24	4.932	1.050
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value		5.000							
Range		10.00%							

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**52.29**	**5.451**	**54.34**	F **5.503**	**51.10**	**1.076**	**1.080**	**4.844**	**5.479**
Stddev	.17	.061	.63	.067	.58	.010	.001	.018	.068
%RSD	.3224	1.122	1.150	1.219	1.135	.9132	.0727	.3670	1.232
#1	52.10	5.517	55.00	5.578	51.65	1.081	1.079	4.837	5.551
#2	52.40	5.395	53.76	5.448	50.50	1.065	1.081	4.831	5.417
#3	52.38	5.443	54.27	5.482	51.16	1.082	1.081	4.864	5.468
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value				5.000					
Range				10.00%					

Sample Name: CCV Acquired: 11/13/2014 22:25:38 Type: QC
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.278	5.353	5.223	1.092	F 5.672	5.036	5.417
Stddev	.061	.060	.020	.016	.131	.027	.060
%RSD	1.164	1.116	.3766	1.492	2.315	.5400	1.107
#1	5.294	5.421	5.210	1.111	5.804	5.008	5.475
#2	5.329	5.325	5.213	1.079	5.671	5.062	5.355
#3	5.210	5.312	5.246	1.088	5.541	5.037	5.420
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
Value					5.000		
Range					10.00%		

Int. Std.	Y_3710
Units	Cts/S
Avg	3392.0
Stddev	30.3
%RSD	.89326
#1	3360.7
#2	3421.2
#3	3393.9

Sample Name: CCB Acquired: 11/13/2014 22:29:21 Type: QC
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	.0033	.0124	.0004	.0005	<.0000	.0021
Stddev	.0006	.0111	.0011	.0055	.0001	.0001	.0043	.0007
%RSD	48.70	81.66	32.50	44.24	32.78	16.73	390.0	33.96
#1	-.0012	-.0008	.0023	.0116	.0005	.0006	-.0050	.0017
#2	-.0005	-.0195	.0031	.0182	.0003	.0006	-.0019	.0017
#3	-.0016	-.0203	.0044	.0074	.0005	.0004	.0036	.0030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Cd2288	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0003	.0016	<.0000	.0043	<.0000	.0022	<.0000
Stddev	.0000	.0002	.0015	.0013	.0005	.0321	.0008	.0077
%RSD	38.32	73.83	90.52	126.6	11.00	98.22	35.44	342.9
#1	.0001	.0002	.0009	.0001	.0048	-.0600	.0031	.0024
#2	.0001	.0006	.0007	-.0024	.0041	.0026	.0020	.0020
#3	.0001	.0001	.0033	-.0007	.0039	-.0406	.0016	-.0111
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mn2576	Mo2020	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	<.0000	.0158	.0003	.0004	.0010	.0047	.0010
Stddev	.0002	.0003	.0082	.0006	.0042	.0013	.0044	.0009
%RSD	113.2	115.3	52.14	225.7	1185.	126.4	93.22	93.39
#1	.0000	-.0006	.0175	.0005	.0002	.0023	.0091	.0004
#2	.0004	-.0002	.0230	.0007	.0047	-.0001	.0045	.0021
#3	.0002	.0000	.0068	-.0004	-.0038	.0008	.0004	.0005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB Acquired: 11/13/2014 22:29:21 Type: QC
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2516	Sn1899	Sr4077	Th2832	Ti3349	Tl1908	U_3670
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0018	<.0000	.0003	.0006	<.0000	.0009	.0025	W .2242
Stddev	.0017	.0024	.0008	.0001	.0013	.0004	.0015	.0503
%RSD	94.78	12.78	255.0	18.68	127.2	43.66	60.48	22.42
#1	.0002	-.0162	.0010	.0007	.0005	.0005	.0024	.1825
#2	.0017	-.0199	-.0005	.0005	-.0021	.0008	.0041	.2800
#3	.0036	-.0207	.0004	.0005	-.0015	.0013	.0011	.2100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn
High Limit								.0480
Low Limit								-.0470

Elem	V_2908	Zn2138
Units	ppm	ppm
Avg	.0011	<.0000
Stddev	.0018	.0002
%RSD	162.5	2049.
#1	.0023	-.0001
#2	.0019	-.0002
#3	-.0010	.0002
Check ?	Chk Pass	Chk Pass
High Limit		
Low Limit		

Int. Std.	Y_3710
Units	Cts/S
Avg	3530.5
Stddev	12.3
%RSD	.34788
#1	3517.6
#2	3531.7
#3	3542.1

Sample Name: 160-9071-B-1-A Acquired: 11/13/2014 22:33:17 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0005**	**.0181**	**.0015**	**.0308**	**.0075**	**.0001**	**<.0000**	**6.873**	**.0002**
Stddev	.0003	.0042	.0004	.0039	.0002	.0000	.0012	.046	.0002
%RSD	74.70	23.34	24.03	12.73	3.047	33.62	50.36	.6729	78.10
#1	.0007	.0142	.0019	.0288	.0077	.0001	-.0036	6.855	.0002
#2	.0001	.0226	.0014	.0283	.0077	.0001	-.0023	6.838	.0004
#3	.0006	.0174	.0012	.0354	.0073	.0000	-.0012	6.926	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**.0006**	**<.0000**	**.0240**	**.1687**	**.0053**	**.9056**	**.0004**	**.0002**
Stddev	.0001	.0014	.0023	.0006	.0257	.0006	.0025	.0001	.0004
%RSD	82.44	236.6	493700.	2.437	15.25	10.64	.2747	36.07	192.4
#1	.0002	.0006	-.0006	.0244	.1486	.0057	.9043	.0004	.0002
#2	.0000	-.0008	-.0019	.0242	.1977	.0054	.9085	.0002	.0007
#3	.0001	.0020	.0025	.0233	.1598	.0046	.9040	.0005	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.29**	**.0000**	**.0010**	**.0035**	**4.961**	**.0019**	**<.0000**	**.9384**	**<.0000**
Stddev	.05	.0002	.0007	.0024	.021	.0037	.0014	.0129	.0009
%RSD	.5080	450.8	71.61	69.04	.4305	193.6	254.6	1.371	5086.
#1	10.30	-.0002	.0014	.0044	4.964	-.0023	-.0017	.9430	.0010
#2	10.24	.0002	.0014	.0054	4.938	.0035	-.0010	.9239	-.0004
#3	10.34	.0001	.0002	.0008	4.981	.0046	.0010	.9483	-.0006
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9071-B-1-A Acquired: 11/13/2014 22:33:17 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1493	<.0000	.0001	.0006	.1013	.0024	.0096
Stddev	.0006	.0052	.0002	.0010	.0260	.0015	.0004
%RSD	.4166	62.34	266.5	172.6	25.68	60.88	4.011
#1	.1497	-.0112	-.0001	.0017	.1077	.0025	.0100
#2	.1486	-.0115	.0003	.0002	.0726	.0039	.0097
#3	.1496	-.0023	.0001	-.0002	.1234	.0009	.0093
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3551.1
Stddev	29.5
%RSD	.83117
#1	3568.7
#2	3567.5
#3	3517.0

Sample Name: 160-9071-B-1-A SD Acquired: 11/13/2014 22:37:10 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=50

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	<.0000	.0089	.0013	.0000	.0004	1.294	.0001
Stddev	.0007	.0030	.0021	.0025	.0001	.0000	.0029	.011	.0001
%RSD	189.6	70.57	180.1	27.77	5.654	7.514	742.0	.8232	42.64
#1	-.0007	-.0039	.0013	.0077	.0013	.0000	.0002	1.291	.0002
#2	.0004	-.0075	-.0025	.0117	.0014	.0000	-.0025	1.285	.0001
#3	-.0009	-.0015	-.0023	.0072	.0013	.0000	.0034	1.306	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0008	<.0000	.0034	.0471	<.0000	.1664	.0001	<.0000
Stddev	.0006	.0017	.0010	.0004	.0380	.0013	.0086	.0003	.0003
%RSD	865.0	206.9	50.96	12.60	80.54	36.62	5.146	190.3	170.4
#1	-.0008	-.0010	-.0014	.0038	.0490	-.0022	.1697	.0003	-.0003
#2	.0004	.0010	-.0030	.0029	.0083	-.0036	.1567	-.0002	-.0004
#3	.0001	.0025	-.0013	.0035	.0841	-.0049	.1728	.0003	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.933	.0001	<.0000	.0003	.9152	.0017	.0027	.1610	<.0000
Stddev	.016	.0002	.0016	.0009	.0098	.0027	.0015	.0037	.0006
%RSD	.8440	174.0	224.1	271.4	1.073	159.8	56.36	2.291	140.3
#1	1.914	-.0001	-.0023	.0005	.9143	.0048	.0029	.1625	-.0011
#2	1.943	.0001	-.0005	-.0007	.9058	.0008	.0010	.1636	.0000
#3	1.941	.0002	.0008	.0011	.9254	-.0005	.0040	.1568	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9071-B-1-A SD Acquired: 11/13/2014 22:37:10 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=50

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0281	<.0000	.0007	.0008	.0966	.0021	.0074
Stddev	.0001	.0042	.0004	.0025	.1081	.0010	.0003
%RSD	.2434	51.77	63.93	309.1	111.9	46.79	3.455
#1	.0281	-.0114	.0004	.0009	.0362	.0031	.0077
#2	.0282	-.0034	.0012	-.0017	.0322	.0012	.0072
#3	.0282	-.0093	.0004	.0032	.2213	.0019	.0073
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3481.3
Stddev	39.3
%RSD	1.1283
#1	3486.2
#2	3518.0
#3	3439.9

Sample Name: 160-9071-B-1-B MS Acquired: 11/13/2014 22:41:04 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0192**	**1.039**	**.1127**	**.2178**	**.1155**	**.1048**	**.1120**	**8.285**	**.1116**
Stddev	.0009	.008	.0015	.0022	.0005	.0006	.0065	.189	.0024
%RSD	4.583	.7445	1.351	1.003	.4530	.5917	5.824	2.283	2.176
#1	.0199	1.030	.1110	.2153	.1149	.1043	.1053	8.121	.1097
#2	.0182	1.045	.1140	.2195	.1159	.1055	.1125	8.243	.1109
#3	.0195	1.041	.1130	.2185	.1157	.1046	.1183	8.492	.1144
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1181**	**.1157**	**.1147**	**1.053**	**1.168**	**.1122**	**1.888**	**.0991**	**.0539**
Stddev	.0034	.0006	.0029	.004	.049	.0007	.022	.0008	.0020
%RSD	2.905	.4955	2.546	.3720	4.224	.6666	1.171	.7866	3.632
#1	.1152	.1151	.1123	1.051	1.188	.1117	1.877	.0988	.0517
#2	.1172	.1161	.1138	1.057	1.204	.1131	1.873	.0999	.0548
#3	.1219	.1160	.1180	1.051	1.112	.1120	1.913	.0985	.0553
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**11.37**	**.1188**	**.1147**	**.1204**	**6.194**	**.0535**	**.0581**	**1.463**	**.1138**
Stddev	.06	.0023	.0033	.0023	.165	.0035	.0020	.008	.0030
%RSD	.5119	1.928	2.900	1.869	2.671	6.590	3.374	.5772	2.673
#1	11.33	.1169	.1108	.1198	6.065	.0525	.0561	1.463	.1115
#2	11.44	.1183	.1164	.1186	6.137	.0506	.0600	1.471	.1126
#3	11.34	.1214	.1167	.1229	6.380	.0574	.0581	1.454	.1173
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9071-B-1-B MS Acquired: 11/13/2014 22:41:04 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2570	.1086	.1019	.0227	.4463	.1009	.1272
Stddev	.0010	.0062	.0010	.0004	.1185	.0037	.0023
%RSD	.3854	5.696	.9536	1.722	26.54	3.638	1.843
#1	.2562	.1065	.1017	.0222	.3330	.0995	.1251
#2	.2581	.1155	.1010	.0229	.4367	.1050	.1267
#3	.2567	.1037	.1030	.0229	.5693	.0981	.1297
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3451.4
Stddev	20.8
%RSD	.60274
#1	3474.8
#2	3434.9
#3	3444.6

Sample Name: 160-9071-B-1-C MSD Acquired: 11/13/2014 22:44:53 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0192**	**1.039**	**.1077**	**.2166**	**.1137**	**.1041**	**.1081**	**8.012**	**.1064**
Stddev	.0007	.007	.0029	.0058	.0002	.0005	.0008	.154	.0023
%RSD	3.803	.6703	2.704	2.675	.1769	.4983	.7815	1.920	2.133
#1	.0195	1.033	.1044	.2114	.1138	.1041	.1077	7.837	.1038
#2	.0197	1.047	.1096	.2156	.1138	.1047	.1091	8.070	.1070
#3	.0183	1.038	.1092	.2229	.1134	.1036	.1076	8.128	.1082
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1126**	**.1107**	**.1082**	**1.041**	**1.211**	**.1096**	**1.924**	**.1001**	**.0519**
Stddev	.0025	.0014	.0037	.004	.013	.0026	.014	.0006	.0010
%RSD	2.216	1.249	3.463	.3927	1.072	2.333	.7441	.5682	1.891
#1	.1098	.1094	.1041	1.037	1.207	.1070	1.912	.0995	.0508
#2	.1140	.1107	.1114	1.044	1.225	.1098	1.940	.1007	.0526
#3	.1141	.1122	.1091	1.043	1.200	.1121	1.919	.1002	.0524
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**11.39**	**.1134**	**.1097**	**.1156**	**5.944**	**.0524**	**.0591**	**1.454**	**.1090**
Stddev	.05	.0018	.0034	.0053	.119	.0040	.0044	.004	.0024
%RSD	.3976	1.608	3.059	4.610	1.994	7.548	7.422	.2480	2.213
#1	11.42	.1115	.1059	.1102	5.810	.0480	.0556	1.450	.1067
#2	11.43	.1136	.1122	.1156	5.987	.0555	.0576	1.458	.1088
#3	11.34	.1151	.1110	.1209	6.036	.0539	.0640	1.455	.1115
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9071-B-1-C MSD Acquired: 11/13/2014 22:44:53 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2551	.1003	.1015	.0258	.0878	.0998	.1221
Stddev	.0011	.0059	.0004	.0022	.0412	.0026	.0026
%RSD	.4169	5.851	.4170	8.548	46.95	2.620	2.133
#1	.2554	.0944	.1018	.0264	.0411	.1011	.1191
#2	.2559	.1003	.1017	.0233	.1193	.1016	.1234
#3	.2539	.1061	.1010	.0276	.1030	.0968	.1237
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3583.6
Stddev	53.7
%RSD	1.4996
#1	3644.0
#2	3566.0
#3	3540.9

Sample Name: MB 160-154703/1-A Acquired: 11/13/2014 22:48:42 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	<.0000	.0018	<.0000	.0000	.0036	.0346	.0000
Stddev	.0012	.0008	.0009	.0010	.0001	.0000	.0049	.0007	.0002
%RSD	115.8	4.122	294.8	56.41	86.22	335.6	138.0	1.900	1607.
#1	-.0016	-.0184	.0006	.0018	-.0002	.0000	.0082	.0343	.0000
#2	.0003	-.0194	-.0012	.0027	.0000	.0000	.0041	.0341	.0002
#3	-.0018	-.0199	-.0003	.0007	-.0001	.0000	-.0016	.0353	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	<.0000	.0264	<.0000	<.0000	<.0000	.0001	<.0000
Stddev	.0003	.0005	.0013	.0007	.0139	.0022	.0112	.0002	.0002
%RSD	102.7	51.31	223.0	2.727	74.54	503.6	372.1	184.2	30.56
#1	-.0001	-.0004	.0008	.0258	-.0030	-.0010	-.0029	.0000	-.0006
#2	-.0007	-.0014	-.0019	.0262	-.0236	.0020	-.0143	.0004	-.0004
#3	-.0001	-.0009	-.0007	.0272	-.0294	-.0023	.0081	.0000	-.0008
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0903	<.0000	<.0000	.0005	.0034	.0018	<.0000	<.0000	.0003
Stddev	.0093	.0002	.0008	.0019	.0041	.0012	.0018	.0046	.0004
%RSD	10.30	107.5	76.03	368.5	120.3	66.75	1418.	65.28	129.8
#1	.0995	-.0002	-.0001	-.0015	.0050	.0023	-.0003	-.0040	.0000
#2	.0905	.0000	-.0016	.0008	-.0012	.0005	.0018	-.0049	.0007
#3	.0809	-.0004	-.0013	.0022	.0064	.0028	-.0018	-.0124	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: MB 160-154703/1-A Acquired: 11/13/2014 22:48:42 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	<.0000	.0006	.0019	.1696	.0007	.0073
Stddev	.0000	.0027	.0004	.0021	.0125	.0034	.0002
%RSD	45.48	40.10	71.01	110.5	7.348	505.0	3.386
#1	.0000	-.0094	.0001	.0043	.1567	.0045	.0071
#2	.0000	-.0068	.0009	.0012	.1705	-.0016	.0075
#3	.0001	-.0040	.0007	.0003	.1815	-.0010	.0074
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3446.3
Stddev	29.6
%RSD	.85820
#1	3480.0
#2	3434.5
#3	3424.5

Sample Name: LCS 160-154703/2-A Acquired: 11/13/2014 22:52:38 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1063**	**10.17**	**.0416**	**.9786**	**1.089**	**1.062**	**<.0000**	**11.43**	**.0062**
Stddev	.0015	.03	.0030	.0054	.004	.003	.0040	.16	.0001
%RSD	1.427	.2548	7.320	.5480	.4090	.2785	68.01	1.365	2.022
#1	.1054	10.20	.0381	.9774	1.093	1.065	-.0020	11.27	.0062
#2	.1056	10.16	.0430	.9740	1.084	1.059	-.0100	11.43	.0064
#3	.1081	10.16	.0437	.9845	1.088	1.061	-.0056	11.59	.0061
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.133**	**1.176**	**1.109**	**10.34**	**10.87**	**1.059**	**9.886**	**.9869**	**1.053**
Stddev	.016	.007	.014	.05	.02	.006	.043	.0048	.015
%RSD	1.396	.5667	1.290	.5036	.1448	.6173	.4355	.4815	1.380
#1	1.119	1.172	1.096	10.33	10.87	1.063	9.916	.9923	1.040
#2	1.131	1.172	1.107	10.30	10.85	1.051	9.906	.9849	1.050
#3	1.150	1.183	1.125	10.40	10.89	1.062	9.837	.9834	1.068
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.53**	**1.141**	**<.0000**	**.1204**	**.0650**	**.1076**	**.0122**	**.0074**	**1.082**
Stddev	.04	.014	.0016	.0015	.0046	.0013	.0027	.0039	.015
%RSD	.4022	1.220	98.12	1.217	7.142	1.240	22.32	52.84	1.342
#1	10.58	1.128	.0002	.1188	.0633	.1065	.0148	.0050	1.072
#2	10.50	1.140	-.0027	.1217	.0615	.1090	.0125	.0119	1.076
#3	10.52	1.156	-.0025	.1206	.0702	.1072	.0094	.0053	1.099
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LCS 160-154703/2-A Acquired: 11/13/2014 22:52:38 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.096	1.084	.9989	.0595	1.361	1.009	1.135
Stddev	.004	.005	.0059	.0015	.027	.005	.016
%RSD	.3974	.5021	.5920	2.472	1.959	.4853	1.442
#1	1.101	1.078	.9967	.0609	1.348	1.011	1.119
#2	1.093	1.089	.9944	.0580	1.343	1.012	1.135
#3	1.093	1.085	1.006	.0596	1.392	1.003	1.152
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3462.9
Stddev	30.9
%RSD	.89138
#1	3494.4
#2	3461.7
#3	3432.7

Sample Name: 160-8836-A-1-F Acquired: 11/13/2014 22:56:19 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=50

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0309	16.57	<.0000	.5289	.0760	.0001	<.0000	2.665	<.0000
Stddev	.0015	.06	.0022	.0053	.0005	.0001	.0031	.011	.0002
%RSD	4.963	.3638	2330.	1.005	.6195	43.02	100.6	.3953	83.83
#1	.0307	16.50	.0004	.5228	.0758	.0002	-.0026	2.653	-.0002
#2	.0295	16.58	.0018	.5324	.0756	.0001	-.0063	2.668	-.0003
#3	.0325	16.62	-.0025	.5316	.0765	.0001	-.0002	2.673	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0010	.0078	.0052	1.915	.5639	.0069	.4397	.0325	<.0000
Stddev	.0004	.0014	.0017	.006	.0205	.0011	.0117	.0005	.0002
%RSD	41.27	17.26	32.20	.3322	3.641	16.42	2.669	1.436	53.27
#1	.0005	.0079	.0058	1.908	.5467	.0082	.4419	.0325	-.0004
#2	.0011	.0092	.0064	1.914	.5866	.0063	.4270	.0330	-.0005
#3	.0013	.0065	.0033	1.921	.5583	.0062	.4502	.0321	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.853	.0032	.1802	.0070	5.277	.0006	.0007	.1031	.0045
Stddev	.012	.0004	.0012	.0013	.049	.0021	.0034	.0063	.0010
%RSD	.4159	13.05	.6529	18.65	.9284	352.7	478.7	6.079	21.69
#1	2.849	.0032	.1790	.0071	5.229	.0018	.0046	.1057	.0048
#2	2.844	.0028	.1801	.0057	5.274	.0018	-.0010	.0960	.0034
#3	2.867	.0036	.1814	.0083	5.327	-.0018	-.0015	.1077	.0052
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-8836-A-1-F Acquired: 11/13/2014 22:56:19 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=50

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1928	<.0000	.1156	.0052	.1512	.0038	.0555
Stddev	.0008	.0030	.0005	.0024	.0111	.0010	.0006
%RSD	.4052	54.25	.4687	46.63	7.342	27.92	1.023
#1	.1921	-.0029	.1161	.0051	.1384	.0026	.0549
#2	.1927	-.0088	.1158	.0028	.1573	.0042	.0555
#3	.1936	-.0050	.1150	.0076	.1578	.0045	.0560
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3583.9
Stddev	9.0
%RSD	.25074
#1	3593.7
#2	3576.0
#3	3582.1

Sample Name: 160-8836-A-2-D Acquired: 11/13/2014 23:00:11 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	<.0000	.0046	.0043	<.0000	<.0000	.7533	<.0000
Stddev	.0007	.0025	.0020	.0024	.0004	.0000	.0028	.0159	.0002
%RSD	294.2	34.37	294.7	52.84	10.13	93.81	96.32	2.111	205.8
#1	-.0010	-.0088	-.0030	.0044	.0047	.0000	-.0061	.7625	-.0001
#2	.0004	-.0084	.0007	.0023	.0044	.0000	-.0009	.7624	-.0002
#3	-.0001	-.0043	.0002	.0071	.0038	.0000	-.0017	.7349	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0029	.0000	.0218	.1526	.0004	.3865	.0136	<.0000
Stddev	.0002	.0013	.0014	.0016	.0417	.0022	.0036	.0002	.0001
%RSD	118.1	44.55	13580.	7.540	27.32	569.5	.9378	1.181	30.52
#1	.0000	.0018	.0014	.0229	.1187	-.0018	.3828	.0137	-.0004
#2	-.0002	.0044	-.0015	.0225	.1398	.0025	.3867	.0134	-.0003
#3	-.0002	.0027	.0000	.0199	.1991	.0005	.3901	.0136	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	22.17	.0004	.0284	.0035	.2562	.0027	.0013	.0373	.0013
Stddev	.10	.0003	.0041	.0017	.0035	.0017	.0014	.0030	.0002
%RSD	.4654	63.61	14.59	47.27	1.366	62.07	107.5	8.003	12.26
#1	22.18	.0006	.0312	.0018	.2601	.0039	.0029	.0398	.0015
#2	22.28	.0001	.0237	.0052	.2549	.0033	.0006	.0340	.0014
#3	22.07	.0005	.0305	.0035	.2535	.0008	.0004	.0382	.0012
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-8836-A-2-D Acquired: 11/13/2014 23:00:11 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0094	<.0000	.0003	.0016	.2273	.0033	.0052
Stddev	.0001	.0044	.0007	.0016	.0351	.0047	.0004
%RSD	1.083	134.4	226.2	97.93	15.42	145.0	7.454
#1	.0093	-.0078	.0002	.0034	.2655	.0080	.0054
#2	.0095	.0010	.0011	.0004	.1966	.0033	.0055
#3	.0094	-.0031	-.0004	.0011	.2198	-.0015	.0048
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3371.6
Stddev	42.9
%RSD	1.2718
#1	3355.3
#2	3339.3
#3	3420.3

Sample Name: 160-8836-A-3-D Acquired: 11/13/2014 23:04:07 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0639	<.0000	.0151	.0024	.0008	.0027	.7949	.0007
Stddev	.0012	.0071	.0025	.0034	.0001	.0000	.0029	.0081	.0003
%RSD	104.0	11.17	1707.	22.42	5.944	5.532	106.9	1.013	39.63
#1	-.0010	.0586	.0025	.0167	.0023	.0008	.0059	.7884	.0006
#2	-.0025	.0721	-.0006	.0173	.0026	.0007	.0001	.7923	.0011
#3	-.0001	.0612	-.0024	.0112	.0024	.0008	.0022	.8039	.0006
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0010	.0107	.1064	.1051	2.322	.0023	.2486	1.089	<.0000
Stddev	.0002	.0004	.0025	.0011	.047	.0012	.0136	.005	.0001
%RSD	21.63	3.333	2.380	1.019	2.028	52.10	5.479	.4908	53.24
#1	.0007	.0111	.1074	.1045	2.373	.0010	.2349	1.092	-.0002
#2	.0011	.0104	.1035	.1045	2.281	.0025	.2487	1.092	-.0003
#3	.0010	.0107	.1083	.1064	2.310	.0034	.2622	1.083	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.791	.0076	<.0000	.0033	11.93	.0004	.0006	.0412	.7126
Stddev	.013	.0003	.0020	.0007	.18	.0018	.0021	.0012	.0088
%RSD	.3372	4.509	239.3	20.98	1.548	423.1	364.0	2.845	1.239
#1	3.800	.0076	-.0003	.0025	11.77	.0024	-.0017	.0409	.7042
#2	3.796	.0072	.0008	.0035	11.89	-.0013	.0009	.0426	.7118
#3	3.776	.0079	-.0030	.0038	12.13	.0002	.0024	.0403	.7218
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-8836-A-3-D Acquired: 11/13/2014 23:04:07 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0164	<.0000	.0021	.0011	.1903	.0016	.0342
Stddev	.0001	.0040	.0004	.0029	.0388	.0029	.0003
%RSD	.5788	161.3	21.45	273.8	20.38	178.7	1.019
#1	.0165	.0021	.0018	-.0002	.1457	.0009	.0338
#2	.0164	-.0045	.0026	.0044	.2160	-.0008	.0341
#3	.0163	-.0050	.0018	-.0010	.2093	.0048	.0345
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3452.6
Stddev	13.1
%RSD	.38013
#1	3463.9
#2	3455.7
#3	3438.2

Sample Name: 160-8836-A-4-D Acquired: 11/13/2014 23:08:01 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0359	.0012	.0023	2.036	.0000	<.0000	11.08	.0004
Stddev	.0012	.0052	.0027	.0015	.004	.0000	.0077	.09	.0001
%RSD	110.1	14.44	231.1	63.55	.2067	88.53	273.1	.8388	36.17
#1	-.0023	.0418	-.0020	.0026	2.038	.0000	.0053	11.17	.0005
#2	.0001	.0324	.0031	.0007	2.039	.0000	-.0101	11.08	.0003
#3	-.0011	.0334	.0025	.0037	2.031	.0001	-.0036	10.98	.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0005	.0054	.0798	.4142	.0800	.7491	.0792	<.0000
Stddev	.0003	.0014	.0008	.0018	.0043	.0002	.0079	.0007	.0003
%RSD	54.50	300.0	15.04	2.311	1.041	.2773	1.061	.8541	82.77
#1	-.0007	-.0009	.0061	.0803	.4129	.0800	.7407	.0794	-.0006
#2	-.0002	.0019	.0055	.0813	.4190	.0802	.7500	.0797	-.0004
#3	-.0004	.0004	.0045	.0777	.4107	.0797	.7565	.0784	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	21.03	.0007	.1626	.0025	.6272	.0013	<.0000	.1154	.0538
Stddev	.07	.0002	.0012	.0008	.0093	.0020	.0018	.0012	.0011
%RSD	.3207	24.57	.7643	32.05	1.485	159.9	58.82	1.052	2.102
#1	21.00	.0006	.1636	.0033	.6379	.0008	-.0021	.1141	.0545
#2	21.10	.0006	.1630	.0017	.6230	.0035	-.0020	.1165	.0525
#3	20.97	.0009	.1612	.0026	.6207	-.0005	-.0052	.1156	.0544
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-8836-A-4-D Acquired: 11/13/2014 23:08:01 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.491**	**<.0000**	**.0016**	**.0027**	**.1201**	**.0015**	**.0122**
Stddev	.007	.0007	.0007	.0016	.0173	.0026	.0000
%RSD	.2997	9.380	46.00	59.90	14.43	178.8	.1962
#1	2.492	-.0081	.0024	.0042	.1401	.0044	.0121
#2	2.497	-.0070	.0016	.0010	.1085	.0005	.0121
#3	2.482	-.0069	.0009	.0029	.1119	-.0005	.0122
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**3497.9**
Stddev	14.1
%RSD	.40450
#1	3482.4
#2	3501.1
#3	3510.2

Sample Name: CCV Acquired: 11/13/2014 23:11:56 Type: QC
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.094**	**51.50**	**5.447**	**4.841**	**5.378**	**5.269**	**5.468**	**53.36**	**5.455**
Stddev	.015	.37	.067	.016	.023	.103	.075	.62	.068
%RSD	1.376	.7169	1.235	.3228	.4346	1.956	1.367	1.154	1.240
#1	1.087	51.91	5.518	4.847	5.404	5.294	5.549	54.05	5.527
#2	1.083	51.38	5.441	4.823	5.372	5.358	5.454	53.17	5.444
#3	1.111	51.21	5.383	4.852	5.358	5.156	5.402	52.86	5.393
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.441**	F **5.699**	**5.488**	**50.98**	**53.75**	**5.254**	**50.28**	**4.968**	**1.063**
Stddev	.069	.059	.073	.10	.13	.007	.39	.048	.012
%RSD	1.275	1.032	1.339	.1942	.2456	.1278	.7793	.9618	1.094
#1	5.517	5.711	5.564	51.08	53.90	5.258	50.73	5.021	1.075
#2	5.426	5.636	5.483	50.99	53.66	5.247	50.07	4.956	1.060
#3	5.380	5.752	5.417	50.88	53.68	5.259	50.03	4.928	1.052
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value		5.000							
Range		10.00%							

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**51.94**	**5.493**	**54.81**	F **5.551**	**51.71**	**1.085**	**1.098**	**4.899**	F **5.522**
Stddev	.23	.067	.61	.060	.65	.018	.010	.010	.069
%RSD	.4364	1.222	1.119	1.083	1.262	1.694	.9446	.1975	1.249
#1	52.20	5.565	55.46	5.615	52.41	1.103	1.108	4.898	5.594
#2	51.78	5.480	54.73	5.543	51.63	1.086	1.098	4.889	5.515
#3	51.84	5.433	54.25	5.496	51.11	1.066	1.087	4.909	5.457
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
Value				5.000					5.000
Range				10.00%					10.00%

Sample Name: CCV Acquired: 11/13/2014 23:11:56 Type: QC
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.258	5.445	5.223	F 1.101	F 5.953	5.037	5.462
Stddev	.055	.084	.003	.011	.178	.038	.073
%RSD	1.044	1.540	.0629	.9577	2.983	.7563	1.332
#1	5.238	5.430	5.221	1.111	5.909	5.081	5.541
#2	5.215	5.369	5.227	1.103	5.802	5.017	5.448
#3	5.319	5.535	5.222	1.090	6.149	5.013	5.398
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Fail	Chk Pass	Chk Pass
Value				1.000	5.000		
Range				10.00%	10.00%		

Int. Std.	Y_3710
Units	Cts/S
Avg	3391.0
Stddev	31.2
%RSD	.92042
#1	3355.4
#2	3413.4
#3	3404.2

Sample Name: CCB Acquired: 11/13/2014 23:15:39 Type: QC
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	.0024	.0122	.0006	.0006	.0010	.0020
Stddev	.0001	.0044	.0028	.0044	.0004	.0003	.0004	.0007
%RSD	30.77	39.92	114.0	36.16	60.47	40.82	41.91	36.96
#1	-.0002	-.0061	.0044	.0166	.0010	.0009	.0012	.0029
#2	-.0003	-.0124	-.0007	.0122	.0003	.0005	.0012	.0015
#3	-.0003	-.0146	.0036	.0077	.0005	.0004	.0005	.0017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Cd2288	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0003	<.0000	.0017	.0062	.0157	.0015	<.0000
Stddev	.0001	.0002	.0024	.0026	.0045	.0359	.0017	.0067
%RSD	54.81	54.12	277.9	152.7	72.42	228.0	110.0	489.5
#1	.0001	.0003	-.0010	.0025	.0110	.0568	.0034	-.0035
#2	.0001	.0006	.0016	-.0012	.0022	-.0099	.0002	-.0067
#3	.0002	.0002	-.0032	.0038	.0053	.0003	.0010	.0061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mn2576	Mo2020	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005	<.0000	.0117	.0002	<.0000	<.0000	.0020	.0025
Stddev	.0003	.0003	.0043	.0003	.0018	.0013	.0021	.0032
%RSD	53.43	52.37	36.63	165.9	2441000.	717.7	102.8	129.9
#1	.0006	-.0007	.0153	.0000	.0020	.0013	.0043	.0021
#2	.0007	-.0006	.0070	.0000	-.0012	-.0011	.0014	-.0005
#3	.0002	-.0002	.0129	.0005	-.0009	-.0007	.0003	.0058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB Acquired: 11/13/2014 23:15:39 Type: QC
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2516	Sn1899	Sr4077	Th2832	Ti3349	Tl1908	U_3670
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	.0004	.0007	<.0000	.0007	<.0000	W .1529
Stddev	.0024	.0025	.0005	.0002	.0014	.0006	.0011	.0799
%RSD	1503.	14.09	106.3	29.39	50.77	91.48	160.9	52.23
#1	-.0022	-.0187	.0006	.0009	-.0030	.0010	.0003	.1055
#2	.0025	-.0199	.0008	.0006	-.0041	.0010	-.0018	.1082
#3	-.0008	-.0150	-.0001	.0005	-.0013	.0000	-.0005	.2452
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn
High Limit								.0480
Low Limit								-.0470

Elem	V_2908	Zn2138
Units	ppm	ppm
Avg	.0003	.0003
Stddev	.0003	.0004
%RSD	105.3	139.7
#1	.0002	.0006
#2	.0005	.0002
#3	.0000	-.0001
Check ?	Chk Pass	Chk Pass
High Limit		
Low Limit		

Int. Std.	Y_3710
Units	Cts/S
Avg	3475.1
Stddev	16.7
%RSD	.47978
#1	3488.2
#2	3480.8
#3	3456.4

Sample Name: 160-8836-A-5-D Acquired: 11/13/2014 23:19:37 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0121	10.78	.0046	.2197	.0154	.0001	.0011	1.397	.0001
Stddev	.0007	.02	.0034	.0020	.0001	.0000	.0037	.007	.0002
%RSD	5.622	.2196	72.89	.8894	.5224	15.71	345.0	.4974	168.0
#1	.0114	10.76	.0007	.2218	.0153	.0001	.0037	1.391	.0001
#2	.0122	10.80	.0063	.2179	.0155	.0002	.0028	1.405	.0004
#3	.0127	10.79	.0068	.2196	.0154	.0002	-.0032	1.396	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0007	.0040	.0150	2.637	.3976	.0001	.2502	.2062	.0000
Stddev	.0004	.0012	.0011	.003	.0149	.0017	.0132	.0006	.0000
%RSD	64.13	30.84	7.119	.1289	3.754	1988.	5.267	.2924	89.19
#1	.0003	.0045	.0160	2.634	.3990	-.0011	.2624	.2056	.0000
#2	.0007	.0049	.0139	2.636	.4117	.0020	.2363	.2063	.0001
#3	.0011	.0026	.0152	2.641	.3820	-.0006	.2519	.2068	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.021	.0078	.2114	.0099	10.94	.0027	<.0000	.0619	.0441
Stddev	.008	.0004	.0025	.0009	.10	.0024	.0045	.0083	.0013
%RSD	.3780	4.888	1.205	8.946	.9035	87.48	192.0	13.36	2.939
#1	2.030	.0076	.2097	.0089	10.91	.0002	-.0021	.0540	.0433
#2	2.018	.0082	.2143	.0107	11.05	.0049	-.0069	.0705	.0455
#3	2.015	.0076	.2102	.0101	10.86	.0031	.0020	.0612	.0433
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-8836-A-5-D Acquired: 11/13/2014 23:19:37 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0899	.0007	.0385	.0018	.2568	.0014	.0276
Stddev	.0002	.0054	.0012	.0012	.1034	.0026	.0004
%RSD	.2076	763.6	3.049	68.52	40.26	184.6	1.356
#1	.0900	-.0042	.0382	.0016	.1688	.0039	.0275
#2	.0897	-.0001	.0375	.0007	.2309	.0016	.0280
#3	.0901	.0065	.0398	.0032	.3706	-.0013	.0273
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3544.2
Stddev	18.8
%RSD	.52928
#1	3565.5
#2	3530.1
#3	3537.0

Sample Name: 160-8836-A-6-D Acquired: 11/13/2014 23:23:28 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0008**	**1.140**	**.0033**	**.0462**	**.0063**	**.0006**	**.0003**	**2.510**	**.0011**
Stddev	.0005	.010	.0014	.0040	.0001	.0000	.0024	.024	.0002
%RSD	63.02	.8414	41.05	8.696	1.371	6.393	778.2	.9429	15.15
#1	.0002	1.143	.0043	.0499	.0064	.0006	-.0019	2.495	.0012
#2	.0012	1.130	.0039	.0419	.0062	.0005	.0028	2.499	.0009
#3	.0009	1.149	.0018	.0468	.0062	.0005	-.0001	2.538	.0011
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0009**	**.0065**	**.0411**	**.3759**	**2.768**	**.0087**	**.4268**	**2.661**	**.0016**
Stddev	.0002	.0010	.0013	.0022	.012	.0013	.0030	.012	.0002
%RSD	24.63	15.23	3.259	.5752	.4356	14.84	.7085	.4646	11.67
#1	.0007	.0077	.0427	.3781	2.754	.0089	.4280	2.673	.0014
#2	.0010	.0061	.0402	.3737	2.778	.0073	.4234	2.649	.0018
#3	.0011	.0059	.0406	.3758	2.771	.0098	.4291	2.660	.0016
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**8.672**	**.0043**	**.0070**	**.0047**	**12.77**	**.0019**	**<.0000**	**.0501**	**.5670**
Stddev	.017	.0006	.0017	.0039	.17	.0050	.0025	.0035	.0049
%RSD	.1984	14.02	23.47	82.39	1.296	270.4	167.5	6.924	.8671
#1	8.686	.0047	.0074	.0012	12.63	-.0036	.0012	.0514	.5645
#2	8.653	.0036	.0085	.0041	12.72	.0063	-.0020	.0462	.5638
#3	8.676	.0045	.0052	.0089	12.95	.0029	-.0036	.0528	.5727
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-8836-A-6-D Acquired: 11/13/2014 23:23:28 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2310	<.0000	.0102	.0012	.0933	.0027	.0203
Stddev	.0007	.0005	.0004	.0014	.0702	.0042	.0004
%RSD	.2999	9.299	3.888	119.4	75.25	157.8	1.968
#1	.2317	-.0062	.0098	.0025	.1116	.0048	.0204
#2	.2304	-.0052	.0102	.0012	.0158	.0053	.0199
#3	.2309	-.0060	.0105	-.0003	.1527	-.0022	.0207
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3434.9
Stddev	33.2
%RSD	.96539
#1	3407.8
#2	3471.9
#3	3425.1

Sample Name: 160-8836-A-7-D Acquired: 11/13/2014 23:27:21 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	<.0000	.0035	.0012	<.0000	<.0000	1.565	.0003
Stddev	.0004	.0129	.0009	.0022	.0002	.0000	.0012	.006	.0001
%RSD	45.24	112.5	104.3	62.63	13.56	141.1	171.1	.3577	50.40
#1	-.0011	-.0227	.0001	.0057	.0013	.0000	.0006	1.567	.0002
#2	-.0011	-.0142	-.0016	.0014	.0010	.0000	-.0010	1.570	.0001
#3	-.0004	.0026	-.0011	.0033	.0013	.0000	-.0018	1.559	.0004
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0004	<.0000	.0510	.0878	.0037	.3258	.0041	<.0000
Stddev	.0005	.0015	.0015	.0005	.0104	.0003	.0045	.0003	.0005
%RSD	950.3	377.5	37.42	.9624	11.85	9.419	1.384	7.765	158.0
#1	.0004	.0017	-.0046	.0509	.0764	.0035	.3283	.0044	.0003
#2	-.0005	.0007	-.0049	.0515	.0969	.0041	.3206	.0037	-.0006
#3	.0002	-.0012	-.0022	.0505	.0900	.0034	.3285	.0041	-.0006
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.513	.0004	.0184	.0003	1.374	.0010	.0039	.0468	.0000
Stddev	.013	.0003	.0011	.0022	.014	.0002	.0028	.0094	.0005
%RSD	.2884	77.75	6.180	729.8	1.005	24.11	72.34	20.04	3391.
#1	4.510	.0006	.0184	.0028	1.381	.0010	.0053	.0363	.0004
#2	4.502	.0000	.0173	-.0009	1.383	.0008	.0006	.0498	.0003
#3	4.527	.0006	.0196	-.0011	1.358	.0013	.0057	.0544	-.0006
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-8836-A-7-D Acquired: 11/13/2014 23:27:21 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1208	<.0000	<.0000	<.0000	.1194	<.0000	.0049
Stddev	.0004	.0014	.0011	.0007	.0274	.0010	.0003
%RSD	.3354	23.88	262.7	90.53	22.95	138.6	5.617
#1	.1207	-.0076	-.0011	-.0013	.1441	-.0018	.0052
#2	.1205	-.0049	.0009	-.0012	.1243	.0002	.0048
#3	.1213	-.0055	-.0010	.0000	.0899	-.0007	.0046
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3580.6
Stddev	15.9
%RSD	.44385
#1	3596.6
#2	3580.5
#3	3564.8

Sample Name: 160-8836-A-8-D Acquired: 11/13/2014 23:31:14 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0618	.0011	.0231	.0016	.0039	<.0000	1.307	.0042
Stddev	.0003	.0094	.0013	.0024	.0001	.0000	.0033	.033	.0002
%RSD	39.32	15.22	111.5	10.36	9.252	.5857	979.7	2.526	4.787
#1	-.0009	.0580	-.0003	.0225	.0015	.0039	.0023	1.345	.0044
#2	-.0011	.0725	.0020	.0258	.0018	.0040	-.0041	1.291	.0040
#3	-.0004	.0549	.0017	.0211	.0016	.0039	.0008	1.286	.0040
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0045	.1972	.0981	.2023	2.181	.0128	.3096	2.133	<.0000
Stddev	.0002	.0053	.0045	.0010	.046	.0015	.0068	.009	.0004
%RSD	4.663	2.712	4.604	.4900	2.122	11.49	2.199	.4182	67.38
#1	.0046	.2020	.1019	.2034	2.162	.0137	.3175	2.130	-.0009
#2	.0047	.1981	.0993	.2018	2.234	.0136	.3059	2.142	-.0001
#3	.0043	.1914	.0931	.2016	2.148	.0111	.3055	2.125	-.0008
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	8.250	.0162	.0235	.0318	76.74	.0223	<.0000	.0347	5.417
Stddev	.032	.0002	.0020	.0029	2.12	.0012	.0032	.0057	.132
%RSD	.3900	1.479	8.683	9.040	2.759	5.302	136.1	16.34	2.442
#1	8.232	.0161	.0258	.0351	79.16	.0215	-.0057	.0390	5.569
#2	8.287	.0165	.0229	.0295	75.80	.0217	-.0019	.0369	5.341
#3	8.230	.0160	.0218	.0310	75.25	.0236	.0006	.0283	5.340
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-8836-A-8-D Acquired: 11/13/2014 23:31:14 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1265	<.0000	.0111	<.0000	.0641	.0032	.0867
Stddev	.0008	.0008	.0005	.0025	.1096	.0043	.0019
%RSD	.6520	14.53	4.709	1095.	170.9	132.9	2.162
#1	.1259	-.0064	.0107	-.0031	.1546	-.0013	.0889
#2	.1274	-.0056	.0109	.0013	.0956	.0072	.0857
#3	.1261	-.0048	.0117	.0012	-.0578	.0038	.0856
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3646.9
Stddev	63.0
%RSD	1.7284
#1	3574.6
#2	3675.8
#3	3690.3

Sample Name: 160-8836-A-9-D Acquired: 11/13/2014 23:35:02 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0050	<.0000	.0037	.0006	.0002	<.0000	.4366	.0003
Stddev	.0007	.0047	.0015	.0005	.0003	.0000	.0007	.0127	.0001
%RSD	262.4	94.12	331.2	12.67	43.57	9.686	147.4	2.906	43.82
#1	.0004	.0011	-.0022	.0040	.0003	.0002	-.0006	.4246	.0003
#2	-.0001	.0103	.0001	.0032	.0006	.0002	.0003	.4352	.0004
#3	-.0010	.0038	.0007	.0040	.0009	.0002	-.0010	.4499	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	1.487	.0061	.0710	.4238	.0017	.2235	.2264	<.0000
Stddev	.0003	.015	.0004	.0006	.0228	.0011	.0070	.0016	.0003
%RSD	394.4	1.027	5.851	.7933	5.385	64.54	3.115	.7127	124.9
#1	-.0003	1.477	.0058	.0713	.3986	.0006	.2232	.2248	.0001
#2	-.0002	1.478	.0065	.0703	.4431	.0018	.2306	.2280	-.0005
#3	.0003	1.504	.0060	.0713	.4299	.0027	.2167	.2263	-.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	22.00	.0032	.0029	.1762	35.28	.0084	.0013	.0415	.3324
Stddev	.09	.0002	.0020	.0058	1.25	.0039	.0020	.0031	.0092
%RSD	.4251	7.395	69.58	3.297	3.545	46.35	150.4	7.393	2.773
#1	21.94	.0029	.0006	.1702	34.08	.0040	-.0009	.0419	.3239
#2	22.11	.0033	.0041	.1767	35.18	.0113	.0029	.0444	.3311
#3	21.96	.0034	.0040	.1818	36.57	.0100	.0020	.0383	.3422
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-8836-A-9-D Acquired: 11/13/2014 23:35:02 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0738	<.0000	.0055	.0016	.2365	.0008	.2344
Stddev	.0005	.0049	.0004	.0009	.0542	.0019	.0073
%RSD	.7006	571.0	7.576	55.60	22.90	238.3	3.103
#1	.0735	-.0065	.0055	.0007	.1768	.0006	.2271
#2	.0744	.0025	.0051	.0017	.2501	-.0010	.2344
#3	.0736	.0014	.0059	.0025	.2825	.0028	.2416
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4124.0
Stddev	65.7
%RSD	1.5941
#1	4182.9
#2	4136.0
#3	4053.1

Sample Name: 160-8836-A-10-D Acquired: 11/13/2014 23:38:51 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0004**	**<.0000**	**.0014**	**.0083**	**.0036**	**.0000**	**<.0000**	**1.900**	**<.0000**
Stddev	.0005	.0011	.0022	.0028	.0002	.0001	.0028	.023	.0001
%RSD	135.9	88.54	158.7	33.26	4.741	729.4	819.4	1.215	168.8
#1	.0010	-.0012	-.0003	.0113	.0038	.0001	.0028	1.874	-.0001
#2	-.0001	-.0024	.0039	.0059	.0036	.0000	-.0026	1.909	.0000
#3	.0002	-.0001	.0006	.0077	.0034	.0000	-.0012	1.917	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**<.0000**	**.1583**	**<.0000**	**.0350**	**.1426**	**.0076**	**.6096**	**.0190**	**<.0000**
Stddev	.0001	.0038	.0023	.0019	.0235	.0007	.0133	.0005	.0004
%RSD	27.52	2.420	271.1	5.384	16.52	9.678	2.176	2.668	102.2
#1	-.0002	.1545	.0001	.0363	.1500	.0069	.5956	.0185	.0000
#2	-.0004	.1583	.0008	.0359	.1615	.0083	.6220	.0190	-.0004
#3	-.0004	.1622	-.0034	.0328	.1162	.0074	.6113	.0195	-.0008
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**6.461**	**.0002**	**.2280**	**.0203**	**4.328**	**.0019**	**.0040**	**.0700**	**.0040**
Stddev	.001	.0002	.0037	.0005	.030	.0011	.0013	.0063	.0002
%RSD	.0132	105.2	1.633	2.463	.6938	59.54	32.92	9.059	4.444
#1	6.461	.0004	.2259	.0204	4.300	.0028	.0048	.0742	.0040
#2	6.462	.0001	.2259	.0207	4.325	.0006	.0025	.0730	.0039
#3	6.460	.0001	.2323	.0197	4.360	.0022	.0048	.0627	.0042
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-8836-A-10-D Acquired: 11/13/2014 23:38:51 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1985	<.0000	.0007	.0004	.0982	<.0000	.0279
Stddev	.0003	.0024	.0005	.0015	.0841	.0019	.0003
%RSD	.1664	27.76	82.11	409.4	85.69	147.8	1.208
#1	.1982	-.0112	.0012	.0019	.0370	-.0030	.0275
#2	.1985	-.0065	.0007	-.0011	.0635	.0007	.0281
#3	.1988	-.0080	.0001	.0002	.1942	-.0015	.0279
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3699.9
Stddev	48.2
%RSD	1.3035
#1	3755.5
#2	3674.9
#3	3669.4

Sample Name: 160-8836-A-11-D Acquired: 11/13/2014 23:42:44 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0008	.0748	<.0000	.0045	.0033	<.0000	.0009	.5044	.0000
Stddev	.0009	.0015	.0012	.0023	.0003	.0000	.0031	.0049	.0002
%RSD	121.1	1.978	41.54	50.86	9.390	123.1	333.6	.9796	2248.
#1	.0008	.0765	-.0041	.0038	.0035	.0000	.0041	.5099	-.0002
#2	-.0002	.0736	-.0018	.0026	.0030	.0000	.0006	.5030	.0002
#3	.0017	.0744	-.0026	.0070	.0036	.0000	-.0020	.5003	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	2.052	<.0000	.1122	.0028	<.0000	.1110	.0103	<.0000
Stddev	.0004	.030	.0017	.0001	.0215	.0008	.0145	.0001	.0002
%RSD	153.6	1.468	190.9	.1160	767.2	100.5	13.09	1.194	213.7
#1	-.0007	2.032	-.0003	.1123	-.0129	-.0002	.0992	.0104	-.0003
#2	.0001	2.038	.0004	.1120	.0273	-.0018	.1066	.0104	.0000
#3	-.0002	2.087	-.0028	.1122	-.0060	-.0005	.1272	.0102	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	23.65	.0007	.0102	.1503	28.99	.0101	<.0000	.0507	.0165
Stddev	.08	.0001	.0011	.0005	.34	.0015	.0021	.0032	.0004
%RSD	.3317	19.27	11.26	.3145	1.175	15.05	191.6	6.263	2.385
#1	23.64	.0006	.0095	.1506	29.28	.0118	-.0021	.0471	.0163
#2	23.57	.0006	.0115	.1497	29.08	.0089	-.0024	.0521	.0169
#3	23.73	.0008	.0095	.1505	28.62	.0095	.0013	.0529	.0162
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-8836-A-11-D Acquired: 11/13/2014 23:42:44 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0858	<.0000	.1032	.0020	.2961	<.0000	.5131
Stddev	.0003	.0044	.0008	.0004	.1036	.0023	.0040
%RSD	.3388	142.3	.7349	21.78	34.99	99.23	.7765
#1	.0859	.0020	.1039	.0017	.2514	-.0009	.5164
#2	.0855	-.0053	.1024	.0017	.2223	-.0011	.5141
#3	.0861	-.0061	.1033	.0025	.4145	-.0049	.5087
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4217.0
Stddev	16.4
%RSD	.38798
#1	4205.4
#2	4235.7
#3	4209.8

Sample Name: 160-8836-A-12-D Acquired: 11/13/2014 23:46:33 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0003**	**.2650**	**.0015**	**.0238**	**.0148**	**.0048**	**.0034**	**1.729**	**.0054**
Stddev	.0009	.0064	.0012	.0020	.0001	.0000	.0032	.007	.0000
%RSD	254.3	2.401	76.98	8.261	.4160	.5247	93.53	.3926	.5803
#1	-.0006	.2669	.0006	.0256	.0148	.0048	.0071	1.727	.0054
#2	.0009	.2702	.0028	.0217	.0147	.0047	.0018	1.724	.0054
#3	.0007	.2579	.0011	.0241	.0148	.0048	.0014	1.737	.0054
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0052**	**.0087**	**.0362**	**.3310**	**2.310**	**.0081**	**.6273**	**1.303**	**.3316**
Stddev	.0003	.0014	.0028	.0009	.043	.0013	.0181	.005	.0018
%RSD	4.912	16.34	7.619	.2570	1.842	16.57	2.893	.3814	.5284
#1	.0050	.0088	.0393	.3300	2.328	.0066	.6274	1.307	.3314
#2	.0055	.0072	.0353	.3315	2.262	.0090	.6092	1.297	.3299
#3	.0052	.0101	.0340	.3315	2.341	.0087	.6455	1.303	.3334
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.15**	**.0093**	**.3436**	**.0052**	**19.85**	**.0081**	**.0028**	**.0447**	**2.536**
Stddev	.02	.0001	.0017	.0015	.11	.0021	.0024	.0091	.012
%RSD	.1707	.6806	.4926	29.57	.5558	26.44	84.93	20.28	.4745
#1	10.15	.0092	.3432	.0050	19.81	.0056	.0001	.0550	2.539
#2	10.13	.0093	.3422	.0038	19.77	.0092	.0039	.0414	2.523
#3	10.17	.0093	.3455	.0069	19.98	.0095	.0044	.0378	2.546
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-8836-A-12-D Acquired: 11/13/2014 23:46:33 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1541	<.0000	.0046	.0041	.1654	.0064	.0318
Stddev	.0000	.0024	.0005	.0025	.0851	.0012	.0001
%RSD	.0061	53.00	9.876	59.79	51.47	19.04	.3235
#1	.1541	-.0040	.0044	.0070	.2618	.0078	.0317
#2	.1541	-.0026	.0043	.0026	.1340	.0056	.0319
#3	.1541	-.0073	.0052	.0028	.1004	.0059	.0317
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3431.8
Stddev	38.9
%RSD	1.1336
#1	3391.9
#2	3469.7
#3	3433.8

Sample Name: 160-8836-A-13-D Acquired: 11/13/2014 23:50:21 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0045	.0022	.0322	.0006	.0000	<.0000	1.107	.0001
Stddev	.0004	.0037	.0021	.0011	.0001	.0000	.0021	.014	.0001
%RSD	66.03	82.86	95.21	3.467	14.78	411.0	146.1	1.269	184.0
#1	-.0008	.0002	.0011	.0311	.0007	.0001	-.0038	1.121	.0000
#2	-.0008	.0071	.0009	.0334	.0005	.0000	-.0003	1.093	.0000
#3	-.0001	.0061	.0046	.0320	.0006	.0000	-.0001	1.106	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0014	<.0000	.0249	.1073	.0023	.3169	.0022	<.0000
Stddev	.0003	.0006	.0007	.0014	.0130	.0002	.0021	.0004	.0004
%RSD	102.4	42.49	45.79	5.478	12.08	8.627	.6557	20.67	78.49
#1	-.0002	.0020	-.0013	.0261	.1220	.0021	.3185	.0026	-.0010
#2	.0000	.0008	-.0022	.0234	.0973	.0025	.3145	.0017	-.0003
#3	-.0005	.0013	-.0009	.0251	.1028	.0023	.3175	.0022	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.131	.0001	.0027	.0032	2.701	<.0000	.0009	.0746	.0005
Stddev	.020	.0002	.0014	.0010	.030	.0030	.0037	.0054	.0008
%RSD	.3222	240.2	49.54	33.03	1.097	559.4	412.9	7.289	155.6
#1	6.126	-.0001	.0027	.0025	2.733	-.0039	.0050	.0759	.0005
#2	6.114	.0003	.0014	.0026	2.674	.0019	-.0021	.0686	.0014
#3	6.153	.0000	.0042	.0044	2.696	.0003	-.0003	.0792	-.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-8836-A-13-D Acquired: 11/13/2014 23:50:21 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0188	<.0000	.0006	.0032	<.0000	<.0000	.0046
Stddev	.0001	.0030	.0002	.0020	.0230	.0009	.0001
%RSD	.7181	55.77	33.13	62.06	75.50	32.89	1.577
#1	.0190	-.0054	.0007	.0055	-.0043	-.0018	.0045
#2	.0187	-.0023	.0007	.0018	-.0398	-.0036	.0045
#3	.0188	-.0082	.0004	.0023	-.0473	-.0029	.0047
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3770.6
Stddev	14.2
%RSD	.37754
#1	3754.2
#2	3779.2
#3	3778.4

Sample Name: 160-8836-A-14-D Acquired: 11/13/2014 23:54:15 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0018**	**.0185**	**.0037**	**.0074**	**<.0000**	**.0000**	**.0007**	**1.141**	**<.0000**
Stddev	.0016	.0028	.0014	.0021	.0001	.0000	.0038	.016	.0000
%RSD	92.11	15.35	37.83	28.60	171.9	69.77	578.3	1.393	43.43
#1	-.0001	.0153	.0024	.0050	-.0001	.0000	-.0036	1.134	.0000
#2	.0029	.0209	.0052	.0084	.0000	.0000	.0037	1.160	.0000
#3	.0025	.0192	.0035	.0089	-.0001	.0000	.0019	1.130	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000**	**.7299**	**<.0000**	**.0802**	**.3288**	**<.0000**	**2.328**	**.0674**	**.0005**
Stddev	.0002	.0087	.0013	.0013	.0268	.0007	.010	.0008	.0001
%RSD	413.8	1.197	90.05	1.619	8.164	296.0	.4129	1.151	31.10
#1	.0002	.7213	-.0027	.0789	.3506	-.0002	2.317	.0667	.0005
#2	-.0002	.7388	-.0014	.0814	.2988	-.0009	2.337	.0674	.0003
#3	.0001	.7297	-.0002	.0803	.3370	.0005	2.328	.0682	.0006
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**22.31**	**.0002**	**.0009**	**.0743**	**41.29**	**.0047**	**<.0000**	**.0300**	**.0010**
Stddev	.11	.0001	.0023	.0009	.55	.0008	.0020	.0046	.0003
%RSD	.5060	51.08	259.8	1.276	1.340	16.11	1443.	15.41	29.12
#1	22.19	.0001	.0029	.0745	40.99	.0045	-.0012	.0291	.0010
#2	22.31	.0004	-.0016	.0733	41.93	.0055	.0021	.0350	.0014
#3	22.42	.0002	.0014	.0751	40.96	.0040	-.0013	.0259	.0008
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-8836-A-14-D Acquired: 11/13/2014 23:54:15 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0878	<.0000	.0020	.0041	.3341	<.0000	.1379
Stddev	.0007	.0050	.0006	.0006	.0666	.0018	.0017
%RSD	.7772	238.1	30.84	15.20	19.95	45.70	1.208
#1	.0874	-.0033	.0015	.0044	.3142	-.0030	.1366
#2	.0875	-.0064	.0018	.0034	.4084	-.0060	.1397
#3	.0886	.0034	.0027	.0046	.2796	-.0028	.1372
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4101.0
Stddev	52.7
%RSD	1.2853
#1	4157.7
#2	4053.5
#3	4091.8

Sample Name: CCV Acquired: 11/13/2014 23:58:05 Type: QC
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.097**	**51.82**	F **5.628**	**4.937**	**5.401**	**5.254**	F **5.617**	F **55.19**	F **5.608**
Stddev	.005	.25	.218	.003	.018	.072	.229	1.76	.208
%RSD	.4873	.4857	3.881	.0578	.3386	1.375	4.080	3.189	3.715
#1	1.101	52.08	5.575	4.934	5.420	5.242	5.557	54.82	5.568
#2	1.091	51.80	5.442	4.937	5.401	5.332	5.424	53.65	5.422
#3	1.100	51.58	5.869	4.940	5.383	5.189	5.870	57.11	5.833
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Fail	Chk Fail
Value			5.000				5.000	50.00	5.000
Range			10.00%				10.00%	10.00%	10.00%

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F **5.605**	F **5.765**	F **5.640**	**51.94**	**53.93**	**5.279**	**51.11**	**5.068**	**1.095**
Stddev	.202	.029	.227	.04	.11	.010	.34	.031	.040
%RSD	3.612	.5036	4.024	.0680	.2081	.1912	.6699	.6056	3.664
#1	5.562	5.766	5.594	51.95	54.06	5.273	51.49	5.101	1.084
#2	5.428	5.736	5.440	51.90	53.88	5.291	50.83	5.062	1.061
#3	5.826	5.794	5.887	51.97	53.86	5.274	51.01	5.040	1.139
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	5.000	5.000	5.000						
Range	10.00%	10.00%	10.00%						

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**52.10**	F **5.658**	F **56.72**	F **5.711**	**53.60**	F **1.117**	F **1.132**	**5.014**	F **5.690**
Stddev	.15	.199	2.18	.202	2.44	.047	.049	.014	.201
%RSD	.2926	3.511	3.836	3.538	4.561	4.222	4.309	.2782	3.535
#1	52.27	5.614	56.23	5.674	52.95	1.106	1.115	5.002	5.651
#2	52.05	5.486	54.84	5.529	51.55	1.076	1.094	5.029	5.511
#3	51.98	5.876	59.11	5.929	56.31	1.168	1.187	5.010	5.907
Check ?	Chk Pass	Chk Fail	Chk Fail	Chk Fail	Chk Pass	Chk Fail	Chk Fail	Chk Pass	Chk Fail
Value		5.000	50.00	5.000		1.000	1.000		5.000
Range		10.00%	10.00%	10.00%		10.00%	10.00%		10.00%

Sample Name: CCV Acquired: 11/13/2014 23:58:05 Type: QC
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.319	5.469	5.260	F 1.132	F 5.870	5.098	F 5.626
Stddev	.090	.047	.005	.044	.042	.019	.204
%RSD	1.688	.8590	.0871	3.862	.7214	.3698	3.630
#1	5.405	5.497	5.255	1.121	5.882	5.119	5.581
#2	5.326	5.415	5.262	1.095	5.823	5.092	5.449
#3	5.226	5.496	5.263	1.181	5.905	5.083	5.849
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Fail	Chk Pass	Chk Fail
Value				1.000	5.000		5.000
Range				10.00%	10.00%		10.00%

Int. Std.	Y_3710
Units	Cts/S
Avg	3284.7
Stddev	16.4
%RSD	.49803
#1	3275.3
#2	3303.6
#3	3275.3

Sample Name: CCB Acquired: 11/14/2014 0:01:48 Type: QC
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0007**	**<.0000**	**.0007**	**.0138**	**.0004**	**.0004**	**.0007**	**.0011**
Stddev	.0001	.0064	.0010	.0016	.0000	.0001	.0021	.0005
%RSD	9.347	92.65	146.7	11.30	13.87	15.48	316.5	40.80
#1	.0007	-.0078	.0017	.0144	.0004	.0005	.0011	.0012
#2	.0007	-.0128	-.0003	.0121	.0003	.0004	.0024	.0016
#3	.0008	-.0001	.0007	.0150	.0004	.0004	-.0016	.0006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Cd2288	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**<.0000**	**<.0000**	**<.0000**	**.0051**	**.0028**	**.0004**	**<.0000**
Stddev	.0001	.0004	.0011	.0034	.0005	.0074	.0011	.0160
%RSD	95.13	208.6	87.60	114.3	10.26	262.3	300.2	156.1
#1	.0000	.0000	-.0005	-.0011	.0056	.0101	.0015	-.0283
#2	.0002	-.0006	-.0025	-.0069	.0050	-.0046	.0002	.0023
#3	.0001	.0001	-.0008	-.0009	.0046	.0029	-.0006	-.0048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mn2576	Mo2020	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**<.0000**	**.0094**	**.0001**	**.0000**	**.0024**	**.0040**	**.0000**
Stddev	.0000	.0002	.0032	.0005	.0009	.0014	.0038	.0038
%RSD	42.93	55.75	34.41	734.1	7156.	57.65	94.58	15530.
#1	.0001	-.0004	.0060	-.0003	.0010	.0031	.0029	-.0043
#2	.0001	-.0006	.0096	.0006	-.0008	.0032	.0082	.0014
#3	.0001	-.0002	.0124	-.0001	-.0002	.0008	.0009	.0030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB Acquired: 11/14/2014 0:01:48 Type: QC
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2516	Sn1899	Sr4077	Th2832	Ti3349	Tl1908	U_3670
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0018	<.0000	.0008	.0004	<.0000	.0005	.0011	W .1059
Stddev	.0007	.0024	.0004	.0001	.0025	.0002	.0009	.1146
%RSD	39.81	16.67	46.72	14.42	37.33	46.34	87.77	108.2
#1	.0012	-.0139	.0006	.0005	-.0079	.0003	.0022	.2153
#2	.0016	-.0122	.0013	.0004	-.0038	.0007	.0004	-.0132
#3	.0026	-.0170	.0006	.0004	-.0082	.0003	.0007	.1156
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn
High Limit								.0480
Low Limit								-.0470

Elem	V_2908	Zn2138
Units	ppm	ppm
Avg	<.0000	<.0000
Stddev	.0031	.0001
%RSD	352.3	2413.
#1	.0015	.0000
#2	.0002	-.0001
#3	-.0044	.0001
Check ?	Chk Pass	Chk Pass
High Limit		
Low Limit		

Int. Std.	Y_3710
Units	Cts/S
Avg	3570.2
Stddev	80.9
%RSD	2.2661
#1	3477.3
#2	3608.3
#3	3625.0

Sample Name: 160-8836-A-16-D Acquired: 11/14/2014 0:05:45 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0036**	**1.228**	**.0015**	**.0250**	**.0131**	**.0000**	**<.0000**	**.1098**	**<.0000**
Stddev	.0006	.011	.0008	.0053	.0002	.0000	.0043	.0016	.0003
%RSD	17.78	.8871	50.89	21.27	1.350	94.18	21240.	1.439	322.7
#1	.0043	1.223	.0009	.0254	.0132	.0000	.0049	.1109	.0003
#2	.0034	1.220	.0012	.0301	.0132	.0001	-.0029	.1080	-.0003
#3	.0030	1.240	.0024	.0195	.0129	.0000	-.0021	.1104	-.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0002**	**.0025**	**<.0000**	**.2012**	**.1255**	**.0003**	**.0189**	**.0025**	**<.0000**
Stddev	.0001	.0002	.0011	.0023	.0508	.0004	.0130	.0002	.0004
%RSD	64.09	8.440	80.25	1.140	40.48	132.2	68.57	8.273	176.8
#1	.0001	.0024	-.0002	.2029	.0670	.0001	.0119	.0023	.0001
#2	.0004	.0024	-.0016	.1986	.1583	.0007	.0109	.0027	-.0002
#3	.0002	.0027	-.0024	.2021	.1512	.0000	.0338	.0025	-.0006
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**144.4**	**.0015**	**.0188**	**.0031**	**1.819**	**.0015**	**<.0000**	**.3535**	**.0039**
Stddev	.6	.0003	.0014	.0014	.015	.0007	.0004	.0054	.0003
%RSD	.3910	23.36	7.228	43.96	.8027	49.61	35.47	1.514	8.405
#1	143.8	.0011	.0182	.0024	1.814	.0021	-.0015	.3482	.0040
#2	144.6	.0018	.0178	.0047	1.807	.0016	-.0008	.3533	.0035
#3	144.8	.0015	.0204	.0023	1.835	.0007	-.0009	.3589	.0041
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-8836-A-16-D Acquired: 11/14/2014 0:05:45 Type: Unk
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0265	<.0000	.0027	.0013	.0512	<.0000	.0063
Stddev	.0001	.0026	.0005	.0021	.0484	.0009	.0002
%RSD	.3818	41.45	18.26	159.8	94.61	204.7	3.419
#1	.0266	-.0061	.0022	.0035	.0088	-.0012	.0061
#2	.0266	-.0090	.0031	-.0008	.1039	.0005	.0065
#3	.0264	-.0038	.0030	.0014	.0408	-.0006	.0062
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3447.9
Stddev	12.1
%RSD	.35041
#1	3448.8
#2	3459.5
#3	3435.4

Sample Name: CCV Acquired: 11/14/2014 0:09:50 Type: QC
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 1.145	54.61	F 5.827	5.216	F 5.698	5.479	F 5.820	F 57.06	F 5.802
Stddev	.013	.15	.093	.015	.020	.004	.095	.82	.098
%RSD	1.129	.2770	1.601	.2948	.3587	.0788	1.632	1.435	1.697
#1	1.158	54.50	5.932	5.202	5.692	5.483	5.925	57.97	5.912
#2	1.132	54.79	5.755	5.233	5.720	5.480	5.739	56.37	5.722
#3	1.145	54.56	5.793	5.214	5.680	5.474	5.797	56.85	5.771
Check ?	Chk Fail	Chk Pass	Chk Fail	Chk Pass	Chk Fail	Chk Pass	Chk Fail	Chk Fail	Chk Fail
Value	1.000		5.000		5.000		5.000	50.00	5.000
Range	10.00%		10.00%		10.00%		10.00%	10.00%	10.00%

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 5.796	F 5.962	F 5.828	54.60	F 56.74	F 5.581	53.62	5.342	F 1.135
Stddev	.090	.089	.101	.24	.23	.025	.12	.005	.016
%RSD	1.548	1.489	1.734	.4331	.4087	.4483	.2291	.0966	1.437
#1	5.894	6.051	5.939	54.78	56.79	5.578	53.55	5.340	1.153
#2	5.718	5.873	5.742	54.67	56.95	5.607	53.55	5.348	1.122
#3	5.776	5.962	5.802	54.33	56.49	5.557	53.77	5.339	1.129
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Pass	Chk Fail	Chk Fail	Chk Pass	Chk Pass	Chk Fail
Value	5.000	5.000	5.000		50.00	5.000			1.000
Range	10.00%	10.00%	10.00%		10.00%	10.00%			10.00%

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	54.92	F 5.849	F 58.61	F 5.913	F 55.67	F 1.159	F 1.174	5.284	F 5.896
Stddev	.13	.090	.94	.094	.87	.019	.022	.019	.087
%RSD	.2276	1.539	1.610	1.591	1.568	1.642	1.916	.3643	1.476
#1	54.88	5.948	59.65	6.015	56.63	1.180	1.200	5.283	5.992
#2	55.05	5.773	57.82	5.830	54.93	1.143	1.161	5.304	5.822
#3	54.81	5.826	58.35	5.894	55.46	1.154	1.162	5.265	5.875
Check ?	Chk Pass	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Pass	Chk Fail
Value		5.000	50.00	5.000	50.00	1.000	1.000		5.000
Range		10.00%	10.00%	10.00%	10.00%	10.00%	10.00%		10.00%

Sample Name: CCV Acquired: 11/14/2014 0:09:50 Type: QC
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 5.529	F 5.697	F 5.548	F 1.172	F 6.109	5.370	F 5.809
Stddev	.106	.087	.016	.023	.124	.011	.095
%RSD	1.924	1.522	.2814	1.951	2.033	.2088	1.633
#1	5.475	5.761	5.549	1.198	6.198	5.359	5.914
#2	5.462	5.599	5.563	1.153	5.967	5.370	5.728
#3	5.652	5.732	5.532	1.166	6.162	5.382	5.786
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Pass	Chk Fail
Value	5.000	5.000	5.000	1.000	5.000		5.000
Range	10.00%	10.00%	10.00%	10.00%	10.00%		10.00%

Int. Std.	Y_3710
Units	Cts/S
Avg	3398.1
Stddev	56.9
%RSD	1.6757
#1	3337.9
#2	3451.1
#3	3405.3

Sample Name: CCB Acquired: 11/14/2014 0:13:33 Type: QC
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	<.0000	.0164	.0003	.0004	.0047	.0042
Stddev	.0006	.0078	.0012	.0047	.0001	.0001	.0027	.0002
%RSD	323.9	195.9	240.7	28.42	32.86	15.00	56.78	4.763
#1	-.0009	-.0014	-.0006	.0162	.0002	.0005	.0047	.0042
#2	-.0001	-.0127	.0007	.0212	.0002	.0004	.0074	.0044
#3	.0004	.0022	-.0016	.0119	.0004	.0004	.0021	.0040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Cd2288	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	.0001	.0007	<.0000	.0053	.0069	.0002	.0110
Stddev	.0002	.0003	.0028	.0008	.0012	.0196	.0004	.0071
%RSD	61.84	308.3	406.0	45.11	22.29	284.9	224.2	64.55
#1	.0001	.0004	-.0025	-.0026	.0067	-.0137	.0001	.0119
#2	.0003	.0001	.0024	-.0010	.0046	.0253	-.0002	.0177
#3	.0003	-.0002	.0021	-.0016	.0047	.0090	.0006	.0035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mn2576	Mo2020	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	<.0000	.0155	.0001	.0005	.0005	.0022	.0014
Stddev	.0003	.0003	.0060	.0004	.0009	.0014	.0045	.0028
%RSD	227.6	53.83	38.88	434.1	169.6	317.2	206.3	201.7
#1	.0003	-.0006	.0109	.0004	.0014	-.0003	.0071	-.0010
#2	-.0002	-.0008	.0133	-.0004	.0004	.0021	-.0015	.0007
#3	.0002	-.0002	.0223	.0003	-.0003	-.0004	.0009	.0044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB Acquired: 11/14/2014 0:13:33 Type: QC
Method: 2014v3(v292) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2516	Sn1899	Sr4077	Th2832	Ti3349	Tl1908	U_3670
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0025	<.0000	.0010	.0004	<.0000	.0005	.0001	W .1274
Stddev	.0052	.0026	.0005	.0000	.0013	.0008	.0018	.0671
%RSD	207.3	20.88	47.78	10.40	20.78	171.4	2847.	52.67
#1	.0079	-.0096	.0016	.0004	-.0046	.0012	-.0012	.1633
#2	.0021	-.0137	.0006	.0004	-.0066	.0006	.0022	.1691
#3	-.0025	-.0144	.0009	.0005	-.0068	-.0004	-.0007	.0500
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn
High Limit								.0480
Low Limit								-.0470

Elem	V_2908	Zn2138
Units	ppm	ppm
Avg	.0003	.0007
Stddev	.0033	.0003
%RSD	1160.	50.69
#1	-.0024	.0010
#2	-.0007	.0007
#3	.0040	.0003
Check ?	Chk Pass	Chk Pass
High Limit		
Low Limit		

Int. Std.	Y_3710
Units	Cts/S
Avg	3498.4
Stddev	26.9
%RSD	.76991
#1	3489.6
#2	3477.0
#3	3528.7

FC 11/19/14

ABATCH: 158045

File: 111814c1

	Pos ID	Rack	Row	Col	Type	Samplename	Comment	Custom ID1	Custom ID2	Custom ID3
1	1001	3	1	1	Unk	MB 160-157018/1-A				
2	1002	3	1	2	Unk	LCS 160-157018/2-				
3	1003	3	1	3	Unk	160-9229-D-8-A				
4	1004	3	1	4	Unk	160-9229-D-8-A SD	DF=5			
5	1005	3	1	5	Unk	160-9229-D-8-B MS				
6	1006	3	1	6	Unk	160-9229-D-8-C MS				
7	1007	3	1	7	Unk	160-9229-D-9-A				
8	1008	3	1	8	Unk	160-9229-D-10-A				
9	1009	3	1	9	Unk	160-9229-D-11-A				
10	1010	3	1	10	Unk	MB 160-157007/1-A				
11	1011	3	1	11	Unk	LCS 160-157007/2-				
12	1012	3	1	12	Unk	160-9228-D-5-A				
13	1013	3	1	13	Unk	160-9228-D-5-A SD	DF=5			
14	1014	3	1	14	Unk	160-9228-D-5-B MS				
15	1015	3	1	15	Unk	160-9228-D-5-C MS				
16	1016	3	2	1	Unk	160-9228-D-6-A				
17	1017	3	2	2	Unk	160-9228-D-7-A				
18	1018	3	2	3	Unk	160-9228-F-9-A				
19	1019	3	2	4	Unk	MB 160-152424/1-A				
20	1020	3	2	5	Unk	LCS 160-152424/2-				
21	1021	3	2	6	Unk	160-8887-K-1-A	DF=20			
22	1022	3	2	7	Unk	160-8887-K-1-A SD	DF=100			
23	1023	3	2	8	Unk	160-8887-K-1-B MS	DF=20			
24	1024	3	2	9	Unk	160-8887-K-1-C MS	DF=20			
25	1025	3	2	10	Unk	160-8887-F-2-A	DF=20			
26	1026	3	2	11	Unk	160-8887-F-3-A	DF=20			
27	1027	3	2	12	Unk	160-8887-F-5-A	DF=20			
28	1028	3	2	13	Unk	160-8887-F-6-A	DF=20			
29	1029	3	2	14	Unk	160-8887-H-7-A	DF=20			
30	1030	3	2	15	Unk	160-8887-F-8-A	DF=20			
31	1031	3	3	1	Unk	MB 160-152519/1-A				
32	1032	3	3	2	Unk	LCS 160-152519/2-				
33	1033	3	3	3	Unk	160-8922-D-1-A	DF=20			
34	1034	3	3	4	Unk	160-8922-D-1-A SD	DF=100			
35	1035	3	3	5	Unk	160-8922-D-1-B MS	DF=20			
36	1036	3	3	6	Unk	160-8922-D-1-C MS	DF=20			
37	1037	3	3	7	Unk	MB 160-157443/1-A				
38	1038	3	3	8	Unk	LCS 160-157443/2-				
39	1039	3	3	9	Unk	160-9093-H-1-B	DF=10			
40	1040	3	3	10	Unk	160-9093-H-1-B SD	DF=50			
41	1041	3	3	11	Unk	160-9093-H-1-C MS	DF=10			
42	1042	3	3	12	Unk	160-9093-H-1-D MS	DF=10			
43	1043	3	3	13	Unk	160-9071-C-1-H	DF=10			
44	1044	3	3	14	Unk	~~LB 160-153858/1-D~~				
45	1045	3	3	15	Unk	LCS 160-156550/2-				
46	1046	3	4	1	Unk	160-9093-G-1-H	DF=10			
47	1047	3	4	2	Unk	160-9093-G-1-H SD	DF=50			
48	1048	3	4	3	Unk	160-9093-G-1-I MS	DF=10			
49	1049	3	4	4	Unk	~~160-9093-G-1-J MS~~	~~DF=10~~			
50	1050	3	4	5	Unk	MB 160-157021/1-A				
51	1051	3	4	6	Unk	LCS 160-157021/2-				
52	1052	3	4	7	Unk	160-9053-D-12-G	DF=50			
53	1053	3	4	8	Unk	160-9053-D-12-G S	DF=250			
54	1054	3	4	9	Unk	160-9053-D-12-H M	DF=50			
55	1055	3	4	10	Unk	160-9053-D-12-I MS	DF=50			
56	1056	3	4	11	Unk	160-9053-D-12-G P	DF=50			
57	1057	3	4	12	Unk	~~MB 160-157084/1-A~~				
58	1058	3	4	13	Unk	LCS 160-157084/2-				
59	1059	3	4	14	Unk	160-9103-B-34-F	DF=10			
60	1060	3	4	15	Unk	160-9103-B-34-F SD	DF=50			
61	1061	3	5	1	Unk	160-9103-B-34-G M	DF=10			
62	1062	3	5	2	Unk	160-9103-B-34-H M	DF=10			
63	1063	3	5	3	Unk	~~160-9103-B-34-F PD~~	DF=10			

	Pos ID	Rack	Row	Col	Type	Samplename	Comment	Custom ID1	Custom ID2	Custom ID3
64	1064	3	5	4	Unk	160-9083-A-13-B	DF=10			
65	1065	3	5	5	Unk	LB 160-156058/1-B				
66	1066	3	5	6	Unk	LCS 160-156548/2-				
67	1067	3	5	7	Unk	160-9227-A-1-B				
68	1068	3	5	8	Unk	160-9227-A-1-B SD	DF=5			
69	1069	3	5	9	Unk	160-9227-A-1-C MS				
70	1070	3	5	10	Unk	160-9227-A-1-D MS				
71	1071	3	5	11	Unk	160-9227-A-2-B				
72	1072	3	5	12	Unk	160-9227-A-3-B				
73	1073	3	5	13	Unk	160-9227-A-4-B				
74	1074	3	5	14	Unk	160-9227-A-5-B				
75	1075	3	5	15	Unk	MB 160-157445/1-A				
76	1076	3	6	1	Unk	LCS 160-157445/2-				
77	1077	3	6	2	Unk	240-43772-M-1-B	DF=200			
78	1078	3	6	3	Unk	240-43772-M-1-B S	DF=1000			
79	1079	3	6	4	Unk	240-43772-M-1-C M	DF=200			
80	1080	3	6	5	Unk	240-43772-M-1-D M	DF=200			
81	1081	3	6	6	Unk	160-8836-A-11-E	DF=5			

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	11/18/2014 15:58:38	11/18/2014 15:58:38	Linear	1/Conc	-0.000566	0.780987	0.000000	1.000000
Al 396.152 { 85}	11/18/2014 15:58:38	11/18/2014 15:58:38	Linear	1/Conc	-0.005260	0.176385	0.000000	1.000000
As 189.042 {478}	11/18/2014 15:58:38	11/18/2014 15:58:38	Linear	1/Conc	0.000125	0.042138	0.000000	1.000000
B 249.678 {135}	11/18/2014 15:58:38	11/18/2014 15:58:38	Linear	1/Conc	0.000668	0.148112	0.000000	1.000000
Ba 455.403 { 74}	11/18/2014 15:58:38	11/18/2014 15:58:38	Linear	1/Conc	0.027481	14.897473	0.000000	1.000000
Be 313.042 {108}	11/18/2014 15:58:38	11/18/2014 15:58:38	Linear	1/Conc	0.001110	19.806537	0.000000	1.000000
Bi 223.061 {451}	11/18/2014 15:58:38	11/18/2014 15:58:38	Linear	1/Conc	0.000185	0.041369	0.000000	1.000000
Ca 184.006 {483}	11/18/2014 15:58:38	11/18/2014 15:58:38	Linear	1/Conc	-0.000321	0.083761	0.000000	1.000000
Cd 228.802 {447}	11/18/2014 15:58:38	11/18/2014 15:58:38	Linear	1/Conc	-0.000289	0.731411	0.000000	1.000000
Co 228.616 {448}	11/18/2014 15:58:38	11/18/2014 15:58:38	Linear	1/Conc	0.000071	0.279455	0.000000	1.000000
Cr 283.563 {119}	11/18/2014 15:58:38	11/18/2014 15:58:38	Linear	1/Conc	0.001118	0.117816	0.000000	1.000000
Cu 217.894 {455}	11/18/2014 15:58:38	11/18/2014 15:58:38	Linear	1/Conc	0.000117	0.057113	0.000000	1.000000
Fe 259.940 {130}	11/18/2014 15:58:38	11/18/2014 15:58:38	Linear	1/Conc	-0.000173	0.301448	0.000000	1.000000
K 766.490 { 44}	11/18/2014 15:58:38	11/18/2014 15:58:38	Linear	1/Conc	0.003221	0.146973	0.000000	1.000000
Li 670.784 { 50}	11/18/2014 15:58:38	11/18/2014 15:58:38	Linear	1/Conc	-0.013263	3.109158	0.000000	1.000000
Mg 279.806 {121}	11/18/2014 15:58:38	11/18/2014 15:58:38	Linear	1/Conc	0.000305	0.045624	0.000000	1.000000
Mn 257.610 {131}	11/18/2014 15:58:38	11/18/2014 15:58:38	Linear	1/Conc	0.000313	1.693553	0.000000	1.000000
Mo 202.030 {467}	11/18/2014 15:58:38	11/18/2014 15:58:38	Linear	1/Conc	-0.000084	0.281679	0.000000	1.000000
Na 589.592 { 57}	11/18/2014 15:58:38	11/18/2014 15:58:38	Linear	1/Conc	-0.030534	0.503726	0.000000	1.000000
Ni 221.647 {452}	11/18/2014 15:58:38	11/18/2014 15:58:38	Linear	1/Conc	0.000120	0.435174	0.000000	1.000000
P 177.495 {490}	11/18/2014 15:58:38	11/18/2014 15:58:38	Linear	1/Conc	-0.000116	0.052722	0.000000	1.000000
Pb 220.353 {453}	11/18/2014 15:58:38	11/18/2014 15:58:38	Linear	1/Conc	-0.000203	0.079685	0.000000	1.000000
S 182.034 {485}	11/18/2014 15:58:38	11/18/2014 15:58:38	Linear	1/Conc	0.000238	0.024466	0.000000	1.000000
Sb 206.833 {463}	11/18/2014 15:58:38	11/18/2014 15:58:38	Linear	1/Conc	0.000005	0.049907	0.000000	1.000000
Se 196.090 {472}	11/18/2014 15:58:38	11/18/2014 15:58:38	Linear	1/Conc	0.000130	0.031302	0.000000	1.000000
Si 251.611 {134}	11/18/2014 15:58:38	11/18/2014 15:58:38	Linear	1/Conc	0.001288	0.070515	0.000000	1.000000
Sn 189.989 {478}	11/18/2014 15:58:38	11/18/2014 15:58:38	Linear	1/Conc	0.000097	0.092268	0.000000	1.000000
Sr 407.771 { 83}	11/18/2014 15:58:38	11/18/2014 15:58:38	Linear	1/Conc	-0.007445	23.951080	0.000000	1.000000
Th 283.231 {119}	11/18/2014 15:58:38	11/18/2014 15:58:38	Linear	1/Conc	0.001552	0.066830	0.000000	1.000000
Ti 334.941 {101}	11/18/2014 15:58:38	11/18/2014 15:58:38	Linear	1/Conc	0.005168	1.360236	0.000000	1.000000
Tl 190.856 {477}	11/18/2014 15:58:38	11/18/2014 15:58:38	Linear	1/Conc	-0.000268	0.049769	0.000000	1.000000
U 367.007 { 92}	11/18/2014 15:58:38	11/18/2014 15:58:38	Linear	1/Conc	0.031410	0.043452	0.000000	1.000000
V 290.882 {116}	11/18/2014 15:58:38	11/18/2014 15:58:38	Linear	1/Conc	0.002717	0.279795	0.000000	1.000000
Y 371.030 { 91}*	11/18/2014 15:58:38	11/18/2014 15:58:38	Linear	1/Conc	1.000000	0.000000	0.000000	1.000000
Zn 213.856 {458}	11/18/2014 15:58:38	11/18/2014 15:58:38	Linear	1/Conc	0.000192	0.387039	0.000000	1.000000

Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.999931	0.000072	0.001026	0.003421	OK.	1.000000	0.000000	1	0
Al 396.152 { 85}	0.999964	0.000365	0.009261	0.030871	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999815	0.000014	0.002045	0.006816	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999254	0.000312	0.003315	0.011052	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999935	0.006603	0.000156	0.000520	OK.	1.000000	0.000000	1	0
Be 313.042 {108}	0.999995	0.000787	0.000040	0.000132	OK.	1.000000	0.000000	1	0
Bi 223.061 {451}	0.999690	0.000080	0.003597	0.011989	OK.	1.000000	0.000000	1	0
Ca 184.006 {483}	0.999585	0.001325	0.001021	0.003402	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.999770	0.000192	0.000200	0.000667	OK.	1.000000	0.000000	1	0
Co 228.616 {448}	0.999589	0.000311	0.000417	0.001390	OK.	1.000000	0.000000	1	0
Cr 283.563 {119}	0.999967	0.000017	0.001366	0.004554	OK.	1.000000	0.000000	1	0
Cu 217.894 {455}	0.999716	0.000037	0.002431	0.008105	OK.	1.000000	0.000000	1	0
Fe 259.940 {130}	0.999984	0.000296	0.001643	0.005477	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999993	0.000671	0.025573	0.085245	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	1.000000	0.000042	0.001192	0.003975	OK.	1.000000	0.000000	1	0
Mg 279.806 {121}	0.999978	0.000166	0.011336	0.037788	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999998	0.000070	0.000288	0.000960	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999747	0.000099	0.000372	0.001238	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	1.000000	0.000245	0.007438	0.024794	OK.	1.000000	0.000000	1	0
Ni 221.647 {452}	0.999594	0.000430	0.000368	0.001228	OK.	1.000000	0.000000	1	0
P 177.495 {490}	0.999486	0.000463	0.001644	0.005479	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.999646	0.000037	0.001687	0.005622	OK.	1.000000	0.000000	1	0
S 182.034 {485}	0.999851	0.000526	0.003364	0.011214	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999848	0.000007	0.002636	0.008785	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.999880	0.000005	0.003152	0.010506	OK.	1.000000	0.000000	1	0
Si 251.611 {134}	0.999951	0.000077	0.006450	0.021500	OK.	1.000000	0.000000	1	0
Sn 189.989 {478}	0.999659	0.000132	0.000849	0.002829	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999999	0.000328	0.000062	0.000207	OK.	1.000000	0.000000	1	0
Th 283.231 {119}	0.999996	0.000014	0.005661	0.018871	OK.	1.000000	0.000000	1	0
Ti 334.941 {101}	0.999995	0.000106	0.000728	0.002428	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999339	0.000020	0.002003	0.006676	OK.	1.000000	0.000000	1	0
U 367.007 { 92}	0.999852	0.000110	0.022756	0.075853	OK.	1.000000	0.000000	1	0
V 290.882 {116}	0.999982	0.000065	0.002761	0.009203	OK.	1.000000	0.000000	1	0
Y 371.030 { 91}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 213.856 {458}	0.999697	0.000236	0.000222	0.000741	OK.	1.000000	0.000000	1	0

Sample Name: CALBLK1 Acquired: 11/18/2014 15:43:21 Type: Cal
Method: 2014v3(v299) Mode: IR Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.0006**	**-.0053**	**.0001**	**.0007**	**.0275**	**.0011**	**.0002**	**-.0003**	**-.0003**
Stddev	.0010	.0016	.0001	.0001	.0026	.0004	.0001	.0001	.0001
%RSD	184.4	30.47	74.92	20.27	9.544	35.48	76.29	31.06	27.18
#1	-.0014	-.0035	.0002	.0008	.0274	.0010	.0003	-.0004	-.0003
#2	-.0009	-.0067	.0001	.0006	.0249	.0015	.0000	-.0004	-.0004
#3	.0006	-.0056	.0000	.0006	.0301	.0008	.0002	-.0002	-.0002

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.0001**	**.0011**	**.0001**	**-.0002**	**.0032**	**-.0133**	**.0003**	**.0003**	**-.0001**
Stddev	.0001	.0003	.0001	.0001	.0034	.0025	.0003	.0009	.0000
%RSD	212.3	24.03	60.78	75.50	106.4	19.22	114.3	281.8	43.09
#1	.0002	.0009	.0002	.0000	.0071	-.0144	.0005	-.0004	-.0001
#2	-.0001	.0010	.0001	-.0002	.0019	-.0150	-.0001	.0001	.0000
#3	.0001	.0014	.0001	-.0003	.0006	-.0103	.0005	.0013	-.0001

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.0305**	**.0001**	**-.0001**	**-.0002**	**.0002**	**.0000**	**.0001**	**.0013**	**.0001**
Stddev	.0016	.0003	.0000	.0002	.0001	.0002	.0001	.0003	.0001
%RSD	5.112	255.5	3.366	91.72	53.04	4861.	100.4	24.70	94.01
#1	-.0287	.0005	-.0001	.0000	.0003	.0002	.0000	.0012	.0000
#2	-.0316	.0000	-.0001	-.0003	.0001	.0000	.0001	.0016	.0002
#3	-.0313	-.0001	-.0001	-.0003	.0003	-.0002	.0003	.0010	.0001

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.0074**	**.0016**	**.0052**	**-.0003**	**.0314**	**.0027**	**.0002**
Stddev	.0005	.0004	.0007	.0001	.0009	.0003	.0001
%RSD	6.787	26.51	14.07	33.44	2.878	9.427	41.25
#1	-.0079	.0014	.0060	-.0003	.0314	.0024	.0001
#2	-.0069	.0013	.0047	-.0003	.0323	.0029	.0003
#3	-.0075	.0020	.0048	-.0002	.0305	.0028	.0002

Sample Name: CALBLK1 Acquired: 11/18/2014 15:43:21 Type: Cal
Method: 2014v3(v299) Mode: IR Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_3710
Units	Cts/S
Avg	3858.9
Stddev	30.7
%RSD	.79512
#1	3875.2
#2	3878.0
#3	3823.5

Sample Name: CAL 1 Acquired: 11/18/2014 15:47:16 Type: Cal
Method: 2014v3(v299) Mode: IR Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.0066**	**.0307**	**.0003**	**.0085**	**.7842**	**.1039**	**.0090**	**.0955**	**.0034**
Stddev	.0003	.0019	.0001	.0003	.0041	.0011	.0002	.0013	.0002
%RSD	5.188	6.134	15.89	3.016	.5249	1.093	1.916	1.409	4.440
#1	.0065	.0326	.0003	.0082	.7800	.1028	.0092	.0971	.0036
#2	.0070	.0307	.0003	.0085	.7882	.1050	.0089	.0945	.0033
#3	.0064	.0289	.0004	.0088	.7844	.1039	.0089	.0950	.0034

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.0157**	**.0021**	**.0017**	**.0319**	**.7277**	**.1417**	**.0451**	**.0265**	**.0117**
Stddev	.0003	.0002	.0001	.0006	.0042	.0015	.0003	.0006	.0003
%RSD	1.714	7.949	6.764	1.729	.5709	1.065	.6264	2.270	2.276
#1	.0160	.0023	.0017	.0319	.7236	.1433	.0451	.0260	.0120
#2	.0155	.0020	.0018	.0313	.7319	.1404	.0449	.0262	.0116
#3	.0156	.0021	.0016	.0325	.7275	.1413	.0454	.0272	.0116

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.4729**	**.0198**	**.0134**	**.0006**	**.1247**	**.0005**	**.0006**	**.0278**	**.0100**
Stddev	.0003	.0004	.0002	.0001	.0018	.0001	.0000	.0003	.0001
%RSD	.0663	1.883	1.610	17.99	1.462	23.00	5.491	1.178	.5454
#1	.4728	.0202	.0137	.0005	.1268	.0004	.0006	.0282	.0101
#2	.4733	.0198	.0132	.0006	.1233	.0006	.0006	.0277	.0100
#3	.4727	.0194	.0134	.0007	.1241	.0005	.0006	.0275	.0100

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.1165**	**.0146**	**.0329**	**.0009**	**.0567**	**.0156**	**.0086**
Stddev	.0015	.0004	.0007	.0000	.0020	.0004	.0001
%RSD	1.284	2.801	1.996	4.153	3.485	2.409	1.191
#1	.1149	.0145	.0330	.0009	.0585	.0155	.0087
#2	.1169	.0143	.0321	.0009	.0546	.0160	.0085
#3	.1178	.0151	.0334	.0009	.0571	.0152	.0086

Sample Name: CAL 1 Acquired: 11/18/2014 15:47:16 Type: Cal
Method: 2014v3(v299) Mode: IR Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_3710
Units	Cts/S
Avg	3857.3
Stddev	33.4
%RSD	.86458
#1	3832.4
#2	3895.2
#3	3844.4

Sample Name: Cal 2 Acquired: 11/18/2014 15:51:11 Type: Cal
Method: 2014v3(v299) Mode: IR Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.7952	8.715	.2152	.7395	75.71	99.45	.2139	4.340	3.771
Stddev	.0055	.021	.0034	.0021	.25	1.43	.0029	.058	.054
%RSD	.6905	.2361	1.591	.2838	.3236	1.442	1.360	1.343	1.436
#1	.7890	8.707	.2116	.7377	75.67	100.5	.2112	4.289	3.722
#2	.7994	8.700	.2184	.7388	75.49	100.0	.2170	4.404	3.829
#3	.7971	8.739	.2158	.7418	75.98	97.82	.2134	4.327	3.761

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1.454	.6021	.2952	15.19	7.328	15.53	2.252	8.488	.2902
Stddev	.022	.0046	.0043	.03	.014	.06	.005	.020	.0045
%RSD	1.482	.7697	1.457	.1962	.1931	.3765	.2394	.2346	1.535
#1	1.435	.5969	.2914	15.15	7.324	15.51	2.246	8.465	.2858
#2	1.477	.6059	.2998	15.20	7.316	15.47	2.255	8.498	.2947
#3	1.451	.6036	.2943	15.21	7.344	15.59	2.255	8.501	.2900

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	25.19	2.261	2.755	.4134	1.253	.0518	.0319	.3543	.4779
Stddev	.07	.036	.040	.0060	.021	.0007	.0007	.0007	.0074
%RSD	.2627	1.589	1.442	1.463	1.715	1.408	2.248	.1999	1.539
#1	25.21	2.227	2.717	.4078	1.232	.0511	.0312	.3540	.4707
#2	25.11	2.298	2.796	.4198	1.275	.0526	.0326	.3538	.4854
#3	25.24	2.257	2.753	.4128	1.252	.0517	.0321	.3551	.4774

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	120.0	.3376	6.836	.0532	.2890	1.411	2.022
Stddev	1.8	.0037	.023	.0008	.0026	.002	.030
%RSD	1.512	1.107	.3319	1.474	.9029	.1127	1.499
#1	118.8	.3344	6.825	.0524	.2865	1.411	1.995
#2	122.1	.3417	6.821	.0539	.2917	1.410	2.055
#3	119.1	.3367	6.862	.0532	.2889	1.413	2.017

Sample Name: Cal 2 Acquired: 11/18/2014 15:51:11 Type: Cal
Method: 2014v3(v299) Mode: IR Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_3710
Units	Cts/S
Avg	3715.9
Stddev	29.7
%RSD	.80007
#1	3736.0
#2	3681.8
#3	3729.9

Sample Name: Cal 3 Acquired: 11/18/2014 15:54:56 Type: Cal
Method: 2014v3(v299) Mode: IR Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1.568**	**17.75**	**.4170**	**1.475**	**147.8**	**197.6**	**.4065**	**8.211**	**7.209**
Stddev	.037	.07	.0062	.004	4.1	5.3	.0066	.122	.113
%RSD	2.361	.3792	1.497	.2753	2.790	2.664	1.612	1.486	1.566
#1	1.608	17.68	.4236	1.470	150.5	202.7	.4136	8.346	7.330
#2	1.559	17.78	.4162	1.478	143.0	192.2	.4052	8.182	7.189
#3	1.535	17.80	.4112	1.477	149.9	197.8	.4007	8.107	7.107

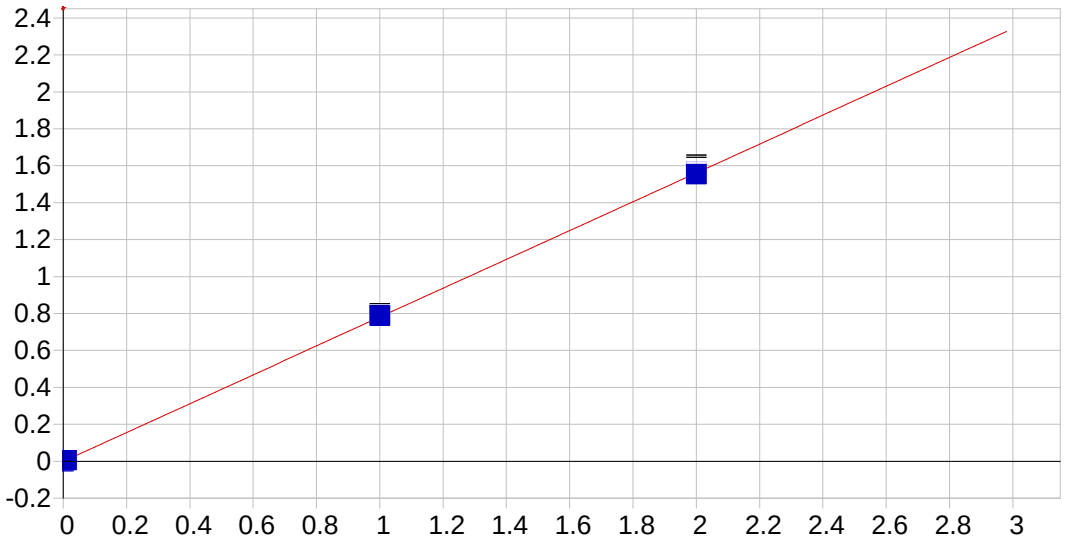
Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2.743**	**1.183**	**.5617**	**30.03**	**14.73**	**31.09**	**4.567**	**16.92**	**.5542**
Stddev	.045	.029	.0087	.03	.04	.15	.010	.02	.0093
%RSD	1.629	2.410	1.555	.0975	.2543	.4676	.2194	.1030	1.685
#1	2.793	1.213	.5713	30.02	14.69	30.93	4.576	16.91	.5644
#2	2.729	1.181	.5594	30.06	14.74	31.10	4.556	16.90	.5520
#3	2.706	1.156	.5542	30.00	14.77	31.22	4.570	16.94	.5461

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**50.31**	**4.265**	**5.152**	**.7822**	**2.416**	**.0999**	**.0617**	**.7077**	**.9057**
Stddev	.18	.069	.079	.0126	.039	.0017	.0012	.0023	.0153
%RSD	.3622	1.614	1.525	1.613	1.628	1.668	1.900	.3183	1.691
#1	50.10	4.341	5.237	.7959	2.457	.1016	.0630	.7053	.9222
#2	50.39	4.248	5.137	.7797	2.410	.0998	.0616	.7081	.9030
#3	50.44	4.206	5.082	.7710	2.379	.0982	.0606	.7098	.8919

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**239.5**	**.6700**	**13.58**	**.0992**	**.5421**	**2.805**	**3.841**
Stddev	5.7	.0178	.04	.0017	.0163	.008	.063
%RSD	2.399	2.661	.3188	1.702	3.012	.2775	1.648
#1	246.0	.6902	13.53	.1011	.5594	2.798	3.911
#2	235.1	.6637	13.61	.0988	.5400	2.805	3.824
#3	237.2	.6562	13.59	.0978	.5269	2.813	3.788

Sample Name: Cal 3 Acquired: 11/18/2014 15:54:56 Type: Cal
Method: 2014v3(v299) Mode: IR Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_3710
Units	Cts/S
Avg	3745.8
Stddev	72.9
%RSD	1.9473
#1	3662.0
#2	3780.2
#3	3795.2

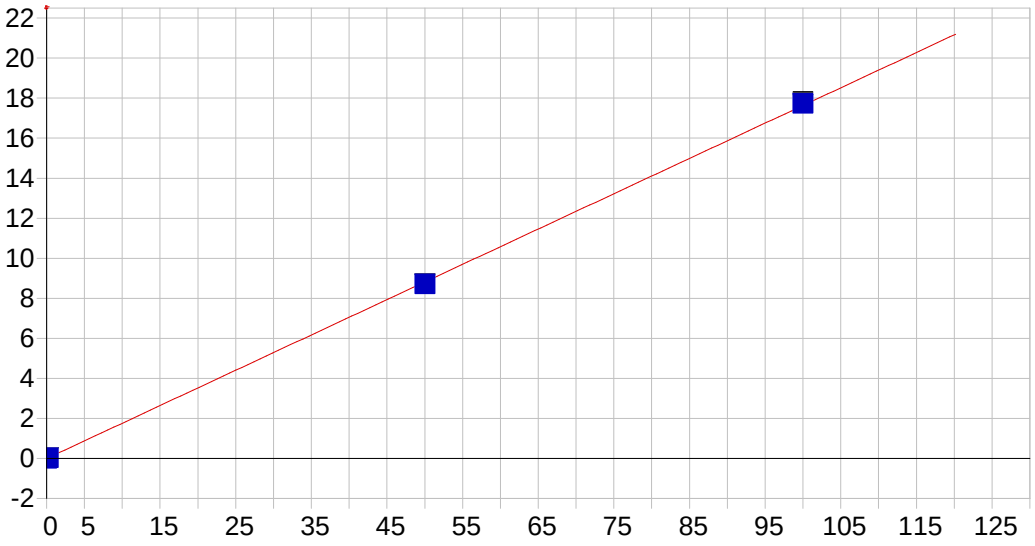


Ag 328.068 {103}

Date of Fit:	11/18/2014 15:58:38	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000566	Re-Slope:	1.000000
A1 (Gain):	0.780987	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999931	Status:	OK.
Std Error of Est:	0.000072		
Predicted MDL:	0.001026		
Predicted MQL:	0.003421		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	-.00056	.001	1
CAL 1	.01000	.00834	-.002	-16.6	.00660	.000	1
Cal 2	1.0000	1.0106	.011	1.06	.79517	.005	1
Cal 3	2.0000	1.9912	-.009	-.440	1.5675	.037	1



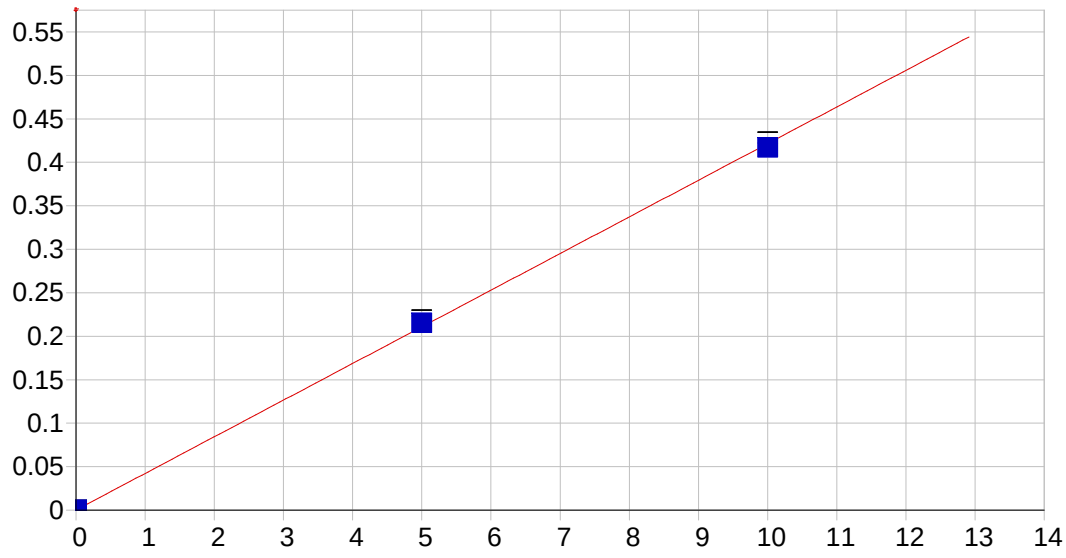
Al 396.152 { 85}

Date of Fit:	11/18/2014 15:58:38	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.005260	Re-Slope:	1.000000

A1 (Gain):	0.176385			Y-int:	0.000000
A2 (Curvature):	0.000000				
n (Exponent):	1.000000				
Correlation:	0.999964		Status:	OK.	
Std Error of Est:	0.000365				
Predicted MDL:	0.009261				
Predicted MQL:	0.030871				

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	-.00526	.002	1
CAL 1	.20000	.20245	.002	1.22	.03073	.002	1
Cal 2	50.000	49.402	-.598	-1.20	8.7154	.021	1
Cal 3	100.00	100.60	.596	.596	17.752	.067	1

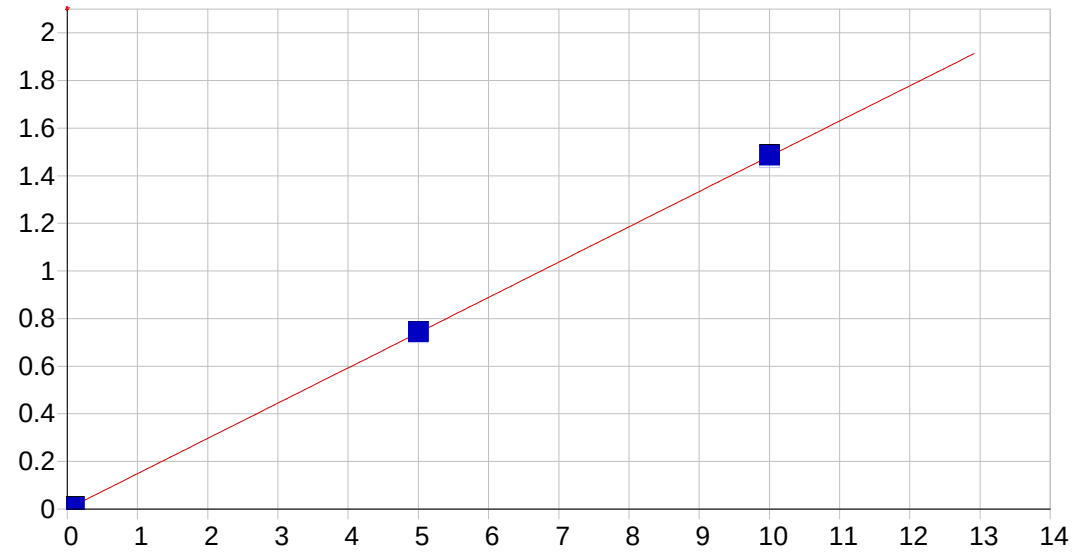


As 189.042 {478}

Date of Fit:	11/18/2014 15:58:38	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000125	Re-Slope:	1.000000
A1 (Gain):	0.042138	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999815	Status:	OK.
Std Error of Est:	0.000014		
Predicted MDL:	0.002045		
Predicted MQL:	0.006816		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00012	.000	1
CAL 1	.01000	.00531	-.005	-46.9	.00035	.000	1
Cal 2	5.0000	5.1073	.107	2.15	.21525	.003	1
Cal 3	10.000	9.8974	-.103	-1.03	.41701	.006	1

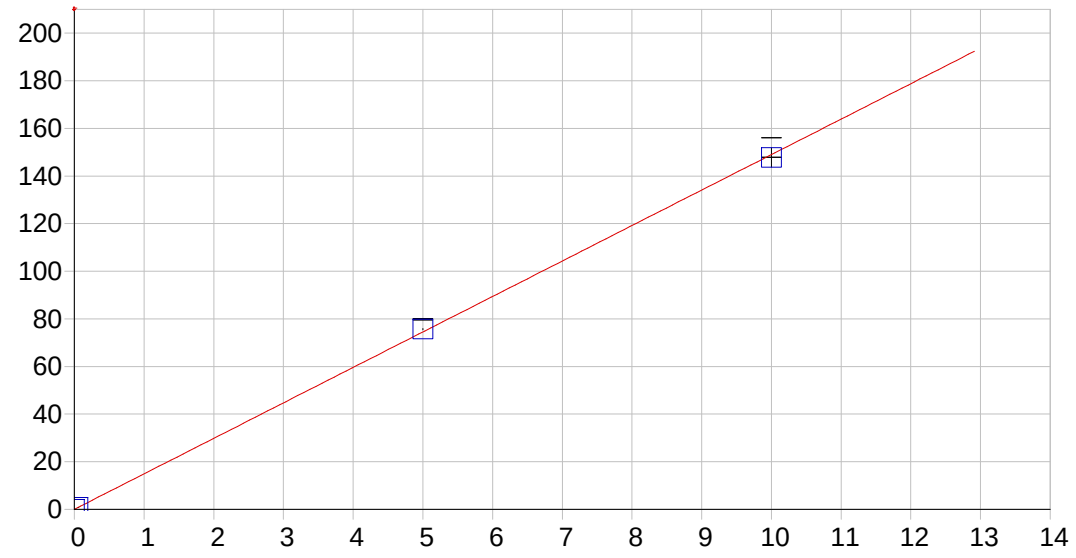


B 249.678 {135}

Date of Fit:	11/18/2014 15:58:38	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000668	Re-Slope:	1.000000
A1 (Gain):	0.148112	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999254	Status:	OK.
Std Error of Est:	0.000312		
Predicted MDL:	0.003315		
Predicted MQL:	0.011052		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00005	.000	.000	.00067	.000	1
CAL 1	.10000	.05303	-.047	-47.0	.00851	.000	1
Cal 2	5.0000	5.0229	.023	.458	.73946	.002	1
Cal 3	10.000	10.024	.024	.244	1.4751	.004	1



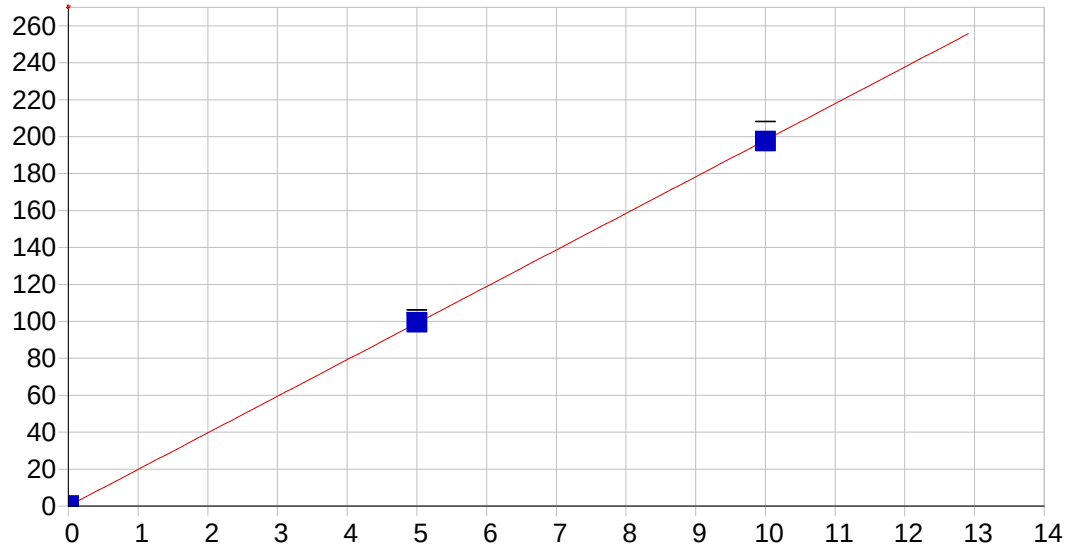
Ba 455.403 { 74}

Date of Fit:	11/18/2014 15:58:38	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.027481	Re-Slope:	1.000000
A1 (Gain):	14.897473	Y-int:	0.000000

A2 (Curvature):		0.000000					
n (Exponent):		1.000000					
Correlation:		0.999935		Status:	OK.		
Std Error of Est:		0.006603					
Predicted MDL:		0.000156					
Predicted MQL:		0.000520					

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.02746	.003	1
CAL 1	.05000	.05080	.001	1.59	.78421	.004	1
Cal 2	5.0000	5.0804	.080	1.61	75.713	.245	1
Cal 3	10.000	9.9188	-.081	-.812	147.79	4.12	1

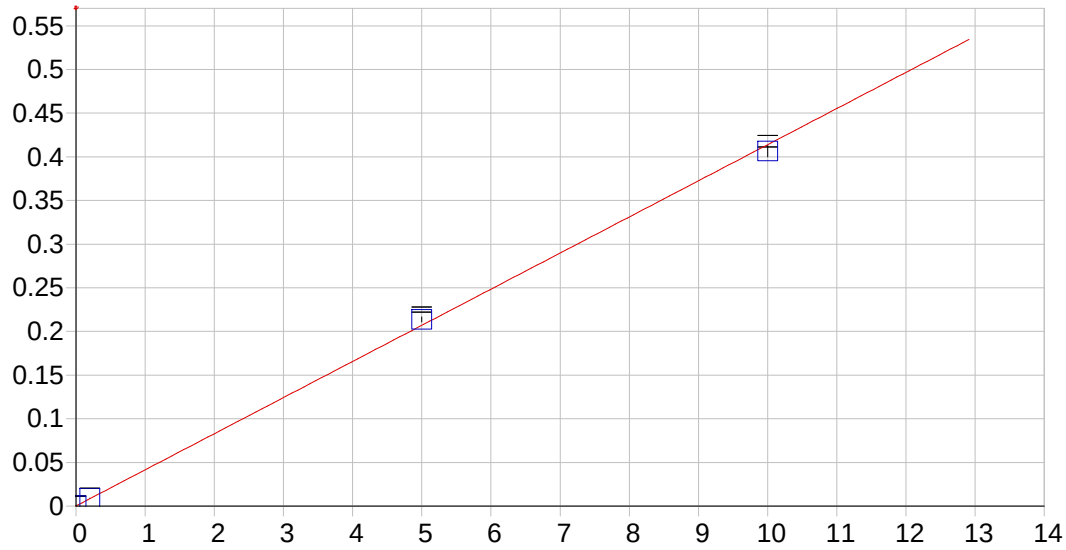


Be 313.042 {108}

Date of Fit:	11/18/2014 15:58:38	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.001110	Re-Slope:	1.000000
A1 (Gain):	19.806537	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999995	Status:	OK.
Std Error of Est:	0.000787		
Predicted MDL:	0.000040		
Predicted MQL:	0.000132		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00111	.000	1
CAL 1	.00500	.00520	.000	3.92	.10390	.001	1
Cal 2	5.0000	5.0223	.022	.446	99.446	1.43	1
Cal 3	10.000	9.9775	-.023	-.225	197.56	5.26	1

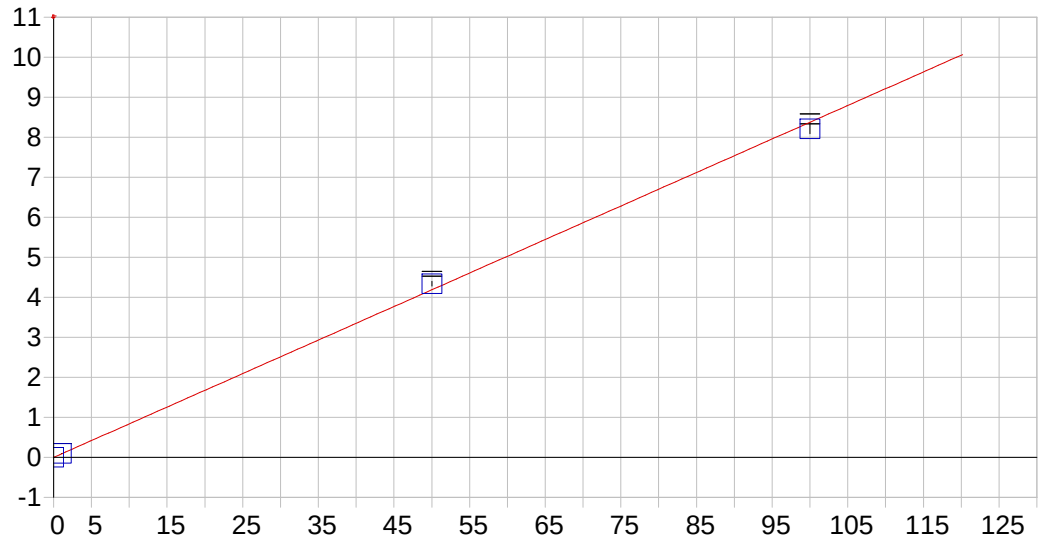


Bi 223.061 {451}

Date of Fit:	11/18/2014 15:58:38	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000185	Re-Slope:	1.000000
A1 (Gain):	0.041369	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999690	Status:	OK.
Std Error of Est:	0.000080		
Predicted MDL:	0.003597		
Predicted MQL:	0.011989		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	-.00002	.000	.000	.00018	.000	1
CAL 1	.20000	.21274	.013	6.37	.00899	.000	1
Cal 2	5.0000	5.1651	.165	3.30	.21386	.003	1
Cal 3	10.000	9.8222	-.178	-1.78	.40652	.007	1



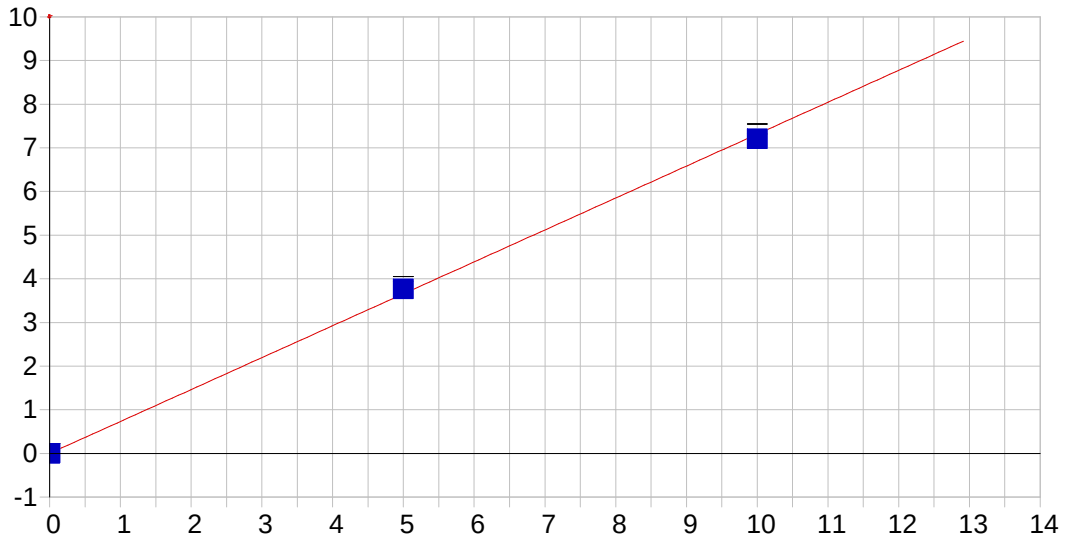
Ca 184.006 {483}

Date of Fit:	11/18/2014 15:58:38	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000321	Re-Slope:	1.000000
A1 (Gain):	0.083761	Y-int:	0.000000

A2 (Curvature):	0.000000					
n (Exponent):	1.000000					
Correlation:	0.999585		Status:	OK.		
Std Error of Est:	0.001325					
Predicted MDL:	0.001021					
Predicted MQL:	0.003402					

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	-.00016	.000	.000	-.00033	.000	1
CAL 1	1.0000	1.1443	.144	14.4	.09553	.001	1
Cal 2	50.000	51.817	1.82	3.63	4.3399	.058	1
Cal 3	100.00	98.039	-1.96	-1.96	8.2115	.122	1

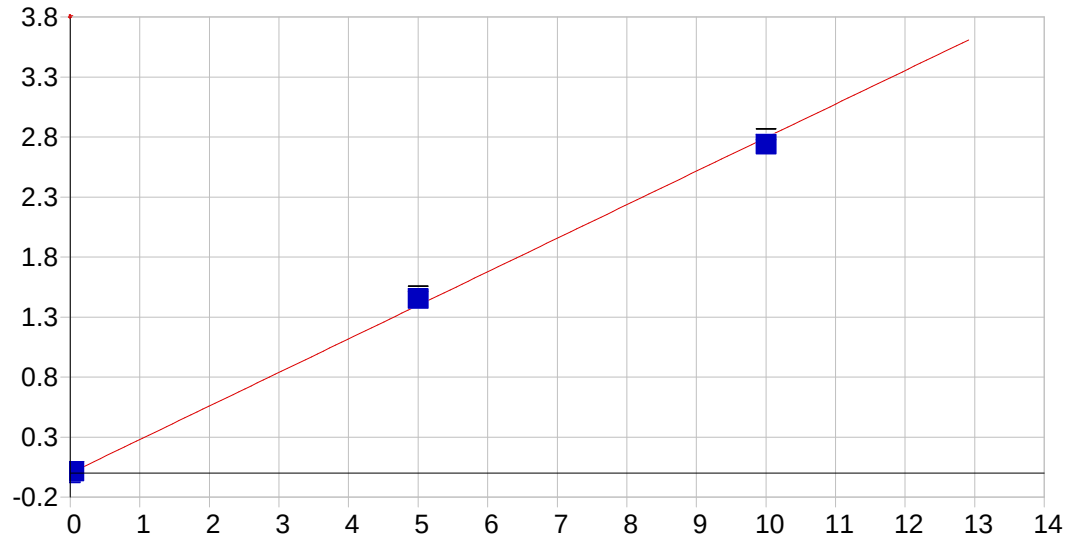


Cd 228.802 {447}

Date of Fit:	11/18/2014 15:58:38	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000289	Re-Slope:	1.000000
A1 (Gain):	0.731411	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999770	Status:	OK.
Std Error of Est:	0.000192		
Predicted MDL:	0.000200		
Predicted MQL:	0.000667		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	-.00029	.000	1
CAL 1	.00500	.00514	.000	2.83	.00342	.000	1
Cal 2	5.0000	5.1516	.152	3.03	3.7706	.054	1
Cal 3	10.000	9.8483	-.152	-1.52	7.2087	.113	1

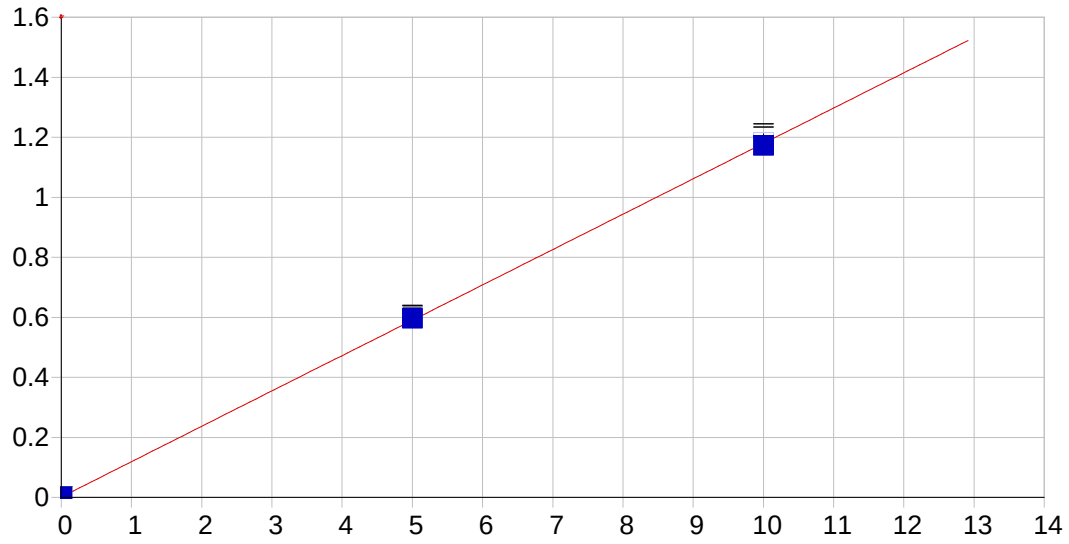


Co 228.616 {448}

Date of Fit:	11/18/2014 15:58:38	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000071	Re-Slope:	1.000000
A1 (Gain):	0.279455	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999589	Status:	OK.
Std Error of Est:	0.000311		
Predicted MDL:	0.000417		
Predicted MQL:	0.001390		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	-.00001	.000	.000	.00007	.000	1
CAL 1	.05000	.05583	.006	11.7	.01568	.000	1
Cal 2	5.0000	5.1958	.196	3.92	1.4543	.022	1
Cal 3	10.000	9.7983	-.202	-2.02	2.7428	.045	1



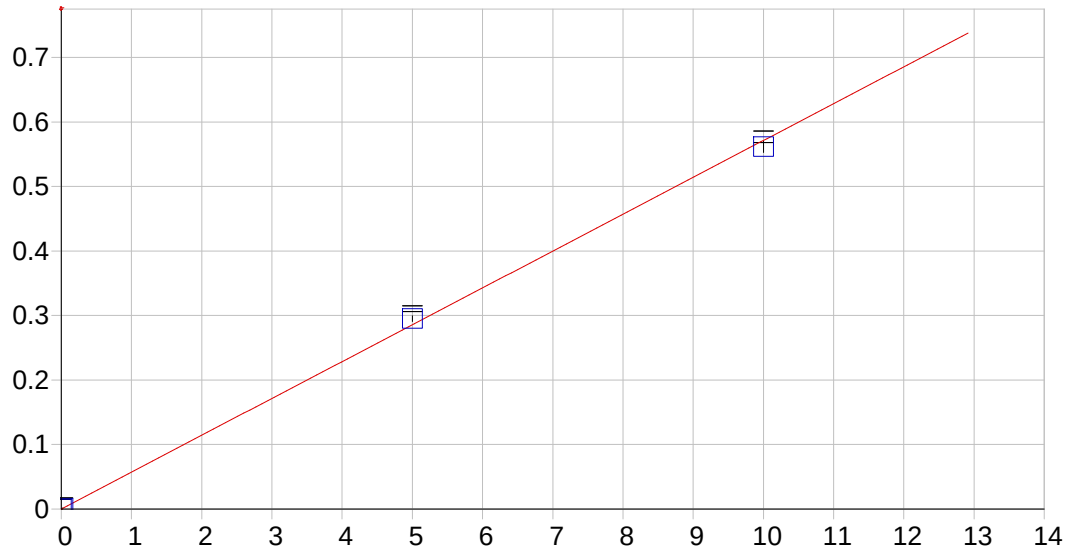
Cr 283.563 {119}

Date of Fit:	11/18/2014 15:58:38	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.001118	Re-Slope:	1.000000
A1 (Gain):	0.117816	Y-int:	0.000000

A2 (Curvature):		0.000000					
n (Exponent):		1.000000					
Correlation:		0.999967		Status:	OK.		
Std Error of Est:		0.000017					
Predicted MDL:		0.001366					
Predicted MQL:		0.004554					

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00112	.000	1
CAL 1	.01000	.00909	-.001	-9.09	.00213	.000	1
Cal 2	5.0000	5.0561	.056	1.12	.60213	.005	1
Cal 3	10.000	9.9448	-.055	-.552	1.1834	.029	1

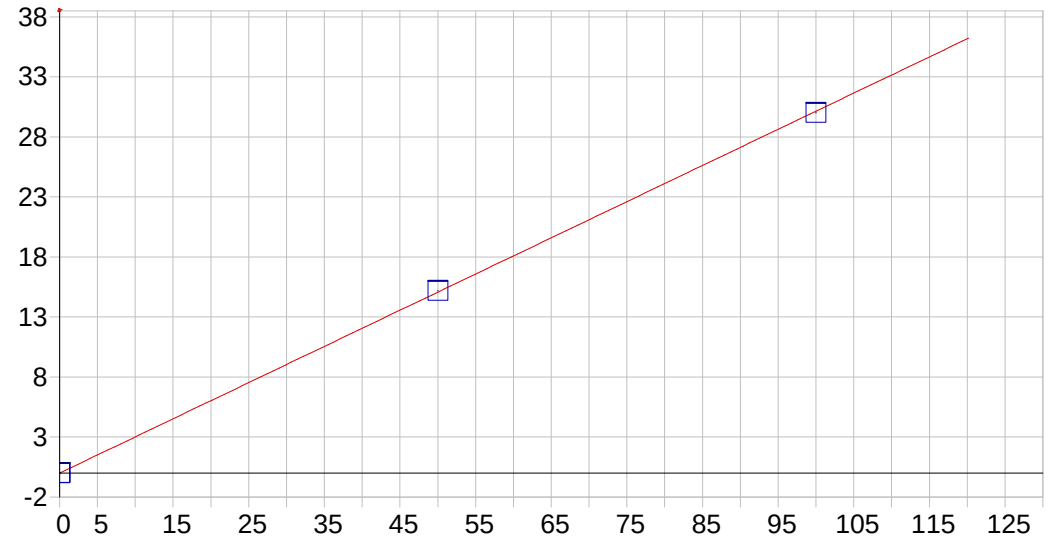


Cu 217.894 {455}

Date of Fit:	11/18/2014 15:58:38	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000117	Re-Slope:	1.000000
A1 (Gain):	0.057113	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999716	Status:	OK.
Std Error of Est:	0.000037		
Predicted MDL:	0.002431		
Predicted MQL:	0.008105		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00012	.000	1
CAL 1	.02500	.02728	.002	9.13	.00167	.000	1
Cal 2	5.0000	5.1658	.166	3.32	.29515	.004	1
Cal 3	10.000	9.8319	-.168	-1.68	.56165	.009	1

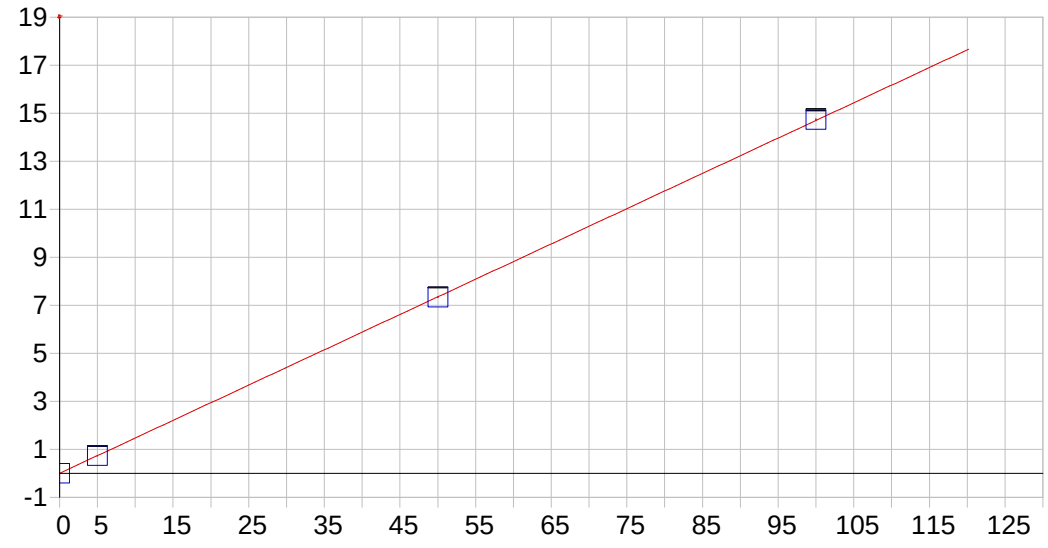


Fe 259.940 {130}

Date of Fit:	11/18/2014 15:58:38	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000173	Re-Slope:	1.000000
A1 (Gain):	0.301448	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999984	Status:	OK.
Std Error of Est:	0.000296		
Predicted MDL:	0.001643		
Predicted MQL:	0.005477		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	-.00001	.000	.000	-.00017	.000	1
CAL 1	.10000	.10639	.006	6.39	.03190	.001	1
Cal 2	50.000	50.382	.382	.763	15.187	.030	1
Cal 3	100.00	99.612	-.388	-.388	30.028	.029	1



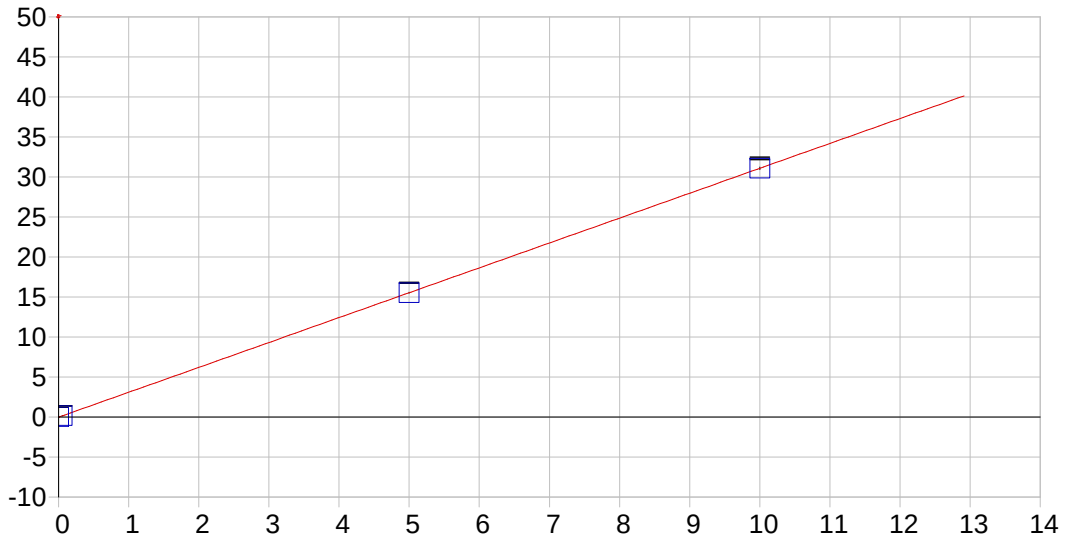
K 766.490 { 44}

Date of Fit:	11/18/2014 15:58:38	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.003221	Re-Slope:	1.000000
A1 (Gain):	0.146973	Y-int:	0.000000

A2 (Curvature):		0.000000					
n (Exponent):		1.000000					
Correlation:		0.999993		Status:	OK.		
Std Error of Est:		0.000671					
Predicted MDL:		0.025573					
Predicted MQL:		0.085245					

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00008	.000	.000	.00323	.003	1
CAL 1	5.0000	4.9291	-.071	-1.42	.72766	.004	1
Cal 2	50.000	49.837	-.163	-.326	7.3279	.014	1
Cal 3	100.00	100.23	.234	.234	14.735	.037	1

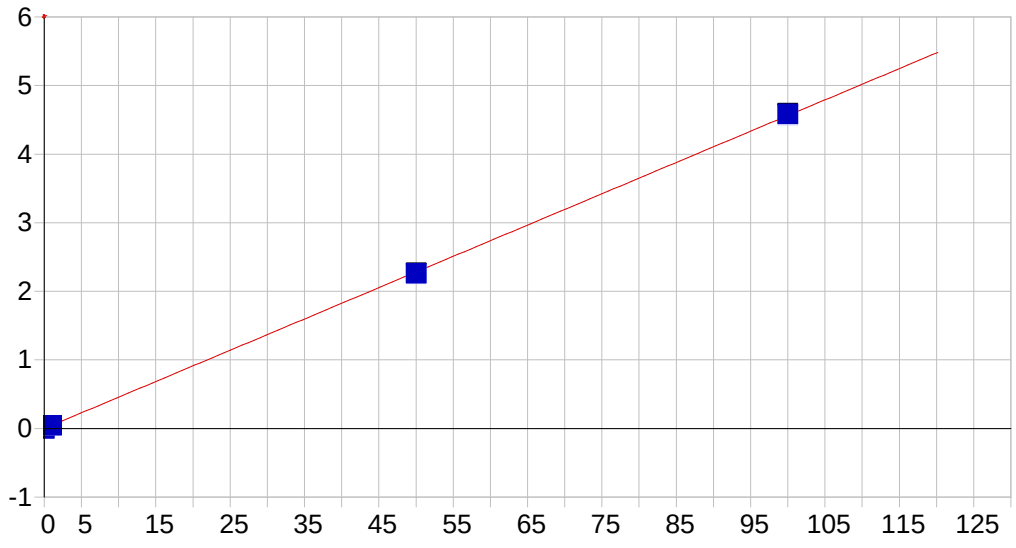


Li 670.784 { 50}

Date of Fit:	11/18/2014 15:58:38	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.013263	Re-Slope:	1.000000
A1 (Gain):	3.109158	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	1.000000	Status:	OK.
Std Error of Est:	0.000042		
Predicted MDL:	0.001192		
Predicted MQL:	0.003975		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	-.01326	.003	1
CAL 1	.05000	.04983	.000	-.337	.14167	.002	1
Cal 2	5.0000	4.9980	-.002	-.040	15.526	.058	1
Cal 3	10.000	10.002	.002	.022	31.085	.145	1

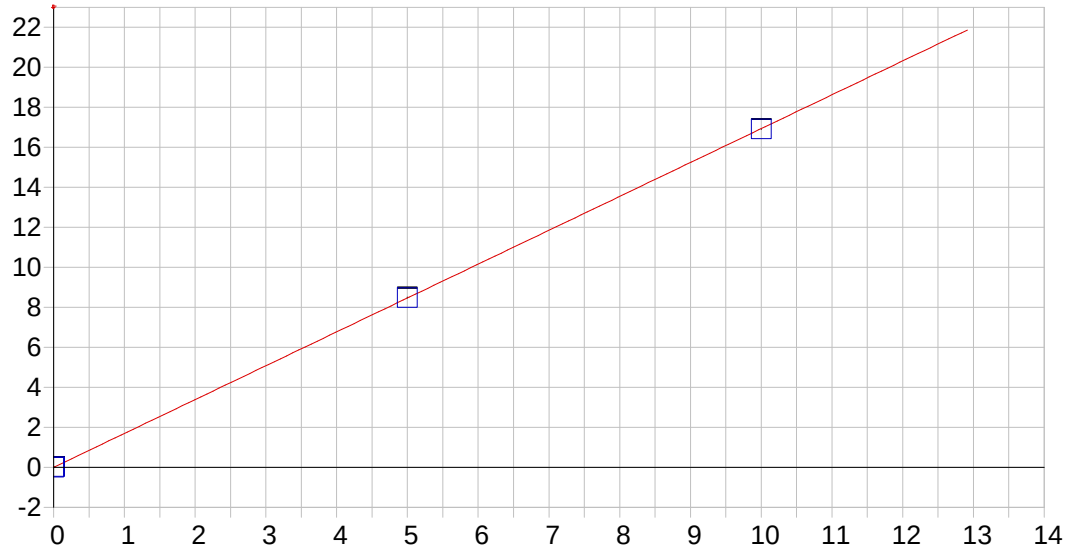


Mg 279.806 {121}

Date of Fit:	11/18/2014 15:58:38	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000305	Re-Slope:	1.000000
A1 (Gain):	0.045624	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999978	Status:	OK.
Std Error of Est:	0.000166		
Predicted MDL:	0.011336		
Predicted MQL:	0.037788		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00001	.000	.000	.00031	.000	1
CAL 1	1.0000	.99007	-.010	-.993	.04514	.000	1
Cal 2	50.000	49.536	-.464	-.927	2.2520	.005	1
Cal 3	100.00	100.47	.473	.473	4.5675	.010	1



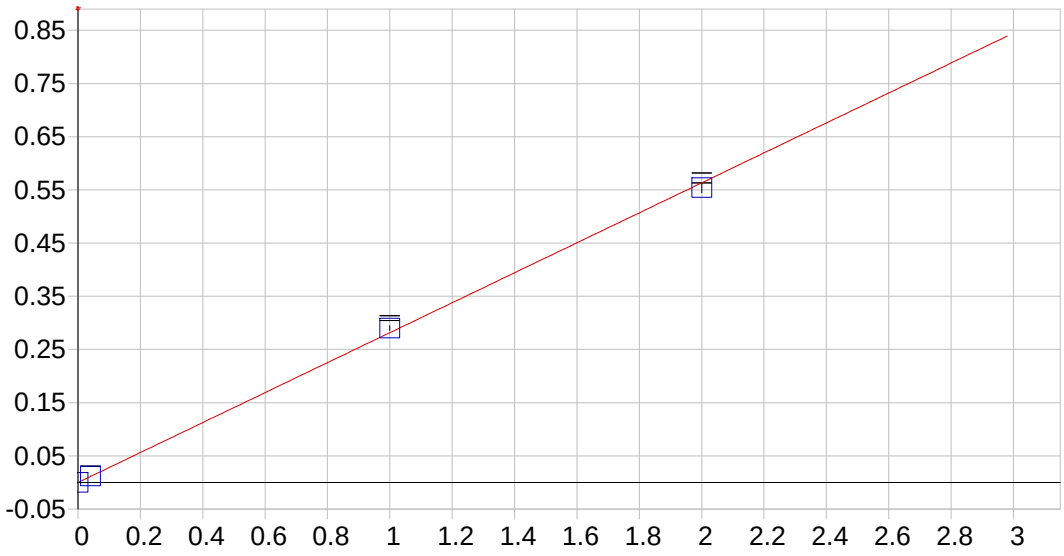
Mn 257.610 {131}

Date of Fit:	11/18/2014 15:58:38	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000313	Re-Slope:	1.000000
A1 (Gain):	1.693553	Y-int:	0.000000

A2 (Curvature):		0.000000					
n (Exponent):		1.000000					
Correlation:		0.999998		Status:	OK.		
Std Error of Est:		0.000070					
Predicted MDL:		0.000288					
Predicted MQL:		0.000960					

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00031	.001	1
CAL 1	.01500	.01545	.000	3.01	.02648	.001	1
Cal 2	5.0000	5.0118	.012	.235	8.4880	.020	1
Cal 3	10.000	9.9878	-.012	-.122	16.915	.017	1

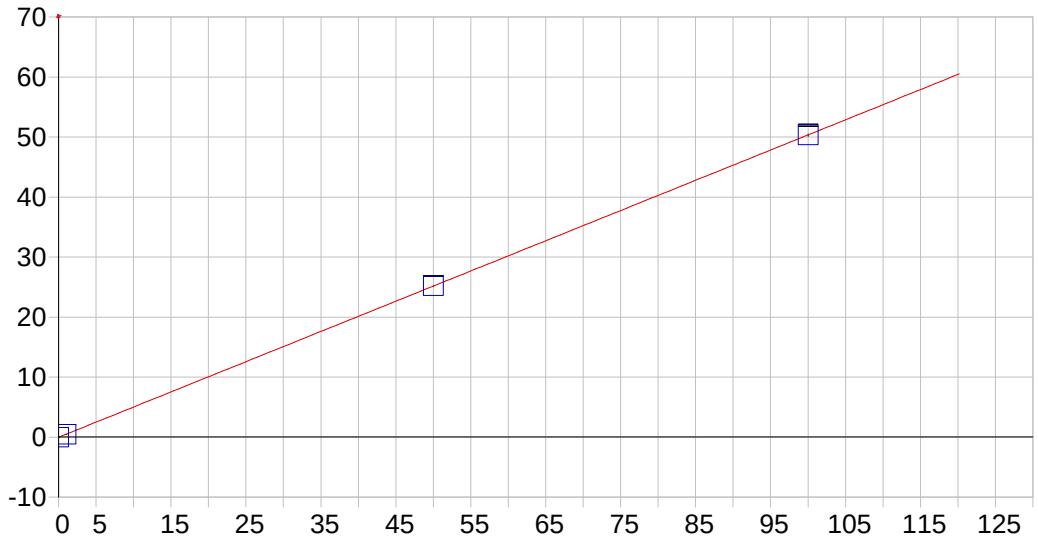


Mo 202.030 {467}

Date of Fit:	11/18/2014 15:58:38	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000084	Re-Slope:	1.000000
A1 (Gain):	0.281679	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999747	Status:	OK.
Std Error of Est:	0.000099		
Predicted MDL:	0.000372		
Predicted MQL:	0.001238		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	-.00008	.000	1
CAL 1	.04000	.04188	.002	4.71	.01171	.000	1
Cal 2	1.0000	1.0305	.030	3.05	.29018	.004	1
Cal 3	2.0000	1.9676	-.032	-1.62	.55416	.009	1

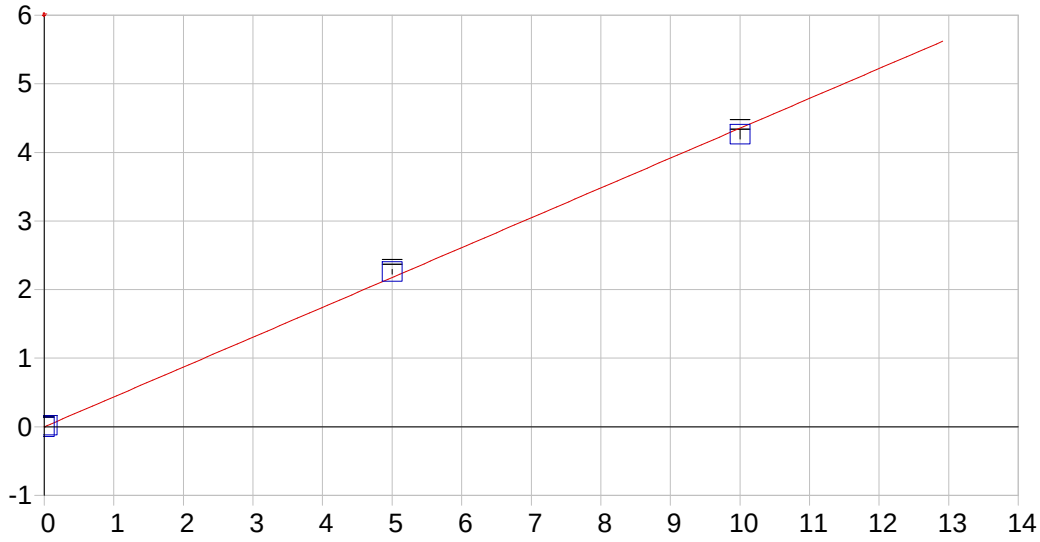


Na 589.592 { 57}

Date of Fit:	11/18/2014 15:58:38	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.030534	Re-Slope:	1.000000
A1 (Gain):	0.503726	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	1.000000	Status:	OK.
Std Error of Est:	0.000245		
Predicted MDL:	0.007438		
Predicted MQL:	0.024794		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	-.03053	.002	1
CAL 1	1.0000	.99944	-.001	-.056	.47291	.000	1
Cal 2	50.000	50.063	.063	.126	25.187	.066	1
Cal 3	100.00	99.938	-.062	-.062	50.311	.182	1



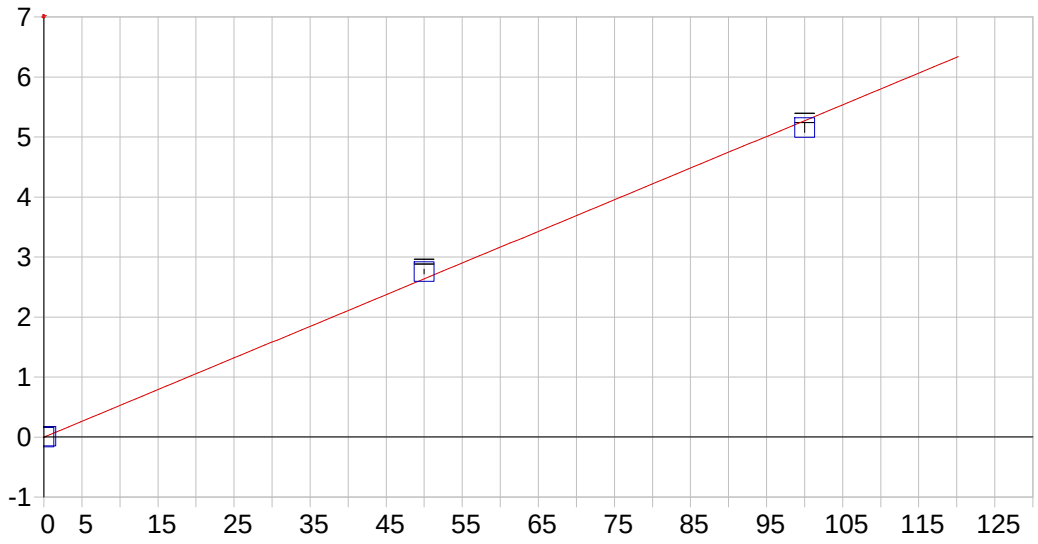
Ni 221.647 {452}

Date of Fit:	11/18/2014 15:58:38	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000120	Re-Slope:	1.000000
A1 (Gain):	0.435174	Y-int:	0.000000

A2 (Curvature):	0.000000					
n (Exponent):	1.000000					
Correlation:	0.999594		Status:	OK.		
Std Error of Est:	0.000430					
Predicted MDL:	0.000368					
Predicted MQL:	0.001228					

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	-.00001	.000	.000	.00012	.000	1
CAL 1	.04000	.04520	.005	13.0	.01979	.000	1
Cal 2	5.0000	5.1944	.194	3.89	2.2606	.036	1
Cal 3	10.000	9.8004	-.200	-2.00	4.2650	.069	1

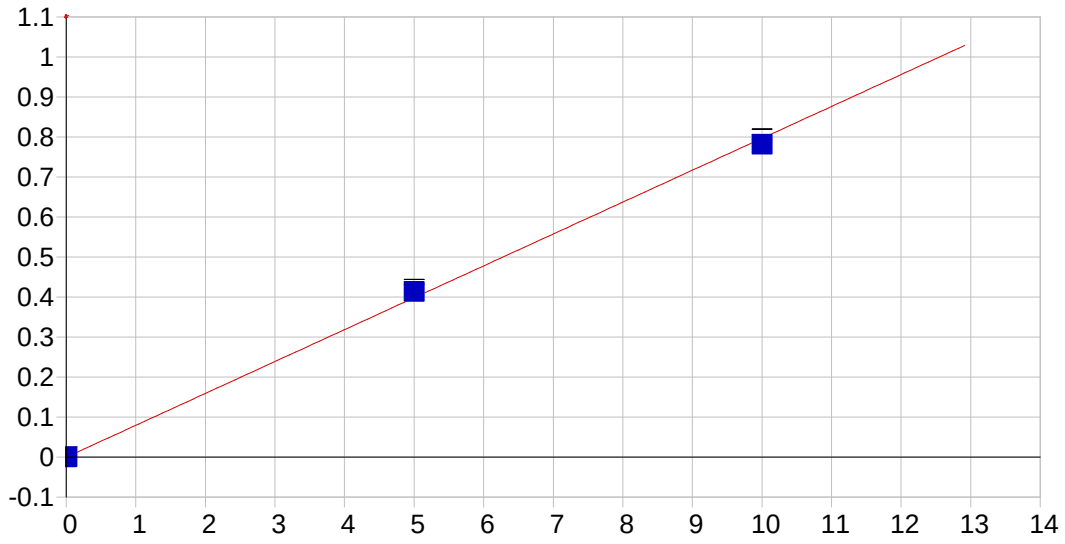


P 177.495 {490}

Date of Fit:	11/18/2014 15:58:38	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000116	Re-Slope:	1.000000
A1 (Gain):	0.052722	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999486	Status:	OK.
Std Error of Est:	0.000463		
Predicted MDL:	0.001644		
Predicted MQL:	0.005479		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	-.00001	.000	.000	-.00012	.000	1
CAL 1	.25000	.25704	.007	2.81	.01344	.000	1
Cal 2	50.000	52.267	2.27	4.53	2.7555	.040	1
Cal 3	100.00	97.726	-2.27	-2.27	5.1522	.079	1

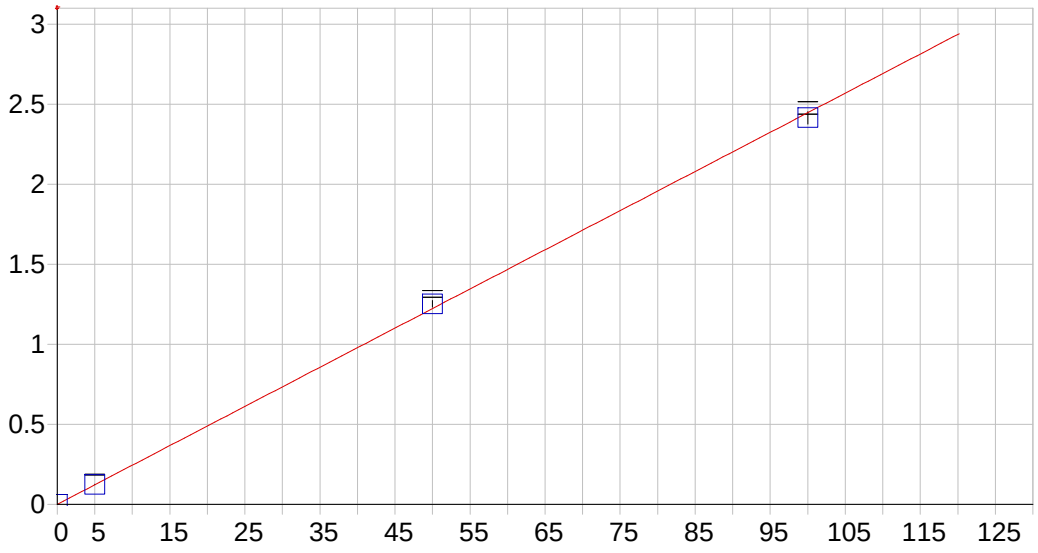


Pb 220.353 {453}

Date of Fit:	11/18/2014 15:58:38	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000203	Re-Slope:	1.000000
A1 (Gain):	0.079685	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999646	Status:	OK.
Std Error of Est:	0.000037		
Predicted MDL:	0.001687		
Predicted MQL:	0.005622		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	-.00020	.000	1
CAL 1	.01000	.00923	-.001	-7.70	.00057	.000	1
Cal 2	5.0000	5.1880	.188	3.76	.41344	.006	1
Cal 3	10.000	9.8128	-.187	-1.87	.78220	.013	1



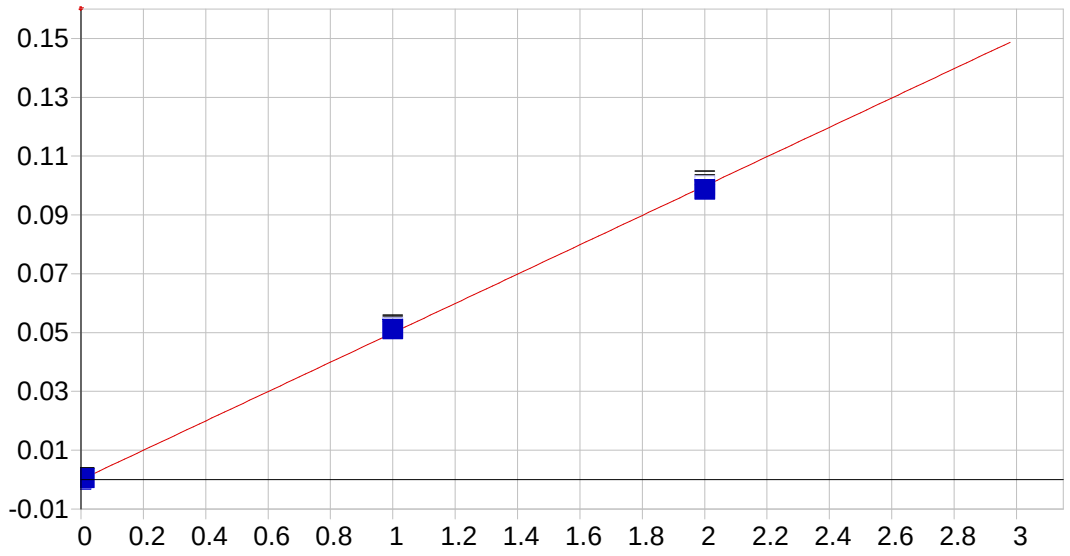
S 182.034 {485}

Date of Fit:	11/18/2014 15:58:38	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000238	Re-Slope:	1.000000
A1 (Gain):	0.024466	Y-int:	0.000000

A2 (Curvature):		0.000000					
n (Exponent):		1.000000					
Correlation:		0.999851		Status:	OK.		
Std Error of Est:		0.000526					
Predicted MDL:		0.003364					
Predicted MQL:		0.011214					

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	-.00014	.000	.000	.00023	.000	1
CAL 1	5.0000	5.0880	.088	1.76	.12472	.002	1
Cal 2	50.000	51.192	1.19	2.38	1.2527	.021	1
Cal 3	100.00	98.720	-1.28	-1.28	2.4156	.039	1

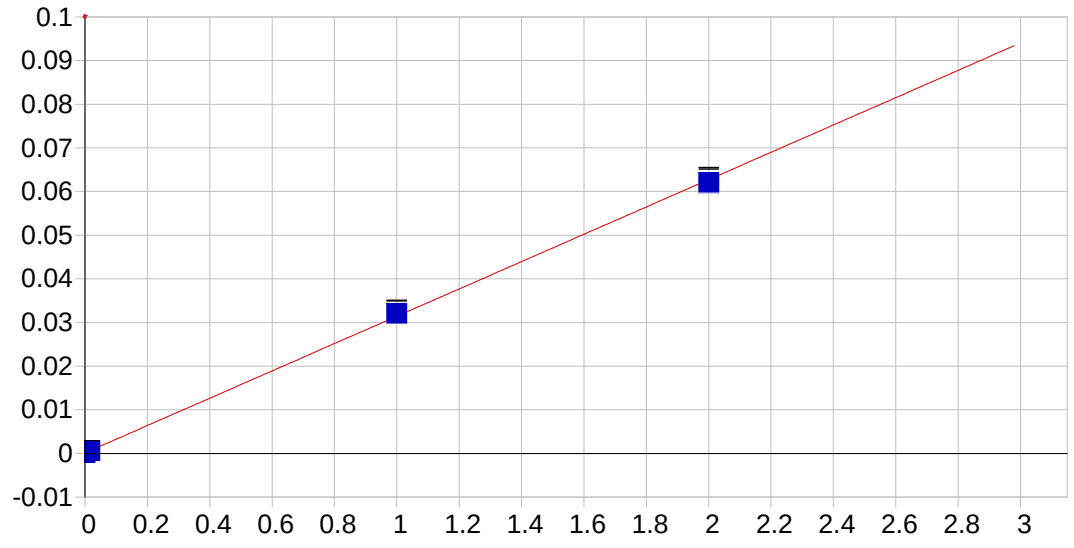


Sb 206.833 {463}

Date of Fit:	11/18/2014 15:58:38	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000005	Re-Slope:	1.000000
A1 (Gain):	0.049907	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999848	Status:	OK.
Std Error of Est:	0.000007		
Predicted MDL:	0.002636		
Predicted MQL:	0.008785		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00000	.000	1
CAL 1	.01000	.01025	.000	2.53	.00049	.000	1
Cal 2	1.0000	1.0249	.025	2.49	.05181	.001	1
Cal 3	2.0000	1.9749	-.025	-1.26	.09987	.002	1

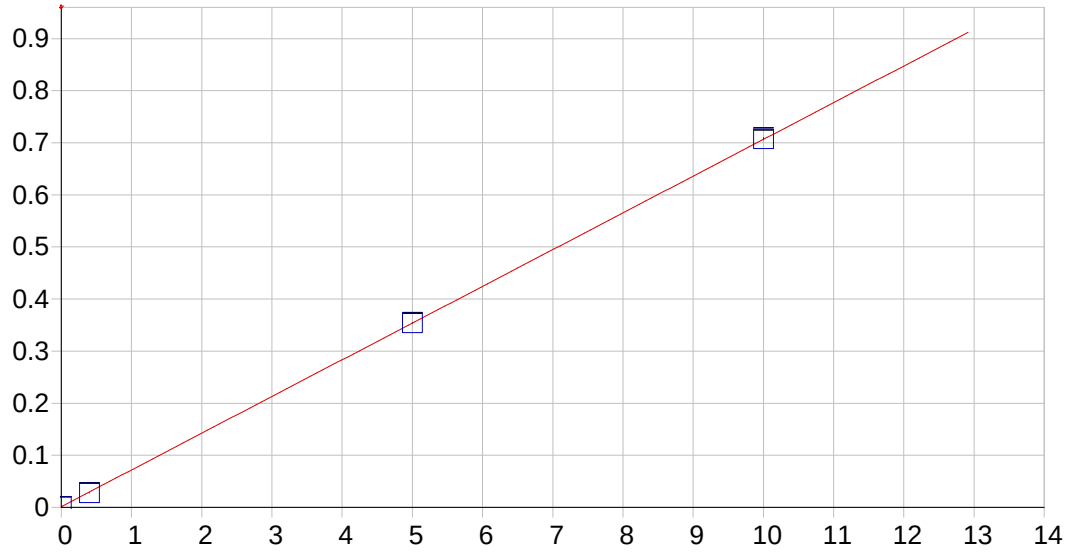


Se 196.090 {472}

Date of Fit:	11/18/2014 15:58:38	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000130	Re-Slope:	1.000000
A1 (Gain):	0.031302	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999880	Status:	OK.
Std Error of Est:	0.000005		
Predicted MDL:	0.003152		
Predicted MQL:	0.010506		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00013	.000	1
CAL 1	.01500	.01463	.000	-2.44	.00059	.000	1
Cal 2	1.0000	1.0218	.022	2.18	.03195	.001	1
Cal 3	2.0000	1.9786	-.021	-1.07	.06173	.001	1



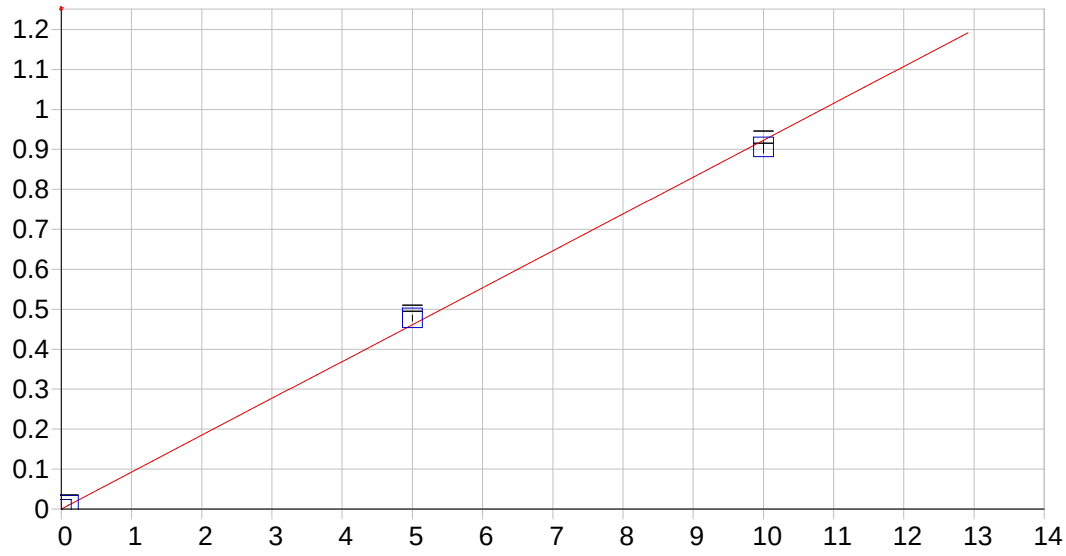
Si 251.611 {134}

Date of Fit:	11/18/2014 15:58:38	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.001288	Re-Slope:	1.000000
A1 (Gain):	0.070515	Y-int:	0.000000

A2 (Curvature):		0.000000					
n (Exponent):		1.000000					
Correlation:		0.999951		Status:	OK.		
Std Error of Est:		0.000077					
Predicted MDL:		0.006450					
Predicted MQL:		0.021500					

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00002	.000	.000	.00129	.000	1
CAL 1	.40000	.37579	-.024	-6.05	.02779	.000	1
Cal 2	5.0000	5.0062	.006	.125	.35430	.001	1
Cal 3	10.000	10.018	.018	.180	.70770	.002	1

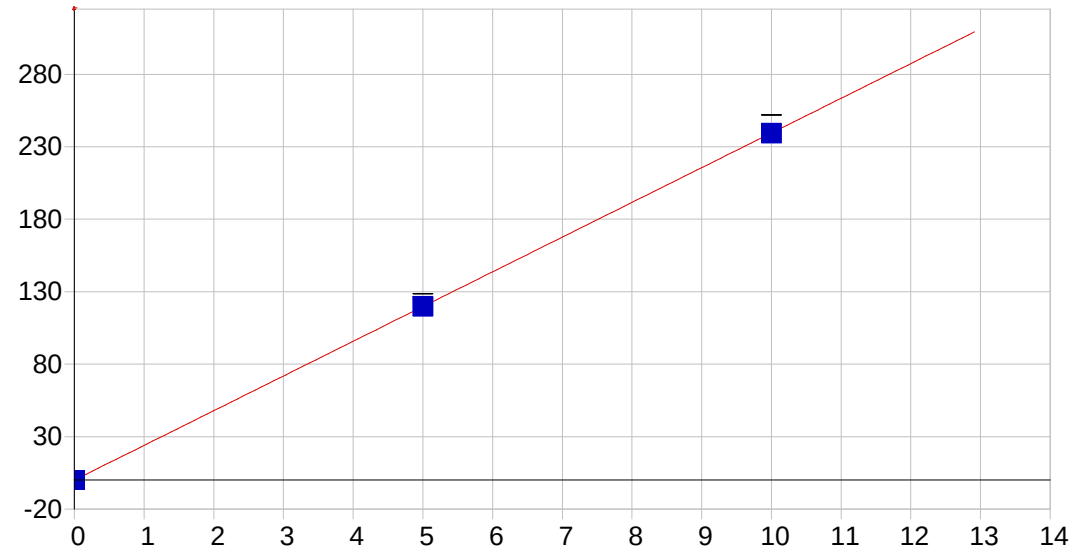


Sn 189.989 {478}

Date of Fit:	11/18/2014 15:58:38	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000097	Re-Slope:	1.000000
A1 (Gain):	0.092268	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999659	Status:	OK.
Std Error of Est:	0.000132		
Predicted MDL:	0.000849		
Predicted MQL:	0.002829		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	-.00001	.000	.000	.00010	.000	1
CAL 1	.10000	.10737	.007	7.37	.01000	.000	1
Cal 2	5.0000	5.1779	.178	3.56	.47785	.007	1
Cal 3	10.000	9.8147	-.185	-1.85	.90568	.015	1

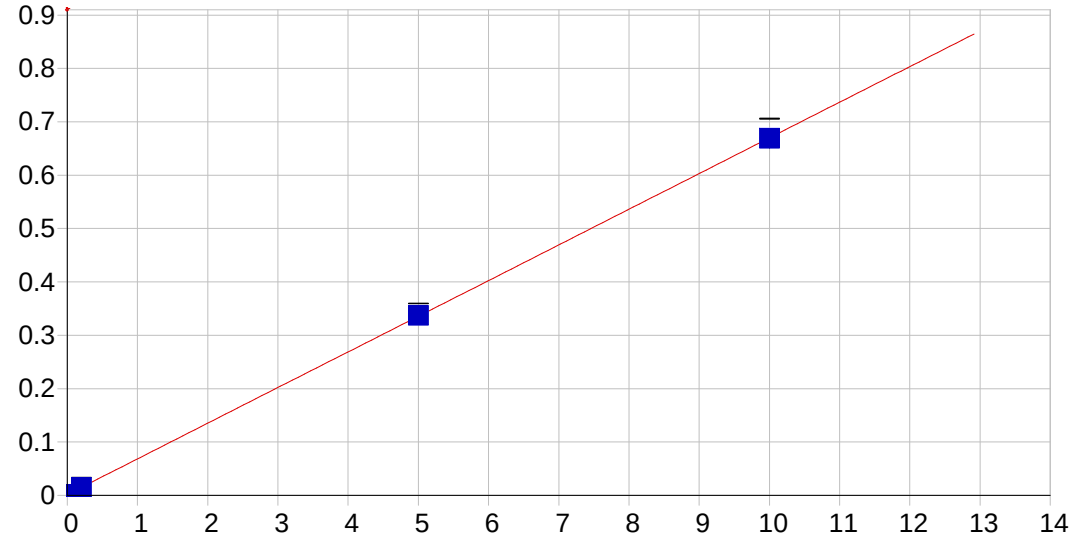


Sr 407.771 { 83}

Date of Fit:	11/18/2014 15:58:38	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.007445	Re-Slope:	1.000000
A1 (Gain):	23.951080	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999999	Status:	OK.
Std Error of Est:	0.000328		
Predicted MDL:	0.000062		
Predicted MQL:	0.000207		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	-.00745	.001	1
CAL 1	.00500	.00512	.000	2.49	.11652	.001	1
Cal 2	5.0000	5.0072	.007	.144	119.98	1.81	1
Cal 3	10.000	9.9927	-.007	-.073	239.45	5.74	1



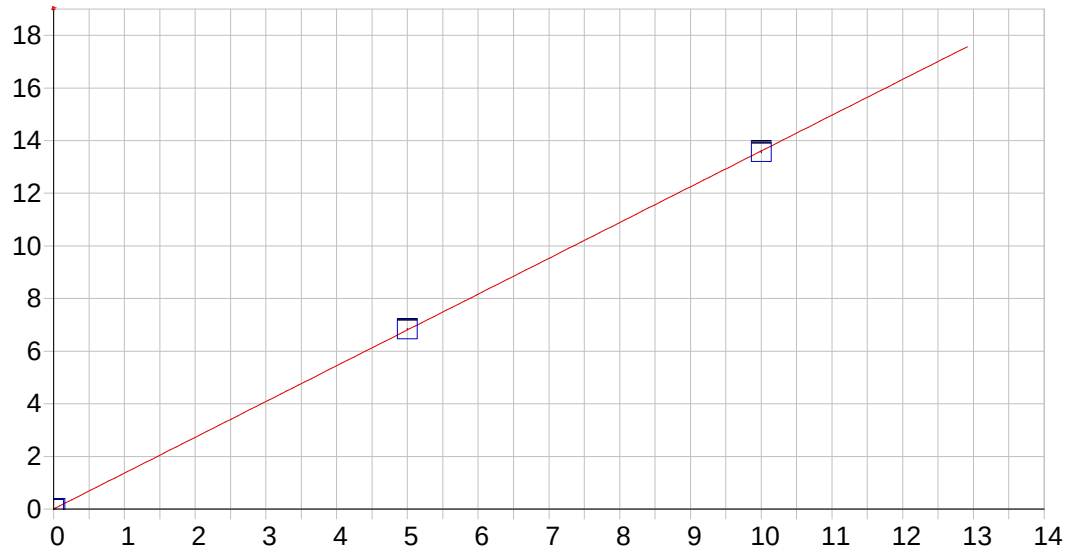
Th 283.231 {119}

Date of Fit:	11/18/2014 15:58:38	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.001552	Re-Slope:	1.000000
A1 (Gain):	0.066830	Y-int:	0.000000

A2 (Curvature):		0.000000					
n (Exponent):		1.000000					
Correlation:		0.999996		Status:	OK.		
Std Error of Est:		0.000014					
Predicted MDL:		0.005661					
Predicted MQL:		0.018871					

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00155	.000	1
CAL 1	.20000	.19809	-.002	-.955	.01459	.000	1
Cal 2	5.0000	5.0184	.018	.369	.33758	.004	1
Cal 3	10.000	9.9834	-.017	-.166	.67005	.018	1

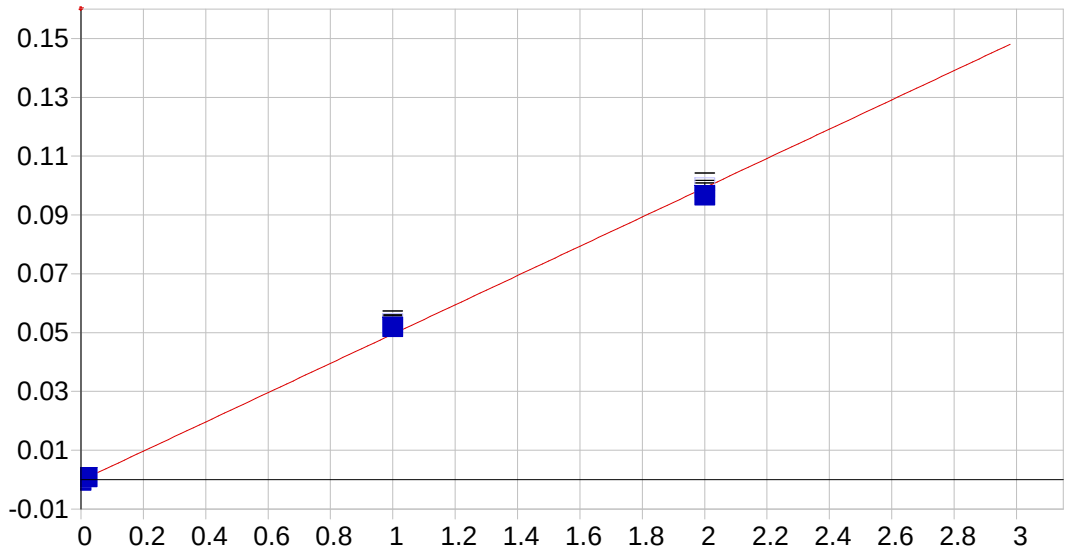


Ti 334.941 {101}

Date of Fit:	11/18/2014 15:58:38	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.005168	Re-Slope:	1.000000
A1 (Gain):	1.360236	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999995	Status:	OK.
Std Error of Est:	0.000106		
Predicted MDL:	0.000728		
Predicted MQL:	0.002428		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00517	.001	1
CAL 1	.02000	.02036	.000	1.82	.03287	.001	1
Cal 2	5.0000	5.0220	.022	.439	6.8362	.023	1
Cal 3	10.000	9.9777	-.022	-.223	13.577	.043	1

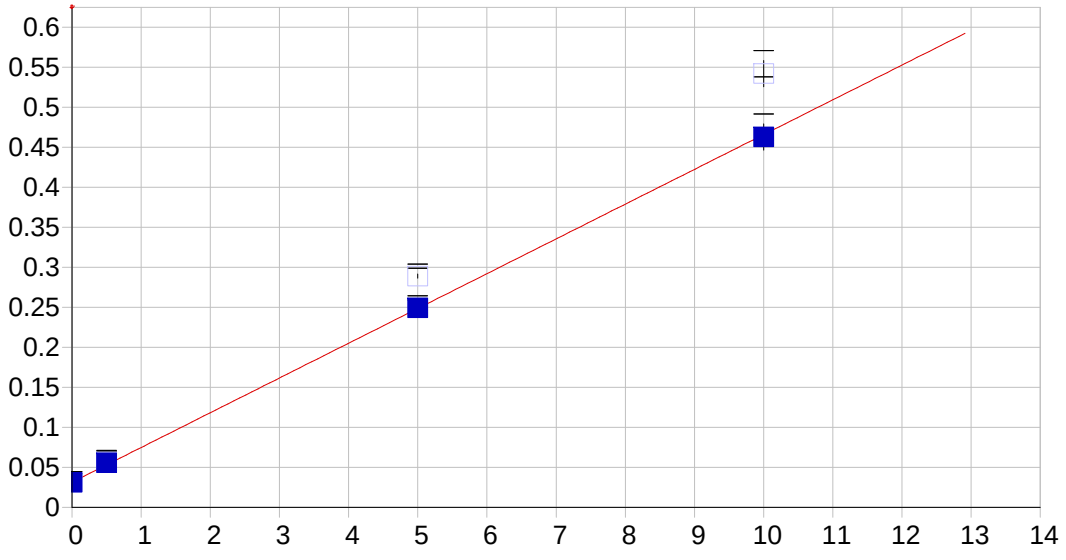


Tl 190.856 {477}

Date of Fit:	11/18/2014 15:58:38	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000268	Re-Slope:	1.000000
A1 (Gain):	0.049769	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999339	Status:	OK.
Std Error of Est:	0.000020		
Predicted MDL:	0.002003		
Predicted MQL:	0.006676		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	-.00027	.000	1
CAL 1	.02000	.02323	.003	16.2	.00090	.000	1
Cal 2	1.0000	1.0485	.048	4.85	.05318	.001	1
Cal 3	2.0000	1.9484	-.052	-2.58	.09923	.002	1



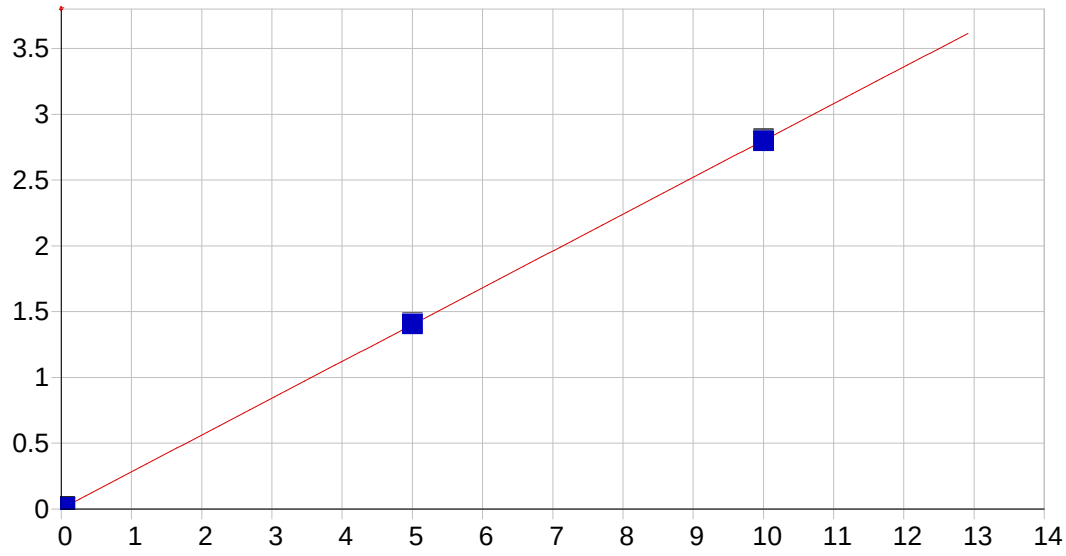
U 367.007 { 92}

Date of Fit:	11/18/2014 15:58:38	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.031410	Re-Slope:	1.000000
A1 (Gain):	0.043452	Y-int:	0.000000

A2 (Curvature):		0.000000					
n (Exponent):		1.000000					
Correlation:		0.999852		Status:	OK.		
Std Error of Est:		0.000110					
Predicted MDL:		0.022756					
Predicted MQL:		0.075853					

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	-.00005	.000	.000	.03141	.001	1
CAL 1	.50000	.55417	.054	10.8	.05675	.002	1
Cal 2	5.0000	5.0185	.018	.369	.28901	.003	1
Cal 3	10.000	9.9331	-.067	-.669	.54210	.016	1

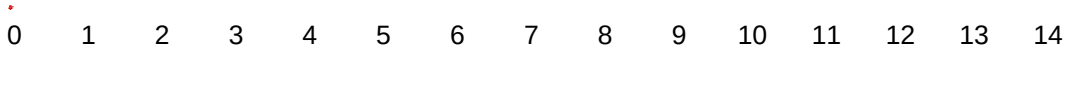


V 290.882 {116}

Date of Fit:	11/18/2014 15:58:38	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.002717	Re-Slope:	1.000000
A1 (Gain):	0.279795	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999982	Status:	OK.
Std Error of Est:	0.000065		
Predicted MDL:	0.002761		
Predicted MQL:	0.009203		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00272	.000	1
CAL 1	.05000	.04533	-.005	-9.35	.01556	.000	1
Cal 2	5.0000	5.0192	.019	.385	1.4115	.002	1
Cal 3	10.000	9.9855	-.015	-.145	2.8054	.008	1

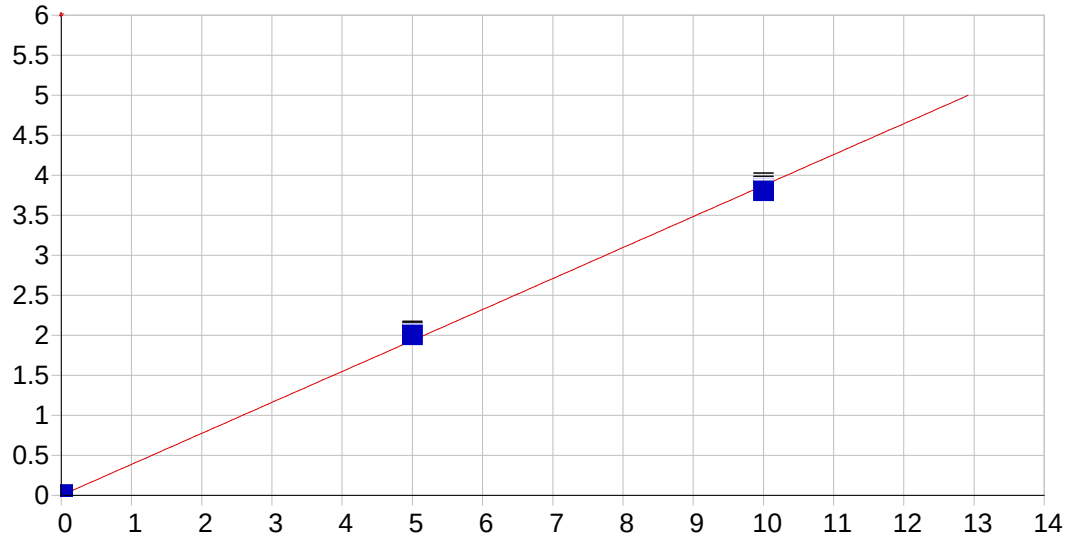


Y 371.030 { 91}*

Date of Fit:	11/18/2014 15:58:38	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	1.000000	Re-Slope:	1.000000
A1 (Gain):	0.000000	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.000000	Status:	Warning Zero Gain
Std Error of Est:	0.000000		
Predicted MDL:	n/a		
Predicted MQL:	n/a		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CAL 1	1.0000	.00000	-1.00	-100.	1.0000	.000	1
CALBLK1	.00000	.00000	.000	.000	1.0000	.000	1
Cal 2	5.0000	.00000	-5.00	-100.	1.0000	.000	1
Cal 3	10.000	.00000	-10.0	-100.	1.0000	.000	1



Zn 213.856 {458}

Date of Fit:	11/18/2014 15:58:38	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000192	Re-Slope:	1.000000
A1 (Gain):	0.387039	Y-int:	0.000000

A2 (Curvature):		0.000000					
n (Exponent):		1.000000					
Correlation:		0.999697		Status:	OK.		
Std Error of Est:		0.000236					
Predicted MDL:		0.000222					
Predicted MQL:		0.000741					
Std. Name	**Stated Conc.**	**Found Conc.**	**Difference**	**% Diff.**	**(S)IR**	**Std Dev**	**Emphasis**
CALBLK1	.00000	.00000	.000	.000	.00019	.000	1
CAL 1	.02000	.02138	.001	6.92	.00859	.000	1
Cal 2	5.0000	5.1744	.174	3.49	2.0221	.030	1
Cal 3	10.000	9.8242	-.176	-1.76	3.8410	.063	1

Sample Name: ICV Acquired: 11/18/2014 15:58:46 Type: QC
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.9817**	**49.30**	**4.851**	**5.061**	**5.032**	**5.041**	**4.925**	**51.10**	**4.962**
Stddev	.0126	.22	.026	.031	.026	.023	.029	.18	.026
%RSD	1.284	.4469	.5345	.6121	.5125	.4579	.5939	.3598	.5245
#1	.9962	49.51	4.825	5.087	5.057	5.051	4.892	50.91	4.933
#2	.9731	49.07	4.877	5.027	5.005	5.058	4.947	51.27	4.984
#3	.9759	49.31	4.852	5.068	5.035	5.015	4.936	51.11	4.969
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.099**	**4.957**	**4.948**	**49.84**	**49.08**	**4.984**	**49.76**	**4.966**	**1.010**
Stddev	.020	.059	.031	.18	.25	.023	.15	.024	.006
%RSD	.3909	1.190	.6184	.3598	.5113	.4621	.2935	.4837	.5815
#1	5.080	5.024	4.914	50.01	49.32	5.007	49.92	4.991	1.004
#2	5.120	4.936	4.974	49.65	48.82	4.961	49.64	4.943	1.015
#3	5.096	4.911	4.957	49.85	49.11	4.985	49.73	4.966	1.012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**49.20**	**5.013**	**5.165**	**5.032**	**49.60**	**.9865**	**.9844**	**5.277**	**4.954**
Stddev	.30	.021	.028	.036	.31	.0086	.0040	.029	.021
%RSD	.6057	.4144	.5434	.7199	.6239	.8705	.4019	.5566	.4202
#1	49.42	4.992	5.133	4.991	49.33	.9777	.9831	5.307	4.934
#2	48.86	5.033	5.187	5.062	49.94	.9949	.9888	5.248	4.976
#3	49.32	5.012	5.174	5.041	49.54	.9869	.9812	5.274	4.952
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: ICV Acquired: 11/18/2014 15:58:46 Type: QC
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.016**	**4.864**	**4.964**	**1.016**	**4.860**	**4.865**	**4.953**
Stddev	.050	.073	.023	.005	.105	.024	.028
%RSD	.9898	1.509	.4675	.5093	2.162	.4985	.5571
#1	4.989	4.949	4.980	1.011	4.973	4.891	4.924
#2	5.074	4.824	4.937	1.017	4.765	4.843	4.979
#3	4.986	4.820	4.973	1.021	4.843	4.861	4.955
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**3711.2**
Stddev	18.5
%RSD	.49973
#1	3727.1
#2	3715.7
#3	3690.8

Sample Name: ICB Acquired: 11/18/2014 16:02:31 Type: QC
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0003**	**.0063**	**<.0000**	**.0246**	**.0007**	**.0005**	**.0018**	**.0030**
Stddev	.0014	.0093	.0004	.0039	.0001	.0001	.0034	.0001
%RSD	541.9	147.9	8.194	16.00	21.27	16.37	193.2	3.546
#1	.0019	.0168	-.0055	.0224	.0008	.0006	.0005	.0029
#2	-.0010	-.0008	-.0048	.0292	.0006	.0005	.0056	.0030
#3	-.0001	.0029	-.0047	.0223	.0006	.0004	-.0008	.0030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Cd2288	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0004**	**.0004**	**<.0000**	**.0014**	**.0062**	**.0517**	**.0003**	**.0057**
Stddev	.0001	.0003	.0003	.0014	.0018	.0041	.0007	.0094
%RSD	17.99	79.17	53.43	96.61	29.83	7.984	294.7	167.1
#1	.0005	.0007	-.0006	.0018	.0083	.0475	.0009	.0166
#2	.0004	.0003	-.0006	-.0001	.0053	.0558	-.0006	.0002
#3	.0004	.0001	-.0002	.0026	.0050	.0517	.0005	.0002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mn2576	Mo2020	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0005**	**<.0000**	**.0059**	**.0002**	**.0024**	**<.0000**	**.0044**	**.0046**
Stddev	.0002	.0006	.0007	.0000	.0008	.0018	.0008	.0018
%RSD	44.47	1176.	11.55	22.91	31.79	92.64	18.62	39.84
#1	.0005	.0006	.0060	.0002	.0032	-.0016	.0037	.0043
#2	.0008	-.0001	.0064	.0001	.0024	-.0040	.0053	.0029
#3	.0003	-.0006	.0051	.0002	.0016	-.0004	.0041	.0065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: ICB Acquired: 11/18/2014 16:02:31 Type: QC
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2516	Sn1899	Sr4077	Th2832	Ti3349	Tl1908	U_3670
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0035	.0025	.0018	.0005	.0078	.0019	.0008	W .0579
Stddev	.0018	.0043	.0012	.0001	.0023	.0006	.0010	.0373
%RSD	51.70	172.1	67.87	22.11	29.93	29.06	131.2	64.46
#1	.0030	.0054	.0031	.0007	.0052	.0015	.0009	.0220
#2	.0021	-.0024	.0015	.0004	.0095	.0017	.0017	.0551
#3	.0056	.0045	.0007	.0005	.0088	.0026	-.0003	.0965
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn
High Limit								.0470
Low Limit								-.0470

Elem	V_2908	Zn2138
Units	ppm	ppm
Avg	<.0000	.0004
Stddev	.0016	.0001
%RSD	284.1	29.15
#1	.0000	.0004
#2	.0007	.0003
#3	-.0024	.0006
Check ?	Chk Pass	Chk Pass
High Limit		
Low Limit		

Int. Std.	Y_3710
Units	Cts/S
Avg	3654.3
Stddev	16.8
%RSD	.45986
#1	3652.3
#2	3672.0
#3	3638.5

Sample Name: LLC Acquired: 11/18/2014 16:06:27 Type: QC
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0093**	**.1899**	**.0085**	W **.0612**	**.0504**	**.0053**	**.2005**	**1.090**
Stddev	.0021	.0055	.0011	.0024	.0002	.0001	.0099	.028
%RSD	22.76	2.895	12.53	3.862	.4915	1.131	4.940	2.532
#1	.0108	.1959	.0073	.0623	.0505	.0052	.2103	1.119
#2	.0103	.1852	.0086	.0585	.0502	.0052	.1905	1.064
#3	.0069	.1887	.0095	.0628	.0506	.0053	.2006	1.087
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value				.0500				
Range				20.00%				

Elem	Cd2288	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0049**	**.0535**	W **.0071**	**.0261**	**.1060**	**4.888**	**.0495**	**.9918**
Stddev	.0002	.0015	.0004	.0021	.0014	.037	.0019	.0151
%RSD	4.483	2.799	5.143	7.899	1.319	.7558	3.782	1.521
#1	.0051	.0545	.0067	.0271	.1076	4.927	.0480	1.008
#2	.0050	.0518	.0075	.0238	.1049	4.853	.0490	.9774
#3	.0047	.0542	.0071	.0276	.1055	4.884	.0516	.9904
Check ?	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value			.0100					
Range			-20.00%					

Elem	Mn2576	Mo2020	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0152**	**.0405**	**.9775**	**.0429**	**.2456**	**.0098**	**4.860**	**.0110**
Stddev	.0004	.0012	.0081	.0010	.0060	.0026	.153	.0015
%RSD	2.556	2.984	.8317	2.219	2.439	26.93	3.153	13.88
#1	.0153	.0419	.9746	.0440	.2512	.0107	5.026	.0105
#2	.0147	.0398	.9712	.0422	.2393	.0069	4.724	.0127
#3	.0154	.0398	.9866	.0427	.2461	.0119	4.831	.0098
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Sample Name: LLC Acquired: 11/18/2014 16:06:27 Type: QC
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2516	Sn1899	Sr4077	Th2832	Ti3349	Tl1908	U_3670
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0175**	**.3711**	**.1032**	**.0052**	**.1823**	**.0206**	**.0218**	**.5388**
Stddev	.0011	.0176	.0037	.0000	.0021	.0002	.0030	.0304
%RSD	6.002	4.746	3.597	.7310	1.168	1.078	13.96	5.647
#1	.0163	.3873	.1069	.0051	.1828	.0207	.0253	.5680
#2	.0179	.3523	.0995	.0052	.1799	.0203	.0201	.5073
#3	.0183	.3736	.1031	.0052	.1841	.0207	.0199	.5410
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	V_2908	Zn2138
Units	ppm	ppm
Avg	**.0474**	**.0204**
Stddev	.0004	.0009
%RSD	.7982	4.266
#1	.0478	.0214
#2	.0471	.0197
#3	.0474	.0201
Check ?	Chk Pass	Chk Pass
Value		
Range		

Int. Std.	Y_3710
Units	Cts/S
Avg	**3840.0**
Stddev	64.7
%RSD	1.6851
#1	3770.3
#2	3898.2
#3	3851.6

Sample Name: ICSA Acquired: 11/18/2014 16:10:21 Type: QC
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0002**	**99.37**	**<.0000**	**<.0000**	**.0005**	**.0001**	**.0146**
Stddev	.0005	.22	.0018	.0049	.0001	.0000	.0040
%RSD	292.2	.2189	137.4	22.22	11.05	33.75	27.48
#1	.0003	99.51	-.0008	-.0274	.0005	.0001	.0185
#2	-.0004	99.12	-.0034	-.0178	.0005	.0001	.0149
#3	.0006	99.49	.0002	-.0208	.0006	.0001	.0104
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Ca1840	Cd2288	Co2286	Cr2835	Cu2178	Fe2599	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**102.7**	**<.0000**	**.0013**	**.0031**	**.0013**	**99.75**	**98.97**
Stddev	1.5	.0002	.0006	.0009	.0024	.19	.15
%RSD	1.484	35.89	47.93	28.57	188.3	.1947	.1543
#1	102.2	-.0005	.0018	.0024	.0034	99.86	99.14
#2	101.5	-.0006	.0015	.0040	-.0013	99.53	98.85
#3	104.4	-.0009	.0006	.0027	.0018	99.86	98.91
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Li6707	Mg2798	Mn2576	Mo2020	Na5895	Ni2216	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**<.0000**	**101.5**	**W .0044**	**<.0000**	**98.64**	**.0015**	**102.4**
Stddev	.0008	.3	.0004	.0001	.22	.0004	1.6
%RSD	4112.	.2864	9.297	13.91	.2228	29.69	1.522
#1	-.0005	101.5	.0041	-.0004	98.80	.0018	101.9
#2	.0009	101.2	.0049	-.0006	98.39	.0010	101.1
#3	-.0004	101.8	.0043	-.0005	98.73	.0017	104.1
Check ?	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			.0031				
Low Limit			-.0031				

Sample Name: ICSA Acquired: 11/18/2014 16:10:21 Type: QC
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W<.0000	103.0	.0033	<.0000	<.0000	<.0000	W<.0000
Stddev	.0026	1.8	.0066	.0047	.0056	.0003	.0001
%RSD	77.65	1.790	198.1	145.4	169.0	16.54	1.324
#1	-.0051	102.4	.0021	.0021	-.0033	-.0021	-.0043
#2	-.0004	101.5	-.0026	-.0051	-.0090	-.0015	-.0042
#3	-.0044	105.1	.0104	-.0067	.0023	-.0018	-.0043
Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn
High Limit	.0025						.0011
Low Limit	-.0025						-.0011

Elem	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0382	W .0051	<.0000	W .1368	<.0000	<.0000
Stddev	.0036	.0008	.0025	.0601	.0040	.0004
%RSD	9.475	15.12	2920.	43.95	50.77	5.006
#1	.0350	.0059	-.0023	.1493	-.0032	-.0084
#2	.0375	.0044	.0027	.0714	-.0100	-.0092
#3	.0421	.0050	-.0006	.1897	-.0102	-.0086
Check ?	Chk Pass	Chk Warn	Chk Pass	Chk Warn	Chk Pass	Chk Pass
High Limit		.0049		.0470		
Low Limit		-.0049		-.0470		

Int. Std.	Y_3710
Units	Cts/S
Avg	3541.7
Stddev	25.4
%RSD	.71807
#1	3545.2
#2	3565.2
#3	3514.7

Sample Name: ICSAB Acquired: 11/18/2014 16:14:12 Type: QC
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.4957**	**97.22**	**2.460**	**2.430**	**2.490**	**2.526**	**2.480**	**96.53**	**2.490**
Stddev	.0029	.06	.018	.011	.005	.003	.019	.66	.015
%RSD	.5785	.0611	.7495	.4648	.2190	.1248	.7808	.6794	.6035
#1	.4985	97.17	2.479	2.421	2.485	2.522	2.491	97.11	2.504
#2	.4958	97.20	2.442	2.426	2.492	2.528	2.457	95.82	2.474
#3	.4928	97.29	2.460	2.443	2.495	2.527	2.491	96.65	2.493
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.483**	**2.441**	**2.495**	**97.10**	**98.04**	**2.450**	**97.69**	**2.415**	**.4951**
Stddev	.017	.003	.020	.30	.25	.003	.09	.003	.0022
%RSD	.6932	.1160	.8131	.3114	.2576	.1204	.0958	.1095	.4422
#1	2.498	2.440	2.514	96.77	97.79	2.447	97.79	2.414	.4972
#2	2.464	2.438	2.474	97.19	98.03	2.448	97.62	2.413	.4928
#3	2.488	2.444	2.498	97.35	98.30	2.453	97.64	2.418	.4954
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**97.41**	**2.455**	**97.49**	**2.452**	**98.49**	**.4949**	**.4946**	**2.475**	**2.450**
Stddev	.09	.015	.75	.019	.74	.0047	.0099	.010	.014
%RSD	.0967	.6276	.7671	.7658	.7557	.9582	2.009	.3880	.5801
#1	97.44	2.467	98.20	2.468	99.20	.4988	.4879	2.482	2.464
#2	97.30	2.438	96.71	2.431	97.72	.4896	.4899	2.464	2.435
#3	97.48	2.460	97.55	2.456	98.54	.4962	.5060	2.478	2.452
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: ICSAB Acquired: 11/18/2014 16:14:12 Type: QC
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.504**	**2.436**	**2.451**	**.4979**	**2.529**	**2.402**	**2.501**
Stddev	.004	.008	.007	.0016	.052	.005	.017
%RSD	.1663	.3462	.2862	.3123	2.041	.1906	.6970
#1	2.500	2.428	2.443	.4983	2.585	2.403	2.516
#2	2.505	2.436	2.451	.4992	2.483	2.405	2.482
#3	2.508	2.445	2.457	.4961	2.520	2.397	2.505
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**3689.1**
Stddev	4.9
%RSD	.13231
#1	3693.7
#2	3689.5
#3	3684.0

Sample Name: LDR Acquired: 11/18/2014 16:17:42 Type: QC
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.984**	**100.6**	**10.04**	**9.980**	**9.996**	**10.03**	**9.989**	**98.51**	**9.970**
Stddev	.009	.2	.13	.006	.078	.06	.097	1.18	.111
%RSD	.4806	.1996	1.259	.0568	.7789	.5924	.9747	1.202	1.115
#1	1.977	100.8	9.957	9.978	10.06	10.00	9.939	97.69	9.908
#2	1.979	100.4	9.973	9.987	10.02	9.996	9.926	97.97	9.904
#3	1.995	100.6	10.18	9.977	9.910	10.10	10.10	99.87	10.10
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.874**	**9.891**	**9.969**	**99.58**	**100.5**	**10.05**	**100.0**	**9.976**	**1.998**
Stddev	.111	.038	.089	.26	.0	.02	.6	.031	.021
%RSD	1.122	.3819	.8887	.2625	.0378	.2226	.6214	.3087	1.075
#1	9.799	9.871	9.927	99.70	100.6	10.07	100.0	9.984	1.990
#2	9.821	9.868	9.909	99.28	100.5	10.05	99.38	9.941	1.981
#3	10.00	9.935	10.07	99.76	100.6	10.02	100.6	10.00	2.022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**99.91**	**9.890**	**98.73**	**9.916**	**100.2**	**2.009**	**2.009**	**9.998**	**9.905**
Stddev	.10	.118	1.13	.123	1.2	.026	.023	.018	.114
%RSD	.0965	1.191	1.149	1.237	1.152	1.274	1.158	.1840	1.149
#1	100.00	9.814	97.96	9.851	99.55	1.988	1.994	10.01	9.850
#2	99.81	9.830	98.20	9.840	99.60	2.001	1.996	9.977	9.829
#3	99.91	10.03	100.0	10.06	101.6	2.037	2.035	10.01	10.04
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: LDR Acquired: 11/18/2014 16:17:42 Type: QC
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.876**	**9.872**	**9.968**	**1.972**	**9.951**	**9.966**	**9.934**
Stddev	.078	.032	.006	.029	.020	.028	.111
%RSD	.7858	.3228	.0618	1.470	.1979	.2808	1.117
#1	9.893	9.883	9.965	1.955	9.952	9.976	9.872
#2	9.944	9.836	9.963	1.956	9.931	9.935	9.868
#3	9.792	9.896	9.975	2.006	9.970	9.988	10.06
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**3697.8**
Stddev	40.1
%RSD	1.0840
#1	3703.3
#2	3734.8
#3	3655.2

Sample Name: CCV Acquired: 11/18/2014 16:21:34 Type: QC
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.013**	**49.51**	**5.087**	**4.984**	**5.058**	**5.054**	**5.130**	**51.44**	**5.113**
Stddev	.012	.23	.056	.019	.031	.083	.066	.54	.056
%RSD	1.135	.4551	1.101	.3729	.6106	1.639	1.279	1.046	1.091
#1	1.011	49.77	5.068	5.005	5.092	5.135	5.101	51.34	5.090
#2	1.025	49.40	5.149	4.980	5.031	5.058	5.205	52.02	5.176
#3	1.003	49.36	5.042	4.968	5.051	4.970	5.083	50.96	5.072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.158**	**5.078**	**5.129**	**50.13**	**49.96**	**5.013**	**50.07**	**5.021**	**1.026**
Stddev	.060	.067	.062	.20	.30	.028	.27	.018	.011
%RSD	1.158	1.313	1.213	.4062	.5970	.5601	.5351	.3595	1.042
#1	5.145	5.078	5.102	50.36	50.28	5.042	50.25	5.036	1.021
#2	5.223	5.145	5.200	49.99	49.69	4.986	50.19	5.025	1.039
#3	5.105	5.012	5.085	50.03	49.91	5.012	49.76	5.001	1.019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**50.00**	**5.168**	**51.97**	**5.171**	**51.03**	**1.019**	**1.032**	**5.026**	**5.152**
Stddev	.22	.055	.56	.057	.51	.015	.008	.025	.056
%RSD	.4312	1.061	1.086	1.100	1.009	1.502	.8059	.4924	1.090
#1	50.25	5.155	51.82	5.161	50.88	1.013	1.029	5.053	5.131
#2	49.88	5.228	52.59	5.233	51.61	1.036	1.041	5.005	5.215
#3	49.88	5.120	51.49	5.120	50.61	1.007	1.025	5.021	5.109
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: CCV Acquired: 11/18/2014 16:21:34 Type: QC
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.029**	**5.042**	**4.978**	**1.043**	**5.079**	**5.033**	**5.131**
Stddev	.057	.072	.025	.013	.154	.023	.054
%RSD	1.137	1.420	.4953	1.263	3.023	.4639	1.050
#1	5.072	5.023	5.006	1.036	5.111	5.050	5.115
#2	5.051	5.121	4.962	1.058	5.215	5.042	5.191
#3	4.964	4.981	4.966	1.034	4.913	5.006	5.087
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**3730.1**
Stddev	37.4
%RSD	1.0026
#1	3749.8
#2	3686.9
#3	3753.4

Sample Name: CCB Acquired: 11/18/2014 16:25:18 Type: QC
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0145	<.0000	.0230	.0007	.0009	.0011	.0051	.0001
Stddev	.0004	.0099	.0037	.0020	.0002	.0004	.0038	.0018	.0002
%RSD	80.69	68.37	110.9	8.701	25.73	40.54	352.7	36.31	148.2
#1	-.0002	.0079	-.0059	.0252	.0007	.0007	.0052	.0052	.0002
#2	-.0009	.0260	-.0050	.0227	.0010	.0013	-.0023	.0069	.0003
#3	-.0004	.0097	.0009	.0212	.0006	.0006	.0004	.0032	-.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	.0008	.0011	.0106	.0527	.0025	.0021	.0008	.0002
Stddev	.0002	.0007	.0008	.0049	.0080	.0007	.0099	.0003	.0005
%RSD	57.93	82.44	68.00	45.86	15.27	29.23	461.3	43.68	284.1
#1	.0005	.0001	.0006	.0120	.0596	.0024	.0135	.0008	-.0002
#2	.0002	.0009	.0008	.0146	.0438	.0033	-.0046	.0011	-.0001
#3	.0003	.0015	.0020	.0052	.0546	.0018	-.0025	.0004	.0008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0152	.0006	.0042	<.0000	.0049	<.0000	<.0000	<.0000	.0008
Stddev	.0083	.0003	.0008	.0009	.0067	.0021	.0038	.0037	.0006
%RSD	54.46	43.86	19.49	62.12	135.0	228.5	3181.	58.24	77.78
#1	.0075	.0009	.0046	-.0010	.0104	-.0015	-.0011	-.0105	.0004
#2	.0240	.0007	.0047	-.0010	.0069	.0014	-.0034	-.0032	.0005
#3	.0141	.0003	.0032	-.0026	-.0025	-.0027	.0041	-.0055	.0016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Sample Name: CCB Acquired: 11/18/2014 16:25:18 Type: QC
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0009	.0102	.0021	.0050	.0351	.0018	.0005
Stddev	.0003	.0075	.0004	.0026	.0295	.0020	.0003
%RSD	36.68	73.33	16.89	51.98	83.91	113.2	56.63
#1	.0008	.0085	.0025	.0029	.0168	.0003	.0006
#2	.0013	.0184	.0021	.0079	.0691	.0041	.0008
#3	.0006	.0037	.0018	.0042	.0194	.0010	.0002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_3710
Units	Cts/S
Avg	3881.2
Stddev	34.2
%RSD	.88241
#1	3885.0
#2	3913.4
#3	3845.2

Sample Name: MB 160-157018/1-A Acquired: 11/18/2014 16:37:54 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000**	**.0066**	**<.0000**	**.0063**	**.0002**	**.0000**	**.0023**	**.0666**	**<.0000**
Stddev	.0015	.0029	.0025	.0030	.0001	.0001	.0034	.0009	.0002
%RSD	4252.	44.17	225.6	47.64	43.74	182.4	147.0	1.290	96.48
#1	.0002	.0082	-.0039	.0055	.0003	.0000	.0047	.0675	.0000
#2	-.0016	.0033	.0006	.0037	.0001	.0001	.0036	.0658	-.0003
#3	.0015	.0085	.0000	.0095	.0002	.0000	-.0015	.0664	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**<.0000**	**.0004**	**.0007**	**.0080**	**.0203**	**.0008**	**<.0000**	**.0000**	**.0001**
Stddev	.0002	.0009	.0020	.0014	.0322	.0009	.0077	.0000	.0002
%RSD	87.38	223.5	285.8	17.80	158.7	110.6	430.4	90.22	247.7
#1	-.0005	-.0006	-.0012	.0063	-.0122	.0014	-.0005	.0000	.0003
#2	-.0004	.0009	.0004	.0089	.0209	-.0002	-.0100	.0001	-.0001
#3	.0000	.0009	.0028	.0086	.0522	.0011	.0052	.0000	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0167**	**.0004**	**.0022**	**<.0000**	**.0044**	**.0042**	**.0030**	**.0080**	**.0002**
Stddev	.0055	.0003	.0012	.0004	.0010	.0033	.0004	.0064	.0007
%RSD	32.98	71.66	56.17	36.98	21.47	78.89	14.82	79.53	382.2
#1	.0147	.0002	.0021	-.0011	.0054	.0073	.0030	.0108	-.0006
#2	.0124	.0003	.0010	-.0013	.0035	.0007	.0025	.0007	.0008
#3	.0229	.0007	.0035	-.0006	.0043	.0045	.0034	.0124	.0004
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: MB 160-157018/1-A Acquired: 11/18/2014 16:37:54 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0126	.0010	.0017	.0532	<.0000	.0086
Stddev	.0000	.0035	.0015	.0004	.0462	.0041	.0001
%RSD	16.80	27.74	158.4	26.02	86.92	314.3	1.117
#1	.0001	.0137	.0007	.0016	.0995	.0034	.0085
#2	.0001	.0154	.0026	.0013	.0070	-.0043	.0085
#3	.0001	.0087	-.0004	.0022	.0531	-.0030	.0087
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3639.0
Stddev	35.0
%RSD	.96151
#1	3639.8
#2	3673.6
#3	3603.6

Sample Name: LCS 160-157018/2-A Acquired: 11/18/2014 16:41:50 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2103	10.05	1.061	2.009	1.047	1.049	1.052	11.65	1.075
Stddev	.0055	.06	.021	.004	.003	.004	.020	.17	.019
%RSD	2.632	.6405	1.999	.1934	.3176	.3667	1.914	1.462	1.768
#1	.2040	10.08	1.084	2.006	1.050	1.051	1.074	11.85	1.096
#2	.2144	10.10	1.057	2.014	1.049	1.050	1.048	11.58	1.071
#3	.2125	9.977	1.042	2.008	1.044	1.044	1.034	11.53	1.059
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.161	1.118	1.115	10.52	10.11	1.037	10.03	1.040	.5369
Stddev	.022	.016	.028	.01	.03	.006	.06	.004	.0125
%RSD	1.928	1.430	2.542	.0929	.3154	.5544	.5729	.4016	2.330
#1	1.187	1.100	1.147	10.52	10.14	1.040	10.10	1.044	.5509
#2	1.153	1.132	1.104	10.51	10.09	1.041	10.02	1.040	.5328
#3	1.144	1.120	1.093	10.53	10.08	1.030	9.982	1.035	.5269
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.14	1.132	1.112	1.125	10.10	.5206	.5339	.0383	1.070
Stddev	.05	.020	.017	.023	.25	.0119	.0111	.0024	.019
%RSD	.4658	1.800	1.527	2.080	2.448	2.285	2.072	6.340	1.741
#1	10.16	1.155	1.132	1.151	10.38	.5342	.5455	.0387	1.090
#2	10.17	1.125	1.103	1.117	10.03	.5118	.5329	.0357	1.067
#3	10.08	1.116	1.102	1.106	9.898	.5159	.5234	.0405	1.053
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LCS 160-157018/2-A Acquired: 11/18/2014 16:41:50 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.061	1.103	1.001	.2357	1.220	1.022	1.091
Stddev	.005	.017	.001	.0063	.051	.007	.022
%RSD	.4919	1.561	.0871	2.661	4.170	.6917	2.009
#1	1.065	1.084	1.002	.2421	1.171	1.024	1.116
#2	1.063	1.117	1.002	.2295	1.215	1.028	1.084
#3	1.055	1.108	1.000	.2354	1.273	1.014	1.073
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3614.4
Stddev	24.0
%RSD	.66403
#1	3590.6
#2	3614.0
#3	3638.6

Sample Name: 160-9229-D-8-A Acquired: 11/18/2014 16:45:27 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0202	<.0000	.0650	.0519	.0001	.0008	61.71	.0000
Stddev	.0004	.0088	.0017	.0014	.0001	.0000	.0053	.26	.0001
%RSD	159.5	43.54	176.4	2.090	.2137	93.24	697.2	.4235	271.0
#1	.0000	.0107	-.0018	.0662	.0519	.0001	-.0027	61.80	.0001
#2	-.0007	.0219	-.0021	.0653	.0518	.0000	.0069	61.92	.0001
#3	.0000	.0280	.0010	.0635	.0520	.0000	-.0019	61.42	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0169	.0058	.0019	.0684	4.445	.0051	20.33	.0704	.0277
Stddev	.0002	.0019	.0009	.0016	.026	.0007	.09	.0007	.0004
%RSD	1.310	32.89	48.32	2.309	.5878	13.38	.4379	.9306	1.359
#1	.0169	.0041	.0029	.0690	4.456	.0045	20.43	.0703	.0272
#2	.0172	.0079	.0010	.0697	4.415	.0051	20.25	.0710	.0279
#3	.0167	.0054	.0019	.0667	4.463	.0059	20.31	.0697	.0279
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	18.26	.0139	.6838	.0144	16.84	.0029	.0005	22.11	<.0000
Stddev	.04	.0002	.0047	.0019	.10	.0017	.0018	.09	.0010
%RSD	.2449	1.772	.6811	13.14	.5935	59.74	346.7	.4032	158.3
#1	18.22	.0137	.6819	.0165	16.80	.0044	.0025	22.15	-.0018
#2	18.31	.0142	.6891	.0128	16.96	.0010	-.0005	22.01	-.0003
#3	18.26	.0139	.6804	.0139	16.77	.0032	-.0005	22.17	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9229-D-8-A Acquired: 11/18/2014 16:45:27 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2537	.0031	.0027	<.0000	<.0000	.0231	.0280
Stddev	.0004	.0048	.0006	.0016	.0302	.0015	.0003
%RSD	.1399	154.5	21.90	119.4	1257.	6.278	1.058
#1	.2540	.0032	.0034	.0005	.0251	.0239	.0280
#2	.2539	.0079	.0025	-.0025	.0023	.0240	.0283
#3	.2533	-.0018	.0023	-.0021	-.0347	.0214	.0277
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3715.1
Stddev	9.5
%RSD	.25466
#1	3717.6
#2	3704.6
#3	3723.0

Sample Name: 160-9229-D-8-A SD Acquired: 11/18/2014 16:49:20 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=5

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	<.0000	.0201	.0100	<.0000	<.0000	12.69	<.0000
Stddev	.0018	.0061	.0029	.0023	.0001	.0000	.0085	.29	.0001
%RSD	371.4	67.86	125.0	11.53	.5176	660.3	300.3	2.250	235.7
#1	.0003	-.0020	.0007	.0227	.0100	.0000	-.0101	13.02	-.0001
#2	.0008	-.0134	-.0025	.0181	.0101	.0000	-.0048	12.54	-.0001
#3	-.0026	-.0113	-.0052	.0197	.0100	.0000	.0065	12.50	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0032	.0016	<.0000	.0172	.8861	.0011	3.959	.0138	.0057
Stddev	.0007	.0016	.0024	.0018	.0194	.0002	.054	.0002	.0003
%RSD	22.39	97.98	282.4	10.38	2.184	19.31	1.367	1.499	5.469
#1	.0025	.0027	.0008	.0168	.8648	.0010	4.018	.0140	.0059
#2	.0039	.0024	.0003	.0156	.9026	.0014	3.912	.0136	.0059
#3	.0032	-.0002	-.0035	.0191	.8908	.0011	3.947	.0138	.0054
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.483	.0028	.1369	<.0000	3.334	.0013	<.0000	4.206	<.0000
Stddev	.016	.0003	.0046	.0010	.082	.0021	.0025	.044	.0010
%RSD	.4619	9.772	3.367	353.1	2.469	162.1	248.9	1.038	85.91
#1	3.500	.0025	.1422	.0006	3.426	.0023	-.0040	4.236	-.0022
#2	3.468	.0028	.1340	-.0001	3.311	-.0011	.0004	4.156	-.0004
#3	3.481	.0030	.1345	-.0013	3.266	.0028	.0005	4.226	-.0007
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9229-D-8-A SD Acquired: 11/18/2014 16:49:20 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=5

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0496	.0062	.0012	.0059	.0890	.0077	.0112
Stddev	.0003	.0039	.0011	.0013	.0180	.0026	.0004
%RSD	.5287	63.57	88.98	22.43	20.17	34.01	3.547
#1	.0499	.0077	.0025	.0057	.1091	.0051	.0116
#2	.0494	.0091	.0010	.0047	.0745	.0078	.0112
#3	.0495	.0017	.0003	.0073	.0835	.0103	.0108
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3675.6
Stddev	76.9
%RSD	2.0927
#1	3587.4
#2	3710.7
#3	3728.8

Sample Name: 160-9229-D-8-B MS Acquired: 11/18/2014 16:53:14 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1948**	**9.545**	**1.012**	**1.981**	**1.035**	**1.001**	**.9845**	**72.25**	**1.017**
Stddev	.0043	.011	.011	.009	.001	.000	.0069	.75	.009
%RSD	2.202	.1197	1.101	.4395	.1355	.0094	.6993	1.034	.9123
#1	.1900	9.555	.9994	1.983	1.036	1.001	.9775	71.39	1.008
#2	.1982	9.546	1.021	1.972	1.034	1.001	.9913	72.74	1.026
#3	.1963	9.533	1.016	1.989	1.034	1.001	.9847	72.62	1.018
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.078**	**1.022**	**1.038**	**9.982**	**13.91**	**.9789**	**29.23**	**1.039**	**.5272**
Stddev	.012	.015	.007	.004	.01	.0039	.15	.002	.0042
%RSD	1.063	1.427	.6869	.0372	.0365	.3936	.5043	.1443	.8028
#1	1.065	1.007	1.030	9.977	13.91	.9833	29.09	1.038	.5224
#2	1.087	1.036	1.044	9.983	13.92	.9775	29.38	1.041	.5297
#3	1.083	1.023	1.040	9.984	13.91	.9760	29.22	1.039	.5297
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**27.30**	**1.054**	**1.745**	**1.063**	**26.85**	**.4888**	**.5091**	**21.59**	**.9965**
Stddev	.03	.011	.014	.011	.23	.0043	.0043	.00	.0087
%RSD	.1175	1.067	.8233	.9977	.8456	.8850	.8487	.0191	.8734
#1	27.34	1.041	1.729	1.051	26.61	.4848	.5050	21.59	.9865
#2	27.28	1.062	1.757	1.071	27.06	.4934	.5137	21.58	1.001
#3	27.29	1.059	1.748	1.068	26.90	.4881	.5087	21.59	1.002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9229-D-8-B MS Acquired: 11/18/2014 16:53:14 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.243	.9977	.9457	.2183	1.034	.9836	1.052
Stddev	.003	.0120	.0022	.0039	.030	.0063	.009
%RSD	.2062	1.205	.2346	1.781	2.912	.6442	.8557
#1	1.246	.9841	.9447	.2138	.9995	.9780	1.042
#2	1.241	1.002	.9442	.2200	1.052	.9824	1.059
#3	1.242	1.007	.9483	.2210	1.052	.9905	1.056
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3602.1
Stddev	34.7
%RSD	.96335
#1	3642.0
#2	3578.5
#3	3586.0

Sample Name: 160-9229-D-8-C MSD Acquired: 11/18/2014 16:56:51 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1882**	**9.220**	**.9421**	**1.916**	**.9894**	**.9615**	**.9457**	**68.05**	**.9555**
Stddev	.0031	.052	.0145	.004	.0050	.0052	.0177	.73	.0147
%RSD	1.635	.5638	1.544	.2229	.5008	.5445	1.877	1.079	1.535
#1	.1916	9.249	.9299	1.916	.9930	.9660	.9435	67.80	.9464
#2	.1874	9.251	.9382	1.911	.9915	.9628	.9291	67.47	.9476
#3	.1856	9.160	.9582	1.920	.9838	.9558	.9644	68.88	.9724
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.010**	**.9449**	**.9692**	**9.556**	**13.40**	**.9454**	**28.64**	**1.006**	**.5011**
Stddev	.014	.0147	.0195	.040	.05	.0069	.23	.005	.0081
%RSD	1.332	1.555	2.015	.4227	.4060	.7302	.8145	.4720	1.611
#1	1.003	.9594	.9598	9.600	13.46	.9496	28.88	1.010	.4976
#2	1.002	.9453	.9561	9.549	13.41	.9493	28.63	1.006	.4954
#3	1.026	.9300	.9916	9.520	13.35	.9375	28.41	1.001	.5104
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**26.45**	**.9867**	**1.642**	**.9984**	**25.52**	**.4668**	**.4767**	**21.14**	**.9498**
Stddev	.08	.0136	.027	.0120	.42	.0098	.0137	.12	.0106
%RSD	.3113	1.377	1.619	1.204	1.648	2.106	2.884	.5647	1.120
#1	26.52	.9816	1.630	.9949	25.29	.4599	.4672	21.22	.9438
#2	26.47	.9764	1.624	.9885	25.26	.4625	.4704	21.21	.9436
#3	26.36	1.002	1.673	1.012	26.01	.4781	.4925	21.01	.9621
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9229-D-8-C MSD Acquired: 11/18/2014 16:56:51 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.192	.9296	.9183	.2081	.9669	.9552	.9850
Stddev	.006	.0076	.0044	.0020	.0294	.0042	.0127
%RSD	.5011	.8127	.4844	.9799	3.042	.4414	1.291
#1	1.197	.9378	.9204	.2068	1.001	.9558	.9773
#2	1.194	.9229	.9213	.2070	.9475	.9591	.9781
#3	1.185	.9280	.9132	.2105	.9526	.9508	.9997
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3673.7
Stddev	16.5
%RSD	.44903
#1	3654.9
#2	3685.6
#3	3680.7

Sample Name: 160-9229-D-9-A Acquired: 11/18/2014 17:00:27 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**.0441**	**<.0000**	**.0660**	**.0494**	**.0001**	**<.0000**	**56.00**	**.0001**
Stddev	.0009	.0106	.0007	.0022	.0001	.0000	.0032	.64	.0002
%RSD	793.9	24.12	21.35	3.390	.2687	18.03	4195.	1.149	258.0
#1	.0006	.0558	-.0035	.0685	.0494	.0001	.0017	56.74	.0002
#2	-.0009	.0412	-.0026	.0643	.0496	.0001	-.0038	55.56	-.0001
#3	.0006	.0352	-.0040	.0651	.0493	.0001	.0019	55.69	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0165**	**.0073**	**.0056**	**.0674**	**4.070**	**.0056**	**18.38**	**.0689**	**.0266**
Stddev	.0007	.0019	.0018	.0015	.031	.0007	.11	.0002	.0005
%RSD	4.289	26.35	32.25	2.153	.7513	11.98	.5789	.3074	1.726
#1	.0173	.0054	.0051	.0681	4.090	.0055	18.50	.0689	.0268
#2	.0160	.0072	.0040	.0683	4.034	.0064	18.33	.0687	.0269
#3	.0162	.0092	.0075	.0657	4.085	.0051	18.30	.0691	.0260
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**16.49**	**.0125**	**.4008**	**.0147**	**15.64**	**.0042**	**.0021**	**20.08**	**<.0000**
Stddev	.05	.0005	.0048	.0012	.22	.0038	.0024	.05	.0009
%RSD	.2790	3.887	1.197	8.362	1.393	89.60	111.5	.2341	143.8
#1	16.51	.0130	.4054	.0136	15.88	.0014	.0044	20.11	.0004
#2	16.44	.0122	.3958	.0144	15.47	.0085	.0023	20.02	-.0011
#3	16.52	.0122	.4013	.0160	15.56	.0028	-.0003	20.10	-.0011
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9229-D-9-A Acquired: 11/18/2014 17:00:27 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2332	.0073	.0024	<.0000	.0601	.0203	.0295
Stddev	.0007	.0051	.0003	.0010	.0131	.0056	.0004
%RSD	.3104	69.71	11.52	78.76	21.71	27.39	1.190
#1	.2338	.0128	.0026	-.0025	.0459	.0229	.0299
#2	.2324	.0029	.0024	-.0009	.0715	.0240	.0295
#3	.2335	.0060	.0021	-.0005	.0629	.0139	.0292
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3774.6
Stddev	9.3
%RSD	.24599
#1	3763.9
#2	3781.1
#3	3778.6

Sample Name: 160-9229-D-10-A Acquired: 11/18/2014 17:04:19 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0115	<.0000	.0429	.0534	.0001	<.0000	56.30	.0001
Stddev	.0007	.0127	.0015	.0026	.0003	.0001	.0072	.75	.0002
%RSD	94.28	110.3	161.7	6.040	.5643	104.0	146.7	1.324	135.6
#1	-.0014	.0221	-.0024	.0409	.0537	.0001	.0016	56.64	.0003
#2	-.0007	-.0026	-.0007	.0458	.0534	.0000	-.0036	56.81	.0001
#3	-.0001	.0150	.0004	.0420	.0531	.0001	-.0126	55.44	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	.0234	.0015	.0141	4.262	.0056	17.73	.0004	.0033
Stddev	.0003	.0014	.0028	.0006	.025	.0008	.08	.0002	.0002
%RSD	120.9	5.836	196.2	3.959	.5738	13.74	.4608	56.29	6.007
#1	-.0001	.0222	.0003	.0144	4.248	.0047	17.75	.0005	.0034
#2	.0004	.0249	-.0007	.0145	4.290	.0059	17.80	.0004	.0035
#3	.0006	.0231	.0047	.0135	4.248	.0062	17.64	.0001	.0031
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	15.82	.0057	.0152	.0119	14.73	.0038	<.0000	19.34	<.0000
Stddev	.11	.0005	.0018	.0023	.26	.0008	.0023	.12	.0007
%RSD	.7103	8.073	11.84	19.01	1.745	21.13	975.0	.6436	342.2
#1	15.86	.0062	.0170	.0133	14.81	.0041	.0017	19.38	-.0011
#2	15.91	.0055	.0153	.0132	14.95	.0029	-.0028	19.44	.0003
#3	15.69	.0053	.0134	.0093	14.45	.0045	.0003	19.20	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9229-D-10-A Acquired: 11/18/2014 17:04:19 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2247	.0103	.0023	.0009	.0809	.0216	.0316
Stddev	.0013	.0023	.0007	.0011	.0294	.0012	.0005
%RSD	.5725	22.04	32.07	111.5	36.29	5.484	1.491
#1	.2253	.0083	.0030	.0019	.1065	.0222	.0320
#2	.2255	.0127	.0015	.0011	.0872	.0202	.0317
#3	.2232	.0097	.0024	-.0002	.0489	.0224	.0311
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3754.7
Stddev	23.9
%RSD	.63675
#1	3734.0
#2	3749.3
#3	3780.9

Sample Name: 160-9229-D-11-A Acquired: 11/18/2014 17:08:11 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0210	<.0000	.0537	.0284	.0000	.0018	57.62	.0001
Stddev	.0005	.0129	.0013	.0043	.0002	.0001	.0050	.53	.0001
%RSD	53.30	61.22	42.07	7.992	.5497	220.3	283.7	.9180	61.48
#1	-.0014	.0345	-.0022	.0573	.0285	.0000	.0010	57.04	.0001
#2	-.0004	.0199	-.0027	.0548	.0282	.0000	.0072	57.76	.0002
#3	-.0012	.0088	-.0047	.0489	.0284	.0001	-.0029	58.07	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0014	.0074	.0061	.0410	4.462	.0054	19.53	.0042	.0278
Stddev	.0006	.0007	.0016	.0004	.023	.0025	.17	.0004	.0005
%RSD	40.92	8.876	27.00	1.006	.5102	46.12	.8929	10.13	1.771
#1	.0015	.0081	.0076	.0407	4.436	.0026	19.39	.0046	.0272
#2	.0007	.0068	.0043	.0408	4.480	.0072	19.48	.0038	.0280
#3	.0018	.0074	.0064	.0415	4.469	.0063	19.73	.0042	.0282
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	18.99	.0093	1.107	.0124	26.02	.0009	.0004	20.11	<.0000
Stddev	.05	.0006	.012	.0007	.29	.0009	.0023	.20	.0010
%RSD	.2784	6.577	1.112	5.242	1.118	101.6	577.5	.9761	84.32
#1	19.01	.0098	1.093	.0128	25.71	-.0001	.0005	19.97	-.0011
#2	18.93	.0094	1.116	.0117	26.04	.0014	-.0020	20.02	-.0023
#3	19.03	.0086	1.113	.0128	26.29	.0013	.0027	20.33	-.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9229-D-11-A Acquired: 11/18/2014 17:08:11 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2337	.0031	.0023	<.0000	.0032	.0035	.0120
Stddev	.0013	.0045	.0004	.0002	.0472	.0012	.0001
%RSD	.5535	147.3	17.56	42.90	1457.	33.21	.9893
#1	.2337	-.0021	.0023	-.0009	-.0319	.0046	.0119
#2	.2324	.0051	.0020	-.0004	.0569	.0037	.0121
#3	.2350	.0063	.0028	-.0005	-.0152	.0023	.0119
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3734.1
Stddev	34.7
%RSD	.92859
#1	3772.4
#2	3724.9
#3	3704.9

Sample Name: MB 160-157007/1-A Acquired: 11/18/2014 17:12:03 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0004**	**.0102**	**<.0000**	**.0077**	**.0000**	**.0000**	**<.0000**	**.0218**	**.0000**
Stddev	.0012	.0155	.0020	.0027	.0003	.0000	.0020	.0023	.0001
%RSD	275.5	151.9	91.22	34.89	820.9	70.37	171.3	10.76	259.6
#1	.0017	.0259	-.0014	.0084	.0004	.0000	-.0031	.0241	-.0001
#2	.0001	-.0050	-.0044	.0048	-.0002	.0000	-.0011	.0219	.0001
#3	-.0005	.0097	-.0007	.0100	-.0001	.0000	.0008	.0194	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**<.0000**	**.0002**	**.0035**	**.0046**	**<.0000**	**.0015**	**<.0000**	**<.0000**	**.0001**
Stddev	.0003	.0016	.0009	.0008	.0323	.0007	.0106	.0005	.0007
%RSD	148.9	993.9	24.32	17.12	640.1	44.79	331.3	166.3	841.7
#1	.0001	.0009	.0041	.0055	.0321	.0010	.0039	-.0008	.0008
#2	-.0006	.0012	.0025	.0041	-.0272	.0012	.0019	-.0004	-.0007
#3	-.0002	-.0017	.0039	.0043	-.0200	.0022	-.0154	.0002	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0170**	**.0001**	**.0009**	**<.0000**	**.0075**	**.0041**	**<.0000**	**.0079**	**.0003**
Stddev	.0062	.0003	.0011	.0008	.0003	.0027	.0055	.0078	.0008
%RSD	36.53	575.2	121.1	108.7	3.438	64.34	2828.	98.17	232.6
#1	.0098	.0000	-.0003	-.0011	.0075	.0059	-.0020	.0164	.0001
#2	.0209	-.0002	.0019	.0002	.0077	.0011	-.0046	.0061	-.0003
#3	.0202	.0004	.0010	-.0013	.0072	.0054	.0060	.0012	.0012
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: MB 160-157007/1-A Acquired: 11/18/2014 17:12:03 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0083	.0005	.0018	.0409	<.0000	.0067
Stddev	.0000	.0070	.0004	.0003	.0393	.0015	.0002
%RSD	32.16	84.89	64.23	16.68	96.05	384.1	2.473
#1	.0001	.0082	.0003	.0017	.0799	.0008	.0066
#2	.0001	.0154	.0010	.0016	.0416	.0001	.0069
#3	.0001	.0013	.0004	.0021	.0013	-.0021	.0067
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3662.4
Stddev	2.5
%RSD	.06885
#1	3660.2
#2	3665.2
#3	3661.8

Sample Name: CCV Acquired: 11/18/2014 17:16:01 Type: QC
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.025**	**48.78**	**5.176**	**4.929**	**5.018**	**5.010**	**5.189**	**52.22**	**5.179**
Stddev	.040	.30	.188	.021	.025	.073	.207	1.88	.200
%RSD	3.888	.6125	3.622	.4161	.4921	1.453	3.992	3.608	3.855
#1	1.069	48.68	5.393	4.916	5.001	5.078	5.426	54.39	5.409
#2	1.017	48.55	5.080	4.918	5.007	4.933	5.097	51.15	5.074
#3	.9904	49.12	5.057	4.952	5.047	5.021	5.044	51.11	5.054
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.234**	**5.199**	**5.182**	**50.20**	**49.62**	**4.924**	**49.70**	**4.979**	**1.045**
Stddev	.194	.189	.198	.20	.19	.042	.38	.029	.041
%RSD	3.708	3.634	3.812	.3887	.3749	.8568	.7712	.5922	3.930
#1	5.457	5.411	5.410	50.36	49.54	4.891	50.00	4.986	1.092
#2	5.133	5.138	5.081	49.98	49.48	4.909	49.27	4.946	1.025
#3	5.111	5.048	5.056	50.26	49.83	4.972	49.83	5.004	1.018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**49.21**	**5.251**	**52.70**	**5.255**	**51.60**	**1.031**	**1.036**	**4.962**	**5.242**
Stddev	.28	.199	1.92	.202	1.97	.040	.040	.025	.198
%RSD	.5690	3.779	3.647	3.837	3.808	3.913	3.892	.4947	3.770
#1	49.09	5.480	54.92	5.488	53.85	1.077	1.083	4.955	5.470
#2	49.01	5.148	51.65	5.149	50.70	1.010	1.016	4.942	5.136
#3	49.53	5.126	51.53	5.129	50.24	1.005	1.010	4.989	5.120
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: CCV Acquired: 11/18/2014 17:16:01 Type: QC
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.938**	**5.065**	**4.975**	**1.062**	**5.169**	**4.966**	**5.203**
Stddev	.040	.179	.013	.040	.224	.036	.199
%RSD	.8031	3.535	.2522	3.718	4.327	.7170	3.832
#1	4.964	5.264	4.967	1.108	5.418	4.962	5.433
#2	4.893	5.010	4.969	1.039	5.104	4.932	5.106
#3	4.959	4.919	4.990	1.039	4.985	5.003	5.071
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**3656.2**
Stddev	125.5
%RSD	3.4326
#1	3511.3
#2	3726.7
#3	3730.7

Sample Name: CCB Acquired: 11/18/2014 17:19:44 Type: QC
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0026	.0002	.0210	.0008	.0005	<.0000	.0039	.0001
Stddev	.0016	.0016	.0022	.0033	.0001	.0000	.0036	.0010	.0004
%RSD	1121.	61.78	1196.	15.77	6.607	2.879	251.4	25.42	374.3
#1	.0016	.0044	-.0021	.0173	.0008	.0005	-.0043	.0038	.0005
#2	-.0016	.0012	.0023	.0237	.0009	.0005	-.0026	.0030	-.0001
#3	-.0005	.0024	.0004	.0220	.0007	.0005	.0026	.0049	-.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0003	.0018	.0047	.0048	.0006	<.0000	.0006	.0002
Stddev	.0002	.0003	.0025	.0015	.0402	.0009	.0098	.0003	.0002
%RSD	68.03	83.12	136.1	31.77	832.0	166.5	81.69	51.20	113.1
#1	-.0002	.0001	-.0006	.0047	.0484	.0008	-.0121	.0006	.0002
#2	-.0001	.0006	.0043	.0032	-.0032	-.0005	-.0218	.0009	.0005
#3	-.0004	.0002	.0018	.0061	-.0307	.0013	-.0022	.0003	.0000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0025	.0004	.0040	<.0000	.0014	.0028	<.0000	.0067	<.0000
Stddev	.0156	.0002	.0013	.0004	.0018	.0017	.0073	.0091	.0003
%RSD	618.1	37.20	32.31	21.24	136.6	59.61	331.6	135.0	57.84
#1	.0143	.0005	.0038	-.0014	.0029	.0046	-.0092	.0025	-.0004
#2	.0084	.0002	.0054	-.0021	.0018	.0025	-.0027	.0171	-.0010
#3	-.0151	.0005	.0028	-.0021	-.0007	.0013	.0053	.0005	-.0004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Sample Name: CCB Acquired: 11/18/2014 17:19:44 Type: QC
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005	.0038	.0018	.0022	.0001	.0003	.0006
Stddev	.0000	.0025	.0007	.0017	.0392	.0041	.0003
%RSD	9.488	64.92	39.80	78.32	70360.	1537.	55.68
#1	.0005	.0066	.0010	.0035	.0432	-.0043	.0008
#2	.0005	.0020	.0023	.0027	-.0098	.0016	.0008
#3	.0005	.0028	.0022	.0003	-.0333	.0036	.0002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_3710
Units	Cts/S
Avg	3617.8
Stddev	48.0
%RSD	1.3261
#1	3639.0
#2	3651.5
#3	3562.9

Sample Name: LCS 160-157007/2-A Acquired: 11/18/2014 17:23:41 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2039	9.935	1.048	1.990	1.035	1.038	1.042	11.42	1.065
Stddev	.0024	.061	.008	.019	.005	.006	.009	.06	.007
%RSD	1.160	.6110	.7920	.9494	.4929	.6261	.8803	.5187	.6802
#1	.2024	9.931	1.057	1.978	1.036	1.039	1.050	11.49	1.074
#2	.2028	9.877	1.040	1.981	1.030	1.031	1.032	11.38	1.060
#3	.2067	9.998	1.048	2.012	1.040	1.044	1.045	11.39	1.063
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.145	1.073	1.100	10.38	9.941	1.025	9.944	1.028	.5322
Stddev	.005	.010	.004	.05	.018	.007	.103	.008	.0029
%RSD	.4056	.9506	.3764	.4374	.1773	.6611	1.037	.7614	.5453
#1	1.150	1.076	1.105	10.37	9.930	1.029	9.914	1.028	.5355
#2	1.140	1.061	1.099	10.35	9.932	1.018	9.859	1.020	.5313
#3	1.145	1.081	1.097	10.44	9.962	1.030	10.06	1.036	.5299
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.03	1.119	1.102	1.114	9.988	.5130	.5293	.0196	1.057
Stddev	.06	.005	.007	.008	.057	.0043	.0046	.0022	.003
%RSD	.5675	.4232	.6375	.7002	.5680	.8456	.8610	11.37	.2838
#1	10.02	1.125	1.109	1.123	10.05	.5167	.5299	.0199	1.059
#2	9.971	1.117	1.095	1.110	9.942	.5082	.5335	.0172	1.053
#3	10.08	1.116	1.101	1.110	9.972	.5141	.5244	.0216	1.057
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LCS 160-157007/2-A Acquired: 11/18/2014 17:23:41 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.048**	**1.057**	**.9840**	**.2291**	**1.120**	**1.010**	**1.077**
Stddev	.007	.018	.0050	.0021	.039	.008	.007
%RSD	.6454	1.750	.5072	.9280	3.458	.8286	.6236
#1	1.048	1.056	.9839	.2303	1.124	1.010	1.084
#2	1.041	1.039	.9790	.2267	1.080	1.001	1.071
#3	1.054	1.076	.9890	.2304	1.157	1.018	1.075
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**3619.0**
Stddev	19.6
%RSD	.54206
#1	3597.7
#2	3636.4
#3	3622.9

Sample Name: 160-9228-D-5-A Acquired: 11/18/2014 17:27:17 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0044	<.0000	.0242	.0644	.0002	.0010	62.97	.0002
Stddev	.0008	.0029	.0011	.0018	.0004	.0001	.0010	1.37	.0003
%RSD	271.1	64.75	83.80	7.442	.6363	34.50	107.1	2.182	134.8
#1	-.0004	.0016	-.0026	.0252	.0646	.0002	-.0002	61.69	-.0001
#2	-.0010	.0073	-.0004	.0252	.0639	.0001	.0014	62.79	.0004
#3	.0005	.0043	-.0010	.0221	.0646	.0001	.0018	64.42	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	.0471	<.0000	.0166	4.940	.0071	19.60	.0004	.0038
Stddev	.0005	.0003	.0024	.0017	.033	.0013	.22	.0002	.0002
%RSD	246.7	.6385	131.7	9.979	.6770	18.81	1.102	50.48	4.064
#1	.0008	.0474	-.0030	.0182	4.928	.0056	19.41	.0005	.0036
#2	.0000	.0470	-.0035	.0165	4.915	.0075	19.55	.0002	.0038
#3	-.0002	.0469	.0009	.0149	4.978	.0082	19.83	.0005	.0039
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	26.84	.0057	.0191	.0141	12.64	.0032	<.0000	21.18	<.0000
Stddev	.12	.0007	.0006	.0003	.27	.0021	.0036	.09	.0003
%RSD	.4639	11.37	3.192	2.342	2.146	65.99	421.1	.4280	49.18
#1	26.90	.0065	.0191	.0137	12.37	.0031	-.0039	21.15	-.0008
#2	26.70	.0055	.0185	.0141	12.65	.0053	-.0019	21.10	-.0008
#3	26.92	.0052	.0198	.0144	12.91	.0011	.0032	21.28	-.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9228-D-5-A Acquired: 11/18/2014 17:27:17 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2429	.0149	.0020	<.0000	.0546	.0249	.0071
Stddev	.0008	.0086	.0006	.0024	.0300	.0005	.0003
%RSD	.3174	57.82	29.16	153.1	54.99	2.039	4.869
#1	.2437	.0191	.0026	.0004	.0584	.0251	.0069
#2	.2422	.0206	.0021	-.0009	.0229	.0254	.0069
#3	.2428	.0050	.0014	-.0041	.0826	.0244	.0075
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3709.3
Stddev	60.0
%RSD	1.6165
#1	3764.6
#2	3717.8
#3	3645.6

Sample Name: 160-9228-D-5-A SD Acquired: 11/18/2014 17:31:09 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=5

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	<.0000	.0125	.0129	.0000	.0006	13.24	.0003
Stddev	.0009	.0157	.0006	.0040	.0001	.0000	.0017	.20	.0001
%RSD	146.4	17750.	37.02	31.76	.5951	87.35	276.9	1.510	19.88
#1	.0004	.0179	-.0010	.0124	.0130	.0001	.0025	13.08	.0003
#2	-.0008	-.0079	-.0022	.0165	.0129	.0000	.0003	13.47	.0003
#3	-.0014	-.0103	-.0015	.0086	.0130	.0000	-.0009	13.19	.0004
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0110	.0028	.0048	1.017	.0007	4.175	.0000	.0007
Stddev	.0002	.0008	.0032	.0010	.021	.0007	.041	.0002	.0002
%RSD	206.2	7.392	113.2	19.85	2.071	93.40	.9783	478.3	29.12
#1	.0001	.0115	.0016	.0038	.9962	.0005	4.140	.0002	.0005
#2	-.0001	.0101	.0064	.0049	1.038	.0015	4.220	.0000	.0007
#3	-.0003	.0114	.0004	.0057	1.016	.0002	4.165	-.0001	.0008
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.470	.0012	.0064	.0018	2.517	.0021	.0006	4.327	.0003
Stddev	.018	.0002	.0016	.0013	.052	.0018	.0050	.008	.0010
%RSD	.3223	12.69	25.08	73.46	2.067	89.00	805.7	.1797	307.1
#1	5.451	.0011	.0076	.0018	2.470	.0003	-.0042	4.323	.0002
#2	5.486	.0013	.0046	.0032	2.573	.0019	.0058	4.336	.0014
#3	5.471	.0013	.0069	.0005	2.507	.0040	.0002	4.322	-.0006
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9228-D-5-A SD Acquired: 11/18/2014 17:31:09 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=5

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0501	.0055	.0015	.0010	.0448	.0047	.0085
Stddev	.0001	.0083	.0005	.0025	.0501	.0035	.0005
%RSD	.2546	148.9	34.57	252.4	111.8	75.23	5.313
#1	.0500	.0021	.0014	.0025	.1010	.0009	.0084
#2	.0502	.0150	.0020	.0023	.0284	.0053	.0090
#3	.0500	-.0004	.0010	-.0019	.0050	.0079	.0081
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3662.9
Stddev	48.7
%RSD	1.3297
#1	3697.3
#2	3607.2
#3	3684.3

Sample Name: 160-9228-D-5-B MS Acquired: 11/18/2014 17:35:02 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1984**	**9.541**	**1.000**	**1.932**	**1.047**	**.9991**	**.9734**	**72.04**	**1.013**
Stddev	.0029	.028	.008	.007	.003	.0034	.0049	.82	.009
%RSD	1.476	.2920	.8177	.3714	.2555	.3363	.5071	1.137	.8508
#1	.1994	9.566	.9981	1.936	1.049	1.003	.9750	72.29	1.014
#2	.2007	9.545	1.009	1.924	1.044	.9979	.9773	72.70	1.020
#3	.1951	9.511	.9930	1.937	1.047	.9965	.9678	71.12	1.003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.048**	**1.068**	**1.023**	**9.909**	**14.51**	**.9816**	**29.01**	**.9747**	**.4993**
Stddev	.011	.016	.007	.004	.06	.0019	.18	.0058	.0028
%RSD	1.035	1.485	.6600	.0435	.3807	.1944	.6049	.5900	.5619
#1	1.052	1.074	1.021	9.908	14.54	.9833	29.19	.9808	.4989
#2	1.057	1.080	1.030	9.914	14.45	.9796	28.98	.9738	.5022
#3	1.036	1.050	1.017	9.905	14.55	.9820	28.84	.9694	.4967
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**36.19**	**1.031**	**1.070**	**1.046**	**22.22**	**.4819**	**.5087**	**17.02**	**.9827**
Stddev	.13	.009	.013	.006	.20	.0056	.0010	.07	.0091
%RSD	.3613	.9168	1.255	.5869	.8792	1.165	.1869	.4083	.9253
#1	36.34	1.033	1.075	1.045	22.23	.4846	.5085	17.10	.9831
#2	36.09	1.040	1.080	1.053	22.41	.4856	.5078	17.00	.9915
#3	36.13	1.021	1.055	1.041	22.02	.4754	.5097	16.97	.9734
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9228-D-5-B MS Acquired: 11/18/2014 17:35:02 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.233	1.007	.9428	.2153	1.129	.9881	1.023
Stddev	.005	.013	.0027	.0017	.008	.0064	.009
%RSD	.4401	1.318	.2858	.7931	.6806	.6437	.8391
#1	1.239	1.020	.9449	.2173	1.138	.9955	1.025
#2	1.229	1.008	.9437	.2144	1.126	.9843	1.030
#3	1.230	.9932	.9397	.2143	1.123	.9846	1.014
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3560.9
Stddev	39.9
%RSD	1.1213
#1	3551.6
#2	3526.5
#3	3604.7

Sample Name: 160-9228-D-5-C MSD Acquired: 11/18/2014 17:38:39 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1972**	**9.949**	**1.032**	**2.008**	**1.093**	**1.041**	**.9979**	**75.92**	**1.037**
Stddev	.0025	.026	.005	.006	.003	.002	.0137	.56	.011
%RSD	1.275	.2656	.5140	.3176	.2326	.2341	1.369	.7346	1.039
#1	.1947	9.952	1.037	2.014	1.094	1.044	1.014	76.52	1.048
#2	.1973	9.973	1.032	2.008	1.094	1.042	.9895	75.83	1.037
#3	.1997	9.921	1.027	2.002	1.090	1.039	.9906	75.41	1.027
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.084**	**1.089**	**1.057**	**10.30**	**15.19**	**1.019**	**30.28**	**1.006**	**.5157**
Stddev	.010	.004	.017	.04	.05	.004	.11	.002	.0048
%RSD	.9558	.3527	1.589	.3739	.3272	.3386	.3560	.1828	.9237
#1	1.095	1.090	1.073	10.35	15.24	1.020	30.40	1.006	.5207
#2	1.083	1.085	1.058	10.27	15.15	1.022	30.26	1.007	.5153
#3	1.074	1.093	1.040	10.29	15.16	1.016	30.19	1.004	.5112
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**38.16**	**1.068**	**1.101**	**1.082**	**23.00**	**.5033**	**.5240**	**22.30**	**1.017**
Stddev	.10	.010	.010	.012	.24	.0049	.0045	.09	.010
%RSD	.2518	.8999	.9485	1.087	1.041	.9697	.8593	.4208	1.018
#1	38.24	1.078	1.111	1.094	23.23	.5081	.5282	22.27	1.027
#2	38.18	1.067	1.102	1.081	23.02	.5035	.5245	22.41	1.016
#3	38.06	1.058	1.090	1.071	22.75	.4983	.5192	22.23	1.007
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9228-D-5-C MSD Acquired: 11/18/2014 17:38:39 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.290	1.044	.9832	.2190	1.128	1.025	1.058
Stddev	.004	.007	.0044	.0034	.024	.002	.011
%RSD	.3218	.6512	.4433	1.565	2.132	.1753	1.065
#1	1.292	1.042	.9880	.2230	1.105	1.025	1.070
#2	1.293	1.038	.9795	.2174	1.153	1.027	1.057
#3	1.285	1.051	.9820	.2167	1.127	1.024	1.048
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3673.8
Stddev	29.1
%RSD	.79117
#1	3640.2
#2	3690.3
#3	3690.8

Sample Name: 160-9228-D-6-A Acquired: 11/18/2014 17:42:15 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0015**	**.0170**	**<.0000**	**.0210**	**.0560**	**.0000**	**.0000**	**55.20**	**.0001**
Stddev	.0010	.0080	.0018	.0040	.0001	.0001	.0063	.24	.0003
%RSD	68.68	46.90	82.90	18.97	.1576	151.3	17020.	.4259	256.4
#1	.0021	.0221	-.0041	.0219	.0560	.0001	.0057	55.20	.0000
#2	.0003	.0210	-.0014	.0166	.0559	.0000	-.0068	55.44	.0004
#3	.0020	.0078	-.0009	.0245	.0561	.0000	.0012	54.97	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**<.0000**	**.0339**	**.0021**	**.0154**	**4.332**	**.0047**	**17.44**	**.0003**	**.0034**
Stddev	.0002	.0013	.0046	.0011	.060	.0016	.11	.0004	.0002
%RSD	128.5	3.813	219.0	6.838	1.378	33.25	.6582	126.1	7.052
#1	-.0004	.0325	.0074	.0149	4.269	.0065	17.39	.0007	.0035
#2	.0001	.0351	-.0001	.0166	4.339	.0038	17.58	.0000	.0035
#3	-.0002	.0341	-.0010	.0147	4.388	.0038	17.37	.0002	.0031
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**23.45**	**.0056**	**.0134**	**.0109**	**17.82**	**.0067**	**<.0000**	**18.80**	**<.0000**
Stddev	.07	.0003	.0013	.0027	.07	.0025	.0052	.11	.0004
%RSD	.3068	4.878	9.531	24.61	.3769	36.72	404.6	.5817	42.22
#1	23.40	.0058	.0127	.0126	17.77	.0058	-.0058	18.81	-.0015
#2	23.53	.0057	.0127	.0122	17.80	.0049	.0044	18.90	-.0008
#3	23.42	.0053	.0149	.0078	17.90	.0095	-.0024	18.69	-.0007
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9228-D-6-A Acquired: 11/18/2014 17:42:15 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2110	.0076	.0023	.0006	.0538	.0206	.0080
Stddev	.0005	.0081	.0004	.0014	.0195	.0007	.0001
%RSD	.2400	106.6	18.84	223.1	36.25	3.293	1.677
#1	.2106	.0014	.0027	.0021	.0704	.0207	.0081
#2	.2115	.0046	.0024	-.0007	.0323	.0199	.0078
#3	.2107	.0168	.0019	.0005	.0586	.0212	.0079
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3658.7
Stddev	36.8
%RSD	1.0053
#1	3669.2
#2	3617.9
#3	3689.2

Sample Name: 160-9228-D-7-A Acquired: 11/18/2014 17:46:08 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0142	<.0000	.0414	.0580	.0000	.0026	56.01	.0001
Stddev	.0009	.0162	.0014	.0032	.0003	.0000	.0010	.78	.0001
%RSD	580.7	114.5	44.77	7.685	.5653	89.17	39.49	1.388	86.99
#1	.0009	.0320	-.0034	.0451	.0577	.0000	.0014	56.72	.0002
#2	-.0009	.0003	-.0016	.0397	.0579	.0000	.0032	56.12	.0003
#3	-.0005	.0102	-.0043	.0395	.0583	.0001	.0032	55.18	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0220	.0025	.0193	4.732	.0054	18.78	.0010	.0029
Stddev	.0006	.0024	.0032	.0016	.028	.0012	.09	.0001	.0003
%RSD	782.5	10.91	128.3	8.347	.5919	21.51	.4588	10.07	8.957
#1	.0001	.0211	.0062	.0210	4.711	.0042	18.68	.0010	.0031
#2	-.0007	.0247	.0011	.0178	4.722	.0054	18.83	.0009	.0026
#3	.0004	.0201	.0003	.0192	4.764	.0065	18.83	.0010	.0030
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	17.16	.0048	.0129	.0161	14.87	.0015	.0011	20.53	<.0000
Stddev	.07	.0003	.0022	.0015	.33	.0035	.0026	.14	.0005
%RSD	.3925	5.219	17.10	9.039	2.201	237.6	249.5	.6778	48.30
#1	17.08	.0047	.0147	.0178	15.17	.0048	.0036	20.38	-.0006
#2	17.19	.0051	.0135	.0157	14.93	.0019	.0012	20.65	-.0010
#3	17.21	.0047	.0104	.0150	14.52	-.0022	-.0016	20.57	-.0016
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9228-D-7-A Acquired: 11/18/2014 17:46:08 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2442	.0077	.0017	<.0000	.1342	.0227	.0068
Stddev	.0004	.0032	.0005	.0018	.0118	.0019	.0003
%RSD	.1738	41.85	29.91	234.1	8.766	8.508	3.763
#1	.2439	.0115	.0021	-.0017	.1220	.0223	.0070
#2	.2441	.0060	.0011	-.0020	.1455	.0249	.0068
#3	.2447	.0057	.0019	.0013	.1351	.0211	.0065
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3925.6
Stddev	22.5
%RSD	.57371
#1	3948.2
#2	3903.1
#3	3925.6

Sample Name: 160-9228-F-9-A Acquired: 11/18/2014 17:50:00 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0557	<.0000	.0491	.0275	.0000	.0004	56.17	.0001
Stddev	.0014	.0022	.0031	.0048	.0002	.0000	.0079	.31	.0002
%RSD	155.1	3.950	91.17	9.712	.8191	165.9	2089.	.5591	171.2
#1	.0007	.0544	-.0035	.0541	.0276	.0000	.0079	55.83	.0000
#2	-.0014	.0544	-.0065	.0487	.0273	.0001	-.0079	56.46	.0003
#3	-.0020	.0582	-.0003	.0446	.0277	.0000	.0012	56.22	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0089	.0041	.0068	.1835	4.259	.0051	17.97	.0546	.0276
Stddev	.0004	.0021	.0002	.0037	.046	.0011	.08	.0008	.0010
%RSD	4.832	49.70	2.558	2.025	1.078	21.54	.4253	1.389	3.644
#1	.0088	.0064	.0068	.1875	4.232	.0062	18.00	.0553	.0264
#2	.0086	.0036	.0069	.1803	4.233	.0052	17.88	.0538	.0284
#3	.0094	.0024	.0066	.1826	4.312	.0040	18.02	.0548	.0279
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	18.65	.0105	1.110	.0139	26.30	.0053	<.0000	19.07	<.0000
Stddev	.14	.0004	.005	.0035	.28	.0032	.0008	.23	.0003
%RSD	.7344	3.965	.4465	25.27	1.069	59.58	24.13	1.183	29.61
#1	18.72	.0110	1.106	.0179	26.03	.0087	-.0039	19.17	-.0011
#2	18.49	.0101	1.115	.0122	26.59	.0046	-.0024	18.81	-.0012
#3	18.74	.0106	1.109	.0115	26.29	.0025	-.0033	19.23	-.0007
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9228-F-9-A Acquired: 11/18/2014 17:50:00 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2179	.0087	.0029	<.0000	.1071	.0052	.0122
Stddev	.0016	.0024	.0007	.0018	.0067	.0009	.0000
%RSD	.7140	27.88	26.15	302.0	6.269	17.23	.1395
#1	.2190	.0076	.0027	-.0018	.1088	.0061	.0122
#2	.2161	.0070	.0022	.0014	.0997	.0051	.0122
#3	.2186	.0115	.0037	-.0014	.1129	.0043	.0122
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3674.5
Stddev	16.4
%RSD	.44502
#1	3666.4
#2	3663.7
#3	3693.3

Sample Name: MB 160-152424/1-A Acquired: 11/18/2014 17:53:52 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0149	<.0000	.0013	.0007	.0000	.0014	.0445	<.0000
Stddev	.0006	.0058	.0029	.0020	.0003	.0000	.0045	.0006	.0002
%RSD	82.79	38.90	118.9	151.4	47.61	1666.	314.9	1.433	119.7
#1	-.0015	.0090	-.0011	.0007	.0009	.0000	.0067	.0440	-.0001
#2	-.0007	.0153	-.0004	.0036	.0009	.0000	-.0007	.0453	.0000
#3	-.0002	.0206	-.0057	-.0003	.0003	.0000	-.0017	.0443	-.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	.0024	.0056	.0149	<.0000	<.0000	.0000	.0002
Stddev	.0004	.0003	.0032	.0022	.0255	.0013	.0135	.0003	.0001
%RSD	37.60	38.41	130.5	38.45	171.2	218.0	299.3	1079.	49.09
#1	-.0006	-.0006	-.0008	.0081	.0280	.0008	.0106	.0004	.0002
#2	-.0014	-.0008	.0055	.0042	-.0145	-.0016	-.0086	-.0001	.0001
#3	-.0009	-.0012	.0027	.0046	.0312	-.0010	-.0155	-.0002	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0480	.0007	.0021	<.0000	.0094	.0019	<.0000	.0117	.0005
Stddev	.0106	.0001	.0007	.0021	.0033	.0022	.0024	.0116	.0009
%RSD	22.12	19.22	33.38	126.0	35.15	112.1	158.1	99.43	166.0
#1	.0435	.0006	.0024	-.0036	.0125	.0036	.0009	-.0014	.0015
#2	.0602	.0009	.0013	-.0017	.0095	.0027	-.0015	.0208	-.0002
#3	.0404	.0007	.0026	.0005	.0060	-.0005	-.0039	.0156	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: MB 160-152424/1-A Acquired: 11/18/2014 17:53:52 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0030	.0031	.0005	.0001	.0957	<.0000	.0096
Stddev	.0000	.0083	.0004	.0001	.0044	.0017	.0003
%RSD	.4960	268.0	81.58	60.33	4.624	78.36	2.984
#1	.0030	.0123	.0008	.0001	.1006	-.0005	.0094
#2	.0030	-.0037	.0000	.0002	.0944	-.0038	.0099
#3	.0030	.0006	.0008	.0001	.0920	-.0020	.0094
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3802.2
Stddev	19.2
%RSD	.50541
#1	3822.2
#2	3783.8
#3	3800.6

Sample Name: LCS 160-152424/2-A Acquired: 11/18/2014 17:57:49 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1921	9.632	.9948	1.974	1.017	1.014	1.016	10.74	1.019
Stddev	.0024	.075	.0197	.020	.004	.005	.020	.14	.016
%RSD	1.242	.7834	1.982	.9866	.3629	.4524	1.936	1.350	1.579
#1	.1948	9.553	.9728	1.953	1.013	1.009	.9939	10.58	1.001
#2	.1907	9.703	1.001	1.992	1.021	1.018	1.023	10.77	1.025
#3	.1907	9.640	1.011	1.976	1.016	1.014	1.031	10.86	1.032
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.093	1.032	1.058	10.32	9.835	1.002	9.567	.9899	.5190
Stddev	.016	.008	.016	.03	.051	.006	.076	.0090	.0098
%RSD	1.418	.7630	1.534	.2958	.5145	.6243	.7952	.9118	1.879
#1	1.075	1.041	1.039	10.29	9.808	.9969	9.490	.9795	.5078
#2	1.100	1.025	1.065	10.35	9.894	1.009	9.642	.9960	.5238
#3	1.104	1.031	1.069	10.31	9.805	1.000	9.570	.9942	.5255
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.784	1.083	1.042	1.067	9.783	.4994	.5119	4.854	1.034
Stddev	.046	.017	.017	.019	.179	.0098	.0089	.052	.017
%RSD	.4722	1.519	1.650	1.761	1.826	1.965	1.734	1.067	1.677
#1	9.734	1.065	1.023	1.047	9.579	.4882	.5020	4.797	1.014
#2	9.825	1.088	1.045	1.072	9.862	.5038	.5145	4.897	1.041
#3	9.792	1.096	1.057	1.083	9.909	.5063	.5192	4.869	1.047
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LCS 160-152424/2-A Acquired: 11/18/2014 17:57:49 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.019	1.011	.9990	.2182	1.162	.9706	1.101
Stddev	.004	.012	.0031	.0048	.065	.0141	.018
%RSD	.4376	1.154	.3088	2.197	5.548	1.454	1.599
#1	1.015	1.024	.9975	.2127	1.223	.9546	1.081
#2	1.024	1.001	1.003	.2212	1.094	.9815	1.106
#3	1.018	1.009	.9970	.2207	1.170	.9756	1.116
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3752.2
Stddev	35.5
%RSD	.94507
#1	3792.5
#2	3738.1
#3	3725.9

Sample Name: CCV Acquired: 11/18/2014 18:01:26 Type: QC
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.9629**	**47.62**	**4.973**	**4.935**	**4.964**	**4.939**	**4.993**	**50.24**	**4.979**
Stddev	.0061	.30	.059	.018	.019	.083	.065	.64	.059
%RSD	.6380	.6280	1.190	.3537	.3842	1.678	1.308	1.264	1.184
#1	.9688	47.87	4.964	4.936	4.980	4.868	4.980	50.14	4.979
#2	.9565	47.29	4.919	4.918	4.943	4.919	4.935	49.67	4.921
#3	.9634	47.70	5.036	4.952	4.969	5.030	5.064	50.93	5.039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.067**	**5.019**	**4.975**	**50.32**	**49.52**	**4.784**	**48.39**	**4.858**	**1.011**
Stddev	.061	.062	.063	.19	.18	.029	.55	.038	.011
%RSD	1.209	1.244	1.258	.3728	.3626	.6018	1.130	.7806	1.116
#1	5.068	5.080	4.983	50.41	49.61	4.811	48.69	4.887	1.011
#2	5.005	4.956	4.909	50.10	49.32	4.754	47.76	4.815	.9990
#3	5.127	5.021	5.034	50.44	49.64	4.788	48.71	4.873	1.022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**48.40**	**5.079**	**50.56**	**5.079**	**49.79**	**.9892**	**1.004**	**4.803**	**5.096**
Stddev	.23	.061	.63	.060	.64	.0118	.014	.052	.056
%RSD	.4753	1.205	1.240	1.191	1.291	1.190	1.395	1.077	1.090
#1	48.57	5.081	50.47	5.069	49.73	.9872	1.014	4.829	5.101
#2	48.14	5.016	49.99	5.024	49.18	.9786	.9877	4.743	5.038
#3	48.49	5.138	51.23	5.144	50.46	1.002	1.010	4.836	5.148
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: CCV Acquired: 11/18/2014 18:01:26 Type: QC
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.890**	**4.868**	**4.996**	**1.016**	**4.919**	**4.837**	**5.052**
Stddev	.070	.044	.019	.010	.095	.044	.058
%RSD	1.424	.9123	.3844	1.013	1.940	.9088	1.151
#1	4.844	4.912	4.989	1.014	4.976	4.861	5.051
#2	4.855	4.824	4.981	1.007	4.809	4.786	4.994
#3	4.970	4.869	5.018	1.027	4.972	4.863	5.111
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**3696.0**
Stddev	32.0
%RSD	.86495
#1	3674.4
#2	3732.7
#3	3680.9

Sample Name: CCB Acquired: 11/18/2014 18:05:10 Type: QC
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0033	<.0000	.0208	.0006	.0005	<.0000	.0038
Stddev	.0007	.0063	.0031	.0023	.0001	.0002	.0038	.0015
%RSD	108.1	190.1	89.48	11.24	16.01	29.97	107.1	39.80
#1	-.0009	.0064	-.0069	.0201	.0005	.0004	-.0010	.0043
#2	-.0012	.0074	-.0022	.0234	.0007	.0004	-.0017	.0049
#3	.0002	-.0039	-.0012	.0189	.0006	.0007	-.0079	.0021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Cd2288	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	.0001	<.0000	.0023	.0075	.0252	<.0000	.0130
Stddev	.0003	.0004	.0007	.0025	.0029	.0099	.0024	.0168
%RSD	164.1	342.0	37.40	108.2	39.20	39.30	973.9	128.8
#1	.0005	.0004	-.0026	.0051	.0096	.0267	.0013	.0084
#2	-.0001	.0004	-.0020	.0002	.0041	.0342	-.0031	.0316
#3	.0001	-.0004	-.0012	.0017	.0086	.0146	.0010	-.0010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mn2576	Mo2020	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	.0000	<.0000	.0003	.0028	<.0000	.0034	.0034
Stddev	.0004	.0007	.0037	.0003	.0017	.0005	.0025	.0018
%RSD	134.3	3009.	135.7	83.02	58.18	23.44	72.54	52.28
#1	.0007	.0004	-.0031	.0000	.0010	-.0016	.0008	.0055
#2	-.0001	.0004	-.0063	.0004	.0042	-.0026	.0036	.0020
#3	.0003	-.0007	.0012	.0006	.0033	-.0022	.0058	.0028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB Acquired: 11/18/2014 18:05:10 Type: QC
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2516	Sn1899	Sr4077	Th2832	Ti3349	Tl1908	U_3670
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0005**	**<.0000**	**.0006**	**.0005**	**.0143**	**.0017**	**.0033**	**W .1461**
Stddev	.0021	.0040	.0010	.0002	.0044	.0003	.0050	.0105
%RSD	427.5	45.85	157.7	39.93	30.39	20.35	152.1	7.173
#1	.0013	-.0044	.0014	.0004	.0152	.0020	.0088	.1364
#2	.0021	-.0123	-.0005	.0004	.0096	.0014	.0021	.1572
#3	-.0019	-.0096	.0009	.0008	.0181	.0016	-.0010	.1448
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn
High Limit								.0480
Low Limit								-.0470

Elem	V_2908	Zn2138
Units	ppm	ppm
Avg	**.0023**	**.0004**
Stddev	.0028	.0002
%RSD	119.7	59.41
#1	.0000	.0006
#2	.0016	.0003
#3	.0054	.0002
Check ?	Chk Pass	Chk Pass
High Limit		
Low Limit		

Int. Std.	Y_3710
Units	Cts/S
Avg	**3651.8**
Stddev	27.8
%RSD	.76039
#1	3628.3
#2	3682.4
#3	3644.6

Sample Name: 160-8887-K-1-A Acquired: 11/18/2014 18:09:08 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=20

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	.0055	.1482	.0017	.0000	.0062	42.24	.0000
Stddev	.0016	.0048	.0008	.0030	.0003	.0000	.0038	.36	.0002
%RSD	1127.	131.3	14.34	1.995	19.69	51.39	61.66	.8601	486.0
#1	-.0018	-.0080	.0064	.1477	.0020	.0000	.0102	41.83	-.0002
#2	.0001	-.0043	.0051	.1513	.0016	.0000	.0057	42.51	.0002
#3	.0014	.0015	.0050	.1455	.0014	.0000	.0026	42.39	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0202	<.0000	.0032	1.055	.0224	16.09	.0002	.0137
Stddev	.0003	.0017	.0010	.0014	.044	.0005	.12	.0002	.0003
%RSD	125.1	8.209	119.5	43.39	4.164	2.414	.7365	155.5	2.373
#1	-.0004	.0185	.0000	.0041	1.011	.0219	16.10	.0002	.0134
#2	-.0003	.0218	-.0020	.0040	1.099	.0229	16.21	-.0001	.0140
#3	.0001	.0203	-.0006	.0016	1.056	.0224	15.97	.0004	.0138
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	128.8	.0005	<.0000	<.0000	49.62	.0045	<.0000	2.049	<.0000
Stddev	.4	.0005	.0016	.0009	.50	.0061	.0002	.016	.0004
%RSD	.2740	100.3	38060.	99.61	1.003	137.6	11.41	.7796	50.52
#1	128.9	.0006	-.0012	-.0011	49.06	.0037	-.0019	2.067	-.0010
#2	129.1	.0010	-.0006	.0001	50.01	.0109	-.0024	2.037	-.0011
#3	128.4	-.0001	.0018	-.0017	49.80	-.0012	-.0022	2.042	-.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-8887-K-1-A Acquired: 11/18/2014 18:09:08 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=20

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8172	.0098	.0019	.0003	.1435	.0007	.0075
Stddev	.0031	.0070	.0006	.0026	.0085	.0023	.0003
%RSD	.3755	71.82	30.16	897.5	5.899	303.7	3.558
#1	.8173	.0164	.0024	.0032	.1369	-.0016	.0073
#2	.8203	.0104	.0020	-.0006	.1530	.0029	.0075
#3	.8141	.0025	.0013	-.0018	.1405	.0010	.0078
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3536.9
Stddev	19.3
%RSD	.54442
#1	3516.6
#2	3539.2
#3	3554.9

Sample Name: 160-8887-K-1-A SD Acquired: 11/18/2014 18:13:00 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=100

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0034	<.0000	.0331	.0003	.0000	.0024	7.780	<.0000
Stddev	.0005	.0017	.0021	.0014	.0000	.0000	.0035	.066	.0001
%RSD	314.4	50.58	280.1	4.216	8.521	154.0	145.2	.8467	167.9
#1	.0004	.0019	-.0001	.0317	.0003	.0000	.0065	7.801	-.0001
#2	-.0002	.0029	.0010	.0330	.0003	.0000	.0002	7.707	.0001
#3	-.0006	.0053	-.0031	.0345	.0004	.0000	.0006	7.833	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0021	.0001	.0015	.1809	.0051	2.963	.0001	.0024
Stddev	.0002	.0020	.0038	.0016	.0043	.0009	.036	.0000	.0001
%RSD	251.5	95.81	7243.	104.7	2.385	18.00	1.231	60.67	5.909
#1	.0001	.0020	-.0043	.0015	.1857	.0061	2.927	.0000	.0025
#2	-.0001	.0002	.0031	.0031	.1774	.0043	2.962	.0000	.0022
#3	-.0002	.0042	.0014	-.0001	.1796	.0048	3.000	.0001	.0025
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	23.91	.0005	<.0000	<.0000	8.550	<.0000	<.0000	.3633	.0007
Stddev	.08	.0002	.0034	.0011	.089	.0012	.0010	.0027	.0009
%RSD	.3158	33.57	1885.	66.97	1.039	59.62	71.67	.7425	134.5
#1	23.85	.0006	.0022	-.0015	8.602	-.0035	-.0006	.3614	.0006
#2	23.89	.0006	.0013	-.0029	8.448	-.0014	-.0025	.3664	-.0002
#3	23.99	.0003	-.0040	-.0007	8.601	-.0014	-.0011	.3622	.0017
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-8887-K-1-A SD Acquired: 11/18/2014 18:13:00 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=100

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1513	.0052	.0009	<.0000	.1441	<.0000	.0065
Stddev	.0003	.0011	.0004	.0020	.0767	.0033	.0001
%RSD	.1940	20.20	45.45	646.0	53.18	912.5	1.823
#1	.1511	.0055	.0011	.0013	.0613	.0033	.0066
#2	.1513	.0061	.0004	.0004	.1585	-.0029	.0064
#3	.1516	.0041	.0011	-.0026	.2126	-.0015	.0066
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3700.2
Stddev	35.1
%RSD	.94857
#1	3714.1
#2	3726.3
#3	3660.3

Sample Name: 160-8887-K-1-B MS Acquired: 11/18/2014 18:16:53 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=20

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0104**	**.4979**	**.0621**	**.2442**	**.0526**	**.0527**	**.0593**	**42.51**	**.0544**
Stddev	.0007	.0235	.0027	.0026	.0004	.0001	.0073	.28	.0005
%RSD	6.306	4.713	4.421	1.059	.7690	.1807	12.23	.6490	.9912
#1	.0104	.5015	.0644	.2450	.0526	.0527	.0676	42.32	.0541
#2	.0097	.4729	.0591	.2463	.0522	.0526	.0561	42.83	.0550
#3	.0110	.5194	.0630	.2413	.0530	.0528	.0542	42.38	.0541
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0566**	**.0752**	**.0568**	**.5250**	**1.564**	**.0738**	**17.09**	**.0512**	**.0410**
Stddev	.0003	.0009	.0006	.0041	.020	.0005	.01	.0003	.0011
%RSD	.6129	1.257	.9895	.7754	1.247	.7146	.0789	.6617	2.658
#1	.0564	.0752	.0563	.5218	1.569	.0740	17.09	.0508	.0412
#2	.0570	.0762	.0574	.5237	1.580	.0732	17.07	.0515	.0420
#3	.0564	.0743	.0566	.5296	1.542	.0742	17.10	.0514	.0398
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**132.4**	**.0569**	**.0573**	**.0533**	**49.69**	**.0288**	**.0238**	**2.379**	**.0532**
Stddev	.2	.0004	.0016	.0008	.39	.0016	.0040	.009	.0025
%RSD	.1396	.7624	2.775	1.561	.7863	5.653	16.81	.3807	4.736
#1	132.5	.0568	.0558	.0534	49.31	.0273	.0196	2.377	.0535
#2	132.2	.0574	.0589	.0541	50.09	.0286	.0276	2.372	.0555
#3	132.5	.0566	.0572	.0524	49.68	.0305	.0241	2.389	.0505
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-8887-K-1-B MS Acquired: 11/18/2014 18:16:53 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=20

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8858	.0647	.0521	.0094	.1411	.0528	.0634
Stddev	.0032	.0032	.0007	.0025	.0404	.0046	.0005
%RSD	.3610	4.936	1.315	26.76	28.65	8.639	.8149
#1	.8851	.0635	.0513	.0100	.0978	.0477	.0628
#2	.8830	.0683	.0524	.0067	.1779	.0566	.0637
#3	.8893	.0622	.0526	.0117	.1476	.0539	.0637
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3567.7
Stddev	16.2
%RSD	.45452
#1	3581.8
#2	3550.0
#3	3571.3

Sample Name: 160-8887-K-1-C MSD Acquired: 11/18/2014 18:20:45 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=20

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0102**	**.5032**	**.0619**	**.2452**	**.0534**	**.0534**	**.0547**	**42.87**	**.0540**
Stddev	.0002	.0069	.0024	.0049	.0002	.0000	.0012	1.22	.0018
%RSD	1.643	1.377	3.808	1.979	.3990	.0853	2.161	2.847	3.422
#1	.0100	.5067	.0593	.2506	.0535	.0533	.0533	41.52	.0520
#2	.0102	.5076	.0626	.2413	.0534	.0534	.0556	43.22	.0543
#3	.0103	.4952	.0639	.2436	.0531	.0534	.0550	43.88	.0557
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0564**	**.0723**	**.0521**	**.5288**	**1.558**	**.0736**	**17.15**	**.0517**	**.0412**
Stddev	.0028	.0010	.0026	.0044	.028	.0012	.08	.0004	.0010
%RSD	5.047	1.409	5.073	.8246	1.822	1.641	.4583	.7928	2.499
#1	.0535	.0722	.0525	.5334	1.549	.0743	17.07	.0514	.0403
#2	.0566	.0734	.0493	.5283	1.535	.0722	17.17	.0514	.0409
#3	.0591	.0714	.0546	.5247	1.589	.0742	17.22	.0521	.0423
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**134.7**	**.0569**	**.0564**	**.0530**	**50.24**	**.0280**	**.0274**	**2.410**	**.0536**
Stddev	.2	.0019	.0027	.0020	1.80	.0007	.0016	.019	.0007
%RSD	.1459	3.268	4.801	3.841	3.578	2.378	5.966	.7827	1.309
#1	134.9	.0548	.0566	.0507	48.29	.0287	.0282	2.389	.0537
#2	134.8	.0576	.0536	.0537	50.59	.0279	.0284	2.425	.0528
#3	134.5	.0584	.0590	.0546	51.83	.0274	.0255	2.417	.0542
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-8887-K-1-C MSD Acquired: 11/18/2014 18:20:45 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=20

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9055	.0633	.0523	.0125	.0896	.0521	.0631
Stddev	.0007	.0081	.0009	.0011	.0143	.0028	.0020
%RSD	.0719	12.76	1.661	8.986	15.92	5.312	3.232
#1	.9061	.0725	.0518	.0119	.0786	.0506	.0608
#2	.9056	.0573	.0533	.0119	.0844	.0553	.0639
#3	.9048	.0602	.0518	.0138	.1057	.0504	.0646
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3636.8
Stddev	21.9
%RSD	.60269
#1	3658.8
#2	3615.0
#3	3636.5

Sample Name: 160-8887-F-2-A Acquired: 11/18/2014 18:24:38 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=20

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0023	.0013	.2048	.0012	.0000	.0047	50.90	<.0000
Stddev	.0010	.0083	.0031	.0005	.0002	.0001	.0065	.18	.0002
%RSD	182.7	358.1	241.0	.2446	16.41	193.6	137.6	.3611	226.3
#1	-.0011	.0064	.0018	.2043	.0012	.0000	.0023	51.03	-.0003
#2	.0006	-.0072	.0041	.2053	.0010	.0000	-.0002	50.97	.0002
#3	-.0011	.0078	-.0021	.2048	.0014	.0001	.0121	50.69	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0062	<.0000	.0008	1.165	.0213	20.52	.0001	.0057
Stddev	.0002	.0010	.0010	.0031	.023	.0007	.10	.0002	.0002
%RSD	31040.	15.75	952.9	392.7	1.976	3.287	.4823	253.6	2.715
#1	-.0002	.0072	.0010	-.0027	1.170	.0213	20.41	-.0002	.0058
#2	-.0001	.0053	-.0003	.0021	1.184	.0221	20.59	.0002	.0058
#3	.0003	.0060	-.0011	.0029	1.139	.0207	20.57	.0002	.0055
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	62.50	.0005	<.0000	<.0000	38.92	.0023	<.0000	2.183	<.0000
Stddev	.35	.0007	.0027	.0028	.15	.0011	.0014	.019	.0018
%RSD	.5656	140.0	163.0	966.7	.3727	49.89	46.33	.8671	154.0
#1	62.10	-.0001	.0005	-.0033	39.08	.0036	-.0039	2.161	-.0011
#2	62.75	.0012	-.0008	.0022	38.89	.0014	-.0015	2.196	-.0030
#3	62.66	.0004	-.0047	.0003	38.80	.0019	-.0040	2.192	.0006
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-8887-F-2-A Acquired: 11/18/2014 18:24:38 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=20

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.030	.0061	.0020	.0001	.0438	.0004	.0037
Stddev	.006	.0059	.0008	.0005	.0338	.0028	.0001
%RSD	.5460	97.61	38.70	396.7	77.21	670.9	3.532
#1	1.023	.0112	.0015	-.0004	.0412	.0018	.0037
#2	1.034	-.0004	.0016	.0005	.0789	.0022	.0038
#3	1.032	.0073	.0029	.0002	.0114	-.0028	.0036
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3673.7
Stddev	5.2
%RSD	.14098
#1	3674.2
#2	3668.3
#3	3678.6

Sample Name: 160-8887-F-3-A Acquired: 11/18/2014 18:28:30 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=20

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	<.0000	.1606	.0008	<.0000	.0011	41.57	.0001
Stddev	.0010	.0040	.0001	.0031	.0000	.0000	.0067	1.01	.0002
%RSD	76.29	141.1	81.28	1.916	2.042	41.36	605.7	2.436	269.5
#1	-.0003	-.0074	.0000	.1632	.0007	.0000	.0033	40.47	.0001
#2	-.0024	-.0007	-.0002	.1613	.0008	.0000	-.0064	41.75	.0003
#3	-.0013	-.0004	-.0003	.1572	.0008	-.0001	.0065	42.47	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0033	.0020	.0005	.8841	.0188	15.88	<.0000	.0044
Stddev	.0005	.0012	.0020	.0013	.0329	.0006	.07	.0005	.0002
%RSD	112.8	37.80	100.5	255.0	3.725	3.064	.4189	6445.	5.036
#1	.0001	.0046	.0024	.0010	.8987	.0184	15.81	.0002	.0042
#2	-.0004	.0030	-.0002	.0016	.8463	.0185	15.89	.0004	.0046
#3	-.0009	.0022	.0037	-.0010	.9071	.0195	15.94	-.0006	.0045
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	49.22	.0002	<.0000	<.0000	31.91	<.0000	.0014	1.700	<.0000
Stddev	.04	.0001	.0018	.0021	.77	.0010	.0040	.007	.0005
%RSD	.0868	30.03	3702.	106.7	2.412	91.79	290.0	.4255	90.39
#1	49.27	.0001	.0008	-.0009	31.11	.0001	.0003	1.708	-.0007
#2	49.20	.0002	.0012	-.0006	31.99	-.0016	.0058	1.693	.0000
#3	49.20	.0002	-.0022	-.0043	32.64	-.0019	-.0020	1.699	-.0010
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-8887-F-3-A Acquired: 11/18/2014 18:28:30 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=20

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8098	.0110	.0013	.0020	.0663	.0037	.0033
Stddev	.0007	.0061	.0007	.0028	.0269	.0033	.0001
%RSD	.0889	55.65	55.07	135.6	40.65	87.65	2.535
#1	.8107	.0135	.0008	.0052	.0653	.0073	.0032
#2	.8094	.0040	.0010	.0001	.0937	.0027	.0033
#3	.8094	.0155	.0021	.0008	.0399	.0011	.0034
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3777.4
Stddev	13.9
%RSD	.36811
#1	3789.7
#2	3762.3
#3	3780.2

Sample Name: 160-8887-F-5-A Acquired: 11/18/2014 18:32:22 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=20

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0010**	**.0053**	**.0048**	**.3402**	**.0009**	**.0000**	**.0030**	**26.10**	**.0002**
Stddev	.0012	.0034	.0012	.0056	.0001	.0000	.0039	1.29	.0002
%RSD	120.1	64.60	25.59	1.652	10.47	65.70	129.3	4.947	82.39
#1	.0002	.0059	.0035	.3374	.0008	.0000	.0067	24.92	.0000
#2	.0004	.0084	.0052	.3467	.0009	.0000	.0033	25.90	.0003
#3	.0024	.0016	.0058	.3366	.0010	.0001	-.0010	27.48	.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**<.0000**	**.0734**	**<.0000**	**<.0000**	**.4770**	**.0189**	**8.271**	**.0001**	**.0035**
Stddev	.0003	.0019	.0037	.0006	.0196	.0003	.029	.0002	.0005
%RSD	82.00	2.551	825.1	74.61	4.113	1.332	.3522	223.1	14.86
#1	-.0004	.0743	-.0021	-.0012	.4819	.0186	8.269	-.0002	.0029
#2	-.0005	.0713	.0038	-.0001	.4554	.0191	8.301	.0002	.0039
#3	.0000	.0747	-.0030	-.0010	.4937	.0189	8.243	.0002	.0037
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**38.91**	**.0010**	**<.0000**	**<.0000**	**37.87**	**<.0000**	**.0015**	**1.700**	**<.0000**
Stddev	.12	.0005	.0020	.0017	2.07	.0042	.0046	.010	.0004
%RSD	.3011	53.23	471.0	91.23	5.471	1305.	301.6	.5786	47.34
#1	38.85	.0004	.0012	.0001	36.06	-.0021	.0065	1.704	-.0013
#2	39.04	.0011	-.0027	-.0028	37.41	.0045	.0008	1.707	-.0009
#3	38.83	.0014	.0002	-.0029	40.13	-.0034	-.0027	1.688	-.0005
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-8887-F-5-A Acquired: 11/18/2014 18:32:22 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=20

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4985	.0102	.0007	.0040	.0723	.0022	.0031
Stddev	.0020	.0030	.0003	.0025	.0235	.0006	.0003
%RSD	.4110	29.10	42.48	61.56	32.58	29.95	8.268
#1	.4975	.0128	.0004	.0065	.0731	.0029	.0028
#2	.5009	.0110	.0007	.0016	.0954	.0018	.0032
#3	.4971	.0069	.0010	.0040	.0483	.0018	.0033
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3770.5
Stddev	15.2
%RSD	.40258
#1	3764.0
#2	3759.6
#3	3787.8

Sample Name: 160-8887-F-6-A Acquired: 11/18/2014 18:36:14 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=20

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0012	.0118	.0041	.2246	.0005	.0000	<.0000	25.73	.0001
Stddev	.0006	.0113	.0013	.0024	.0001	.0000	.0032	.57	.0002
%RSD	52.40	95.82	31.31	1.085	14.97	186.7	939.8	2.216	240.2
#1	.0018	.0221	.0027	.2256	.0005	.0000	.0000	25.21	-.0001
#2	.0011	.0138	.0047	.2219	.0005	.0000	-.0037	25.63	.0002
#3	.0006	-.0003	.0050	.2265	.0004	.0000	.0027	26.34	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0364	.0032	.0028	.4708	.0153	8.282	<.0000	.0028
Stddev	.0003	.0010	.0011	.0010	.0030	.0015	.073	.0004	.0005
%RSD	86.64	2.858	33.74	34.43	.6339	9.634	.8777	643.5	16.26
#1	-.0003	.0356	.0043	.0020	.4683	.0155	8.281	-.0002	.0023
#2	-.0001	.0361	.0029	.0039	.4741	.0166	8.210	-.0004	.0030
#3	-.0007	.0376	.0022	.0025	.4700	.0137	8.355	.0004	.0031
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	37.08	.0002	<.0000	<.0000	34.48	<.0000	<.0000	1.682	<.0000
Stddev	.28	.0003	.0003	.0016	.86	.0013	.0036	.019	.0000
%RSD	.7425	185.0	17.39	75.02	2.496	238.8	87.16	1.121	13.09
#1	37.09	-.0002	-.0014	-.0011	33.75	.0001	-.0080	1.685	-.0003
#2	36.80	.0003	-.0017	-.0013	34.28	-.0020	-.0033	1.661	-.0003
#3	37.35	.0004	-.0019	-.0039	35.43	.0003	-.0010	1.699	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-8887-F-6-A Acquired: 11/18/2014 18:36:14 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=20

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4955	.0053	.0008	.0018	.0585	.0036	.0036
Stddev	.0042	.0025	.0003	.0005	.0234	.0018	.0000
%RSD	.8421	47.71	42.99	29.44	39.97	51.30	.6180
#1	.4949	.0082	.0005	.0024	.0659	.0041	.0036
#2	.4917	.0046	.0007	.0013	.0323	.0015	.0035
#3	.4999	.0032	.0012	.0017	.0772	.0051	.0036
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3718.0
Stddev	6.4
%RSD	.17147
#1	3711.8
#2	3724.6
#3	3717.6

Sample Name: 160-8887-H-7-A Acquired: 11/18/2014 18:40:06 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=20

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0019	.0009	.0873	.0022	<.0000	<.0000	19.98	.0001
Stddev	.0004	.0082	.0009	.0011	.0003	.0000	.0050	.11	.0002
%RSD	894.9	424.6	94.77	1.229	14.36	180.9	709.4	.5520	143.7
#1	-.0001	.0109	.0019	.0883	.0021	.0000	.0033	19.97	.0003
#2	-.0004	-.0049	.0007	.0873	.0025	.0000	.0008	20.09	-.0001
#3	.0004	-.0002	.0002	.0862	.0019	.0000	-.0062	19.87	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0109	<.0000	.0011	.8646	.0131	8.384	.0012	.0123
Stddev	.0003	.0015	.0017	.0007	.0223	.0013	.078	.0001	.0004
%RSD	254.4	13.49	183.2	66.28	2.574	9.747	.9270	11.24	3.527
#1	-.0005	.0121	-.0025	.0013	.8473	.0143	8.459	.0011	.0128
#2	.0000	.0114	.0008	.0016	.8897	.0132	8.387	.0012	.0119
#3	.0001	.0093	-.0010	.0003	.8568	.0118	8.304	.0013	.0123
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	76.15	.0005	.0010	<.0000	21.33	.0023	<.0000	1.247	<.0000
Stddev	.45	.0006	.0007	.0025	.09	.0029	.0025	.008	.0005
%RSD	.5948	104.4	70.02	113.9	.4315	125.6	224.5	.6566	58.19
#1	76.64	.0002	.0006	-.0001	21.29	-.0006	.0014	1.249	-.0003
#2	76.08	.0002	.0018	-.0015	21.43	.0024	-.0011	1.253	-.0010
#3	75.74	.0012	.0005	-.0050	21.26	.0051	-.0035	1.238	-.0014
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-8887-H-7-A Acquired: 11/18/2014 18:40:06 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=20

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4602	.0115	.0004	.0017	.1066	<.0000	.0032
Stddev	.0025	.0067	.0012	.0004	.0162	.0013	.0003
%RSD	.5376	58.11	288.5	24.91	15.23	100.3	10.03
#1	.4628	.0115	.0017	.0014	.1183	-.0007	.0035
#2	.4600	.0181	-.0006	.0016	.1136	-.0004	.0029
#3	.4579	.0048	.0002	.0022	.0881	-.0028	.0031
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3740.7
Stddev	73.7
%RSD	1.9711
#1	3691.9
#2	3704.6
#3	3825.5

Sample Name: 160-8887-F-8-A Acquired: 11/18/2014 18:43:58 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=20

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0007**	**.0028**	**.0055**	**.2261**	**.0009**	**<.0000**	**.0044**	**26.23**	**<.0000**
Stddev	.0006	.0155	.0009	.0026	.0001	.0000	.0051	.99	.0003
%RSD	90.94	555.9	17.14	1.129	7.797	28.19	116.7	3.769	400.8
#1	.0013	.0201	.0045	.2232	.0010	.0000	.0050	25.22	.0003
#2	.0003	-.0099	.0059	.2279	.0008	-.0001	.0091	26.28	-.0004
#3	.0003	-.0019	.0062	.2273	.0010	.0000	-.0010	27.19	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**.0357**	**<.0000**	**.0020**	**1.241**	**.0173**	**8.438**	**<.0000**	**.0019**
Stddev	.0005	.0007	.0020	.0004	.031	.0002	.059	.0004	.0005
%RSD	341.1	2.045	199.9	21.96	2.496	1.263	.7046	1169.	26.69
#1	.0002	.0364	.0006	.0017	1.219	.0170	8.381	.0001	.0025
#2	.0006	.0350	-.0004	.0017	1.229	.0175	8.434	-.0004	.0018
#3	-.0004	.0357	-.0033	.0025	1.277	.0173	8.500	.0003	.0015
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**40.99**	**.0007**	**<.0000**	**.0010**	**33.06**	**.0027**	**<.0000**	**1.371**	**<.0000**
Stddev	.10	.0005	.0011	.0012	1.26	.0018	.0018	.027	.0009
%RSD	.2451	75.52	191.0	119.6	3.816	66.37	35.46	1.948	160.9
#1	40.92	.0002	-.0014	.0024	31.80	.0043	-.0061	1.354	-.0001
#2	40.94	.0012	-.0011	.0001	33.05	.0029	-.0030	1.356	-.0016
#3	41.10	.0005	.0007	.0006	34.32	.0008	-.0062	1.401	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-8887-F-8-A Acquired: 11/18/2014 18:43:58 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=20

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5186	.0098	.0015	.0019	.1556	.0017	.0034
Stddev	.0025	.0029	.0011	.0018	.0460	.0015	.0002
%RSD	.4765	30.18	72.60	94.29	29.55	85.93	4.999
#1	.5176	.0131	.0015	.0030	.1885	.0000	.0032
#2	.5167	.0075	.0025	-.0002	.1030	.0023	.0036
#3	.5214	.0086	.0004	.0030	.1751	.0029	.0034
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3850.8
Stddev	4.7
%RSD	.12130
#1	3856.2
#2	3848.3
#3	3847.9

Sample Name: CCV Acquired: 11/18/2014 18:47:52 Type: QC
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.9485**	**48.24**	**4.910**	**4.942**	**5.038**	**5.073**	**4.952**	**48.89**	**4.925**
Stddev	.0238	.17	.090	.014	.016	.047	.100	1.01	.100
%RSD	2.507	.3555	1.824	.2915	.3111	.9278	2.021	2.071	2.020
#1	.9295	48.23	4.825	4.926	5.039	5.061	4.859	47.96	4.835
#2	.9410	48.42	4.903	4.954	5.053	5.034	4.937	48.73	4.909
#3	.9752	48.07	5.004	4.945	5.022	5.125	5.058	49.97	5.032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.983**	**5.006**	**4.942**	**50.88**	**50.31**	**4.867**	**48.48**	**4.901**	**1.007**
Stddev	.094	.091	.102	.09	.11	.018	.15	.014	.020
%RSD	1.885	1.812	2.065	.1856	.2202	.3686	.3090	.2916	2.028
#1	4.897	4.944	4.851	50.77	50.35	4.874	48.31	4.892	.9869
#2	4.969	4.964	4.922	50.93	50.39	4.880	48.61	4.918	1.005
#3	5.084	5.110	5.052	50.93	50.18	4.846	48.51	4.893	1.028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**48.87**	**4.999**	**49.57**	**5.010**	**49.38**	**.9791**	**.9848**	**4.848**	**5.023**
Stddev	.09	.098	.98	.097	.87	.0201	.0220	.006	.101
%RSD	.1911	1.959	1.972	1.935	1.757	2.057	2.232	.1249	2.004
#1	48.89	4.910	48.67	4.922	48.56	.9618	.9703	4.843	4.929
#2	48.95	4.984	49.42	4.995	49.29	.9742	.9739	4.847	5.010
#3	48.77	5.104	50.61	5.114	50.28	1.001	1.010	4.855	5.129
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: CCV Acquired: 11/18/2014 18:47:52 Type: QC
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.974**	**4.803**	**5.051**	**1.001**	**4.897**	**4.880**	**4.999**
Stddev	.040	.126	.010	.019	.116	.025	.094
%RSD	.7999	2.622	.1984	1.898	2.365	.5210	1.872
#1	4.969	4.707	5.043	.9826	4.814	4.855	4.911
#2	4.937	4.756	5.062	1.001	4.847	4.906	4.987
#3	5.016	4.946	5.047	1.021	5.029	4.881	5.097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**3739.9**
Stddev	76.3
%RSD	2.0401
#1	3809.4
#2	3752.1
#3	3658.3

Sample Name: CCB Acquired: 11/18/2014 18:51:37 Type: QC
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0027	<.0000	.0121	.0009	.0007	.0013	.0033
Stddev	.0013	.0119	.0031	.0011	.0002	.0001	.0046	.0006
%RSD	676.6	433.6	172.4	8.895	22.44	10.66	343.6	18.16
#1	.0005	.0054	.0016	.0111	.0011	.0008	.0065	.0040
#2	.0006	.0131	-.0026	.0133	.0008	.0007	-.0021	.0029
#3	-.0017	-.0102	-.0045	.0120	.0007	.0006	-.0004	.0029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Cd2288	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	<.0000	<.0000	.0024	.0101	.0559	.0000	<.0000
Stddev	.0001	.0002	.0005	.0018	.0052	.0295	.0007	.0059
%RSD	20.59	5862.	46.02	78.56	51.53	52.74	7740.	111.8
#1	.0005	-.0003	-.0017	.0023	.0160	.0883	.0008	-.0038
#2	.0004	.0002	-.0011	.0042	.0061	.0488	-.0002	-.0118
#3	.0003	.0000	-.0006	.0005	.0083	.0306	-.0005	-.0003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mn2576	Mo2020	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0008	.0006	.0174	.0001	.0045	<.0000	.0104	<.0000
Stddev	.0003	.0002	.0043	.0003	.0018	.0012	.0030	.0014
%RSD	32.71	29.72	24.79	392.5	41.10	97.53	29.35	72.53
#1	.0011	.0006	.0124	.0000	.0033	-.0014	.0112	-.0017
#2	.0008	.0009	.0197	.0004	.0066	.0001	.0129	-.0033
#3	.0006	.0005	.0201	-.0002	.0035	-.0023	.0070	-.0006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB Acquired: 11/18/2014 18:51:37 Type: QC
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2516	Sn1899	Sr4077	Th2832	Ti3349	Tl1908	U_3670
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	.0002	.0007	.0113	.0010	.0001	W .1651
Stddev	.0008	.0083	.0005	.0002	.0070	.0006	.0026	.0101
%RSD	78.71	120.8	225.2	21.19	61.63	55.90	2054.	6.117
#1	-.0011	-.0104	.0007	.0009	.0185	.0005	.0031	.1661
#2	-.0002	-.0128	.0003	.0007	.0107	.0016	-.0012	.1746
#3	-.0018	.0026	-.0003	.0006	.0046	.0011	-.0015	.1545
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn
High Limit								.0480
Low Limit								-.0470

Elem	V_2908	Zn2138
Units	ppm	ppm
Avg	.0010	.0006
Stddev	.0026	.0002
%RSD	261.2	44.39
#1	-.0020	.0007
#2	.0023	.0007
#3	.0027	.0003
Check ?	Chk Pass	Chk Pass
High Limit		
Low Limit		

Int. Std.	Y_3710
Units	Cts/S
Avg	3723.2
Stddev	21.5
%RSD	.57865
#1	3704.8
#2	3746.9
#3	3717.8

Sample Name: MB 160-152519/1-A Acquired: 11/18/2014 18:55:34 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0011**	**.0096**	**<.0000**	**.0106**	**.0001**	**.0001**	**<.0000**	**.0303**	**.0002**
Stddev	.0006	.0094	.0025	.0055	.0001	.0000	.0074	.0012	.0002
%RSD	53.91	97.77	58.62	52.02	156.7	57.02	5823.	3.836	74.13
#1	.0005	.0178	-.0052	.0120	.0002	.0001	.0034	.0313	.0002
#2	.0013	.0116	-.0014	.0154	-.0001	.0000	.0048	.0306	.0004
#3	.0016	-.0006	-.0060	.0046	.0001	.0001	-.0086	.0290	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**<.0000**	**<.0000**	**.0001**	**.0774**	**<.0000**	**.0002**	**<.0000**	**.0002**	**.0000**
Stddev	.0006	.0008	.0032	.0014	.0172	.0017	.0079	.0001	.0003
%RSD	270.2	1659.	4270.	1.853	299.0	902.2	98.37	54.07	712.8
#1	.0000	-.0001	-.0036	.0770	-.0072	.0018	-.0149	.0001	.0001
#2	.0003	-.0008	.0013	.0789	-.0222	-.0015	-.0100	.0002	.0004
#3	-.0010	.0008	.0025	.0761	.0121	.0003	.0007	.0004	-.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0033**	**.0002**	**.0025**	**<.0000**	**.0061**	**.0032**	**<.0000**	**.0061**	**.0005**
Stddev	.0049	.0002	.0010	.0019	.0021	.0011	.0067	.0033	.0005
%RSD	147.8	90.95	40.30	89.88	34.65	33.32	153.4	53.60	95.66
#1	.0066	.0003	.0031	.0000	.0038	.0036	-.0105	.0026	.0003
#2	.0057	.0000	.0030	-.0035	.0066	.0040	-.0052	.0067	.0011
#3	-.0023	.0004	.0013	-.0028	.0080	.0020	.0027	.0091	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: MB 160-152519/1-A Acquired: 11/18/2014 18:55:34 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	.0132	.0008	<.0000	.1488	<.0000	.0090
Stddev	.0001	.0036	.0008	.0005	.0262	.0035	.0002
%RSD	21.49	27.57	98.42	78.97	17.60	4965.	2.389
#1	.0003	.0090	.0003	-.0007	.1742	-.0037	.0093
#2	.0002	.0150	.0017	-.0009	.1219	.0003	.0090
#3	.0004	.0156	.0004	-.0001	.1504	.0032	.0088
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3713.0
Stddev	22.1
%RSD	.59575
#1	3702.3
#2	3698.3
#3	3738.4

Sample Name: LCS 160-152519/2-A Acquired: 11/18/2014 18:59:31 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1982	9.688	1.006	1.973	1.028	1.022	1.045	10.65	1.020
Stddev	.0045	.027	.021	.009	.002	.004	.022	.22	.022
%RSD	2.267	.2807	2.126	.4711	.2016	.3979	2.152	2.080	2.202
#1	.2034	9.715	1.029	1.965	1.030	1.026	1.068	10.90	1.045
#2	.1959	9.689	1.003	1.983	1.027	1.021	1.045	10.59	1.013
#3	.1953	9.661	.9861	1.970	1.026	1.018	1.023	10.47	1.002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.096	1.061	1.063	10.39	9.976	1.011	9.619	.9966	.5365
Stddev	.026	.014	.026	.05	.018	.002	.066	.0041	.0120
%RSD	2.345	1.358	2.496	.4878	.1772	.1805	.6863	.4083	2.238
#1	1.125	1.075	1.092	10.44	9.988	1.013	9.687	1.001	.5494
#2	1.088	1.062	1.056	10.38	9.985	1.009	9.613	.9949	.5344
#3	1.075	1.046	1.040	10.34	9.956	1.012	9.556	.9937	.5256
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.787	1.085	1.041	1.071	10.07	.5098	.5170	4.853	1.061
Stddev	.010	.022	.024	.020	.25	.0163	.0185	.015	.022
%RSD	.1037	2.075	2.269	1.841	2.485	3.193	3.579	.3159	2.100
#1	9.797	1.110	1.067	1.092	10.35	.5281	.5383	4.857	1.085
#2	9.777	1.079	1.036	1.069	10.00	.5043	.5074	4.835	1.058
#3	9.787	1.066	1.021	1.053	9.863	.4970	.5052	4.865	1.041
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LCS 160-152519/2-A Acquired: 11/18/2014 18:59:31 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.028	1.019	1.023	.2208	1.251	.9733	1.106
Stddev	.003	.033	.002	.0068	.020	.0045	.025
%RSD	.2808	3.228	.2265	3.067	1.562	.4660	2.250
#1	1.032	1.054	1.025	.2284	1.273	.9781	1.134
#2	1.027	1.013	1.024	.2188	1.243	.9691	1.099
#3	1.026	.9890	1.021	.2153	1.236	.9728	1.086
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3788.9
Stddev	50.8
%RSD	1.3406
#1	3741.9
#2	3782.2
#3	3842.8

Sample Name: 160-8922-D-1-A Acquired: 11/18/2014 19:03:07 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=20

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005	.0096	.0104	.4294	.0008	.0001	.0020	27.78	.0001
Stddev	.0006	.0096	.0009	.0054	.0001	.0000	.0014	.24	.0003
%RSD	134.9	99.87	8.825	1.253	14.00	24.77	72.52	.8701	269.8
#1	-.0001	.0202	.0109	.4352	.0007	.0002	.0030	27.55	.0005
#2	.0004	.0016	.0109	.4285	.0009	.0002	.0027	27.74	-.0001
#3	.0012	.0069	.0093	.4246	.0007	.0001	.0003	28.03	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0461	.0017	.0030	.4995	.0198	7.940	.0019	.0018
Stddev	.0001	.0012	.0009	.0012	.0202	.0016	.039	.0002	.0002
%RSD	116.0	2.670	54.41	40.76	4.039	8.223	.4878	8.409	9.734
#1	.0000	.0450	.0028	.0019	.4979	.0189	7.970	.0020	.0017
#2	-.0001	.0474	.0014	.0043	.5204	.0217	7.896	.0020	.0017
#3	-.0001	.0458	.0010	.0028	.4801	.0189	7.954	.0017	.0020
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	52.38	.0008	<.0000	<.0000	50.06	.0026	<.0000	1.945	<.0000
Stddev	.16	.0006	.0006	.0005	.45	.0032	.0042	.026	.0008
%RSD	.3104	72.21	38.79	36.10	.9039	122.3	108.5	1.358	381.8
#1	52.54	.0004	-.0022	-.0019	49.58	.0029	-.0019	1.955	-.0010
#2	52.21	.0015	-.0016	-.0010	50.13	.0057	-.0087	1.915	-.0003
#3	52.40	.0006	-.0010	-.0011	50.48	-.0007	-.0010	1.964	.0007
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-8922-D-1-A Acquired: 11/18/2014 19:03:07 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=20

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5113	.0080	.0010	.0013	.1777	.0078	.0063
Stddev	.0021	.0043	.0004	.0004	.0163	.0023	.0001
%RSD	.4185	53.58	42.07	35.13	9.201	29.99	1.734
#1	.5135	.0127	.0012	.0015	.1850	.0055	.0062
#2	.5093	.0069	.0005	.0008	.1891	.0076	.0063
#3	.5111	.0043	.0013	.0016	.1589	.0102	.0064
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3718.4
Stddev	8.0
%RSD	.21539
#1	3723.9
#2	3709.2
#3	3722.0

Sample Name: 160-8922-D-1-A SD Acquired: 11/18/2014 19:06:59 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=100

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	<.0000	.0865	.0003	.0000	<.0000	5.399	.0002
Stddev	.0015	.0121	.0017	.0066	.0002	.0000	.0003	.099	.0002
%RSD	207.7	680.7	138.6	7.638	84.80	272.0	19.63	1.837	131.0
#1	.0009	-.0106	-.0033	.0940	.0006	.0001	-.0015	5.402	.0004
#2	-.0011	.0120	-.0001	.0839	.0001	.0000	-.0016	5.496	.0000
#3	-.0021	-.0067	-.0004	.0816	.0002	.0000	-.0021	5.298	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0062	.0020	.0021	.0797	.0056	1.552	.0004	.0004
Stddev	.0001	.0003	.0008	.0028	.0252	.0015	.025	.0002	.0003
%RSD	1472.	5.421	43.17	130.0	31.60	26.29	1.576	62.29	79.00
#1	.0001	.0059	.0010	.0022	.0542	.0041	1.574	.0001	.0001
#2	-.0001	.0062	.0027	-.0007	.1045	.0057	1.556	.0004	.0007
#3	.0000	.0065	.0022	.0049	.0802	.0070	1.525	.0006	.0005
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.22	.0003	<.0000	<.0000	9.409	<.0000	<.0000	.3635	.0005
Stddev	.02	.0003	.0005	.0009	.163	.0033	.0023	.0094	.0009
%RSD	.1499	93.68	842.8	137.4	1.728	463.1	91.42	2.597	174.4
#1	10.24	.0003	.0005	-.0015	9.410	-.0014	-.0052	.3649	-.0001
#2	10.21	.0006	-.0001	.0002	9.571	.0029	-.0010	.3534	.0015
#3	10.22	.0000	-.0006	-.0006	9.246	-.0036	-.0013	.3721	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-8922-D-1-A SD Acquired: 11/18/2014 19:06:59 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=100

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1003	.0035	.0001	.0021	.1463	.0031	.0061
Stddev	.0003	.0057	.0009	.0009	.0280	.0031	.0004
%RSD	.2774	165.5	1712.	43.24	19.14	99.79	6.403
#1	.1006	.0096	.0001	.0013	.1229	.0053	.0061
#2	.1000	.0026	.0009	.0019	.1774	.0043	.0064
#3	.1003	-.0018	-.0008	.0030	.1386	-.0004	.0057
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3888.4
Stddev	62.6
%RSD	1.6090
#1	3864.9
#2	3840.9
#3	3959.2

Sample Name: 160-8922-D-1-B MS Acquired: 11/18/2014 19:10:53 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=20

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0078**	**.4799**	**.0620**	**.5395**	**.0510**	**.0516**	**.0520**	**29.22**	**.0519**
Stddev	.0003	.0024	.0036	.0023	.0003	.0002	.0038	.89	.0017
%RSD	4.019	.4982	5.829	.4208	.5032	.4714	7.298	3.047	3.362
#1	.0082	.4782	.0586	.5396	.0509	.0514	.0481	28.31	.0502
#2	.0078	.4789	.0617	.5418	.0513	.0519	.0523	29.25	.0517
#3	.0075	.4827	.0658	.5372	.0508	.0516	.0556	30.09	.0537
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0553**	**.0978**	**.0527**	**.5276**	**1.034**	**.0691**	**8.774**	**.0513**	**.0290**
Stddev	.0014	.0055	.0024	.0020	.045	.0007	.079	.0002	.0012
%RSD	2.454	5.640	4.631	.3816	4.397	.9612	.8959	.4630	3.993
#1	.0538	.0930	.0513	.5254	1.001	.0687	8.685	.0513	.0279
#2	.0558	.0965	.0513	.5292	1.086	.0699	8.804	.0511	.0289
#3	.0564	.1038	.0555	.5284	1.016	.0687	8.833	.0516	.0302
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**54.74**	**.0556**	**.0560**	**.0541**	**51.95**	**.0273**	**.0266**	**2.287**	**.0529**
Stddev	.24	.0014	.0008	.0035	1.56	.0010	.0050	.013	.0016
%RSD	.4418	2.576	1.375	6.538	2.997	3.481	18.86	.5624	2.990
#1	54.78	.0544	.0552	.0501	50.42	.0262	.0233	2.277	.0513
#2	54.96	.0553	.0561	.0565	51.89	.0279	.0241	2.302	.0530
#3	54.48	.0572	.0567	.0558	53.54	.0279	.0324	2.283	.0544
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-8922-D-1-B MS Acquired: 11/18/2014 19:10:53 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=20

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5846	.0530	.0521	.0113	.1942	.0602	.0614
Stddev	.0028	.0099	.0004	.0021	.0761	.0012	.0016
%RSD	.4760	18.75	.7875	18.63	39.21	2.006	2.629
#1	.5855	.0496	.0516	.0093	.1394	.0590	.0598
#2	.5868	.0452	.0522	.0110	.1620	.0600	.0615
#3	.5814	.0641	.0524	.0135	.2811	.0614	.0630
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3689.9
Stddev	111.6
%RSD	3.0236
#1	3808.4
#2	3674.4
#3	3586.9

Sample Name: 160-8922-D-1-C MSD Acquired: 11/18/2014 19:14:44 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=20

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0085**	**.4801**	**.0633**	**.5332**	**.0509**	**.0516**	**.0577**	**29.62**	**.0529**
Stddev	.0016	.0049	.0021	.0036	.0002	.0001	.0042	.06	.0002
%RSD	18.58	1.020	3.277	.6664	.4047	.1571	7.213	.1882	.3420
#1	.0081	.4841	.0636	.5336	.0508	.0517	.0610	29.56	.0529
#2	.0071	.4746	.0653	.5365	.0511	.0516	.0530	29.64	.0527
#3	.0102	.4816	.0611	.5294	.0507	.0515	.0590	29.67	.0531
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0567**	**.1005**	**.0546**	**.5284**	**1.003**	**.0690**	**8.726**	**.0513**	**.0291**
Stddev	.0006	.0019	.0035	.0025	.014	.0014	.034	.0002	.0003
%RSD	1.023	1.896	6.444	.4763	1.422	1.971	.3921	.3856	1.042
#1	.0562	.1027	.0535	.5267	.9904	.0682	8.764	.0512	.0288
#2	.0573	.0998	.0518	.5313	1.018	.0682	8.697	.0512	.0294
#3	.0568	.0991	.0586	.5272	.9998	.0706	8.719	.0515	.0292
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**54.09**	**.0567**	**.0564**	**.0544**	**52.95**	**.0274**	**.0255**	**1.960**	**.0535**
Stddev	.08	.0001	.0026	.0011	.09	.0031	.0056	.005	.0010
%RSD	.1413	.2570	4.566	2.065	.1780	11.35	21.85	.2787	1.825
#1	54.12	.0566	.0545	.0556	52.84	.0298	.0196	1.955	.0524
#2	54.15	.0568	.0593	.0533	53.03	.0239	.0307	1.961	.0542
#3	54.01	.0567	.0554	.0543	52.98	.0287	.0261	1.966	.0539
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-8922-D-1-C MSD Acquired: 11/18/2014 19:14:44 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=20

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5786	.0593	.0513	.0108	.2248	.0581	.0615
Stddev	.0004	.0059	.0008	.0005	.0326	.0035	.0003
%RSD	.0622	9.946	1.566	4.211	14.50	5.965	.5374
#1	.5790	.0525	.0506	.0113	.2418	.0547	.0611
#2	.5785	.0623	.0522	.0103	.2453	.0580	.0615
#3	.5783	.0631	.0511	.0108	.1872	.0616	.0618
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3691.2
Stddev	16.2
%RSD	.43988
#1	3672.8
#2	3697.1
#3	3703.6

Sample Name: MB 160-157443/1-A Acquired: 11/18/2014 19:18:36 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	.0036	<.0000	.0063	.0002	<.0000	<.0000	.0291	<.0000
Stddev	.0016	.0030	.0018	.0063	.0001	.0001	.0034	.0021	.0001
%RSD	725.4	82.65	50.40	99.38	68.22	658.1	144.6	7.359	80.00
#1	.0019	.0070	-.0052	.0116	.0003	-.0001	-.0017	.0276	-.0001
#2	.0001	.0013	-.0039	-.0006	.0001	.0001	.0007	.0315	-.0001
#3	-.0013	.0025	-.0016	.0080	.0001	-.0001	-.0061	.0281	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	.0021	.0049	.0024	.0001	<.0000	<.0000	.0000
Stddev	.0002	.0004	.0002	.0006	.0289	.0014	.0068	.0002	.0002
%RSD	57.94	27.21	8.202	11.52	1225.	1425.	54.63	126.0	592.1
#1	-.0006	-.0020	.0023	.0056	-.0299	.0013	-.0183	-.0001	-.0002
#2	-.0005	-.0012	.0020	.0046	.0260	-.0015	-.0050	.0000	.0002
#3	-.0001	-.0016	.0021	.0046	.0110	.0004	-.0139	-.0004	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0292	.0003	.0015	<.0000	.0128	.0016	.0025	.0105	.0011
Stddev	.0176	.0002	.0014	.0007	.0032	.0012	.0030	.0012	.0001
%RSD	60.34	75.92	92.59	43.61	24.96	78.69	120.6	11.50	5.746
#1	.0473	.0001	.0032	-.0008	.0125	.0029	-.0009	.0092	.0011
#2	.0283	.0003	.0005	-.0018	.0098	.0005	.0049	.0107	.0011
#3	.0120	.0006	.0009	-.0022	.0162	.0012	.0036	.0116	.0010
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: MB 160-157443/1-A Acquired: 11/18/2014 19:18:36 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0011	.0084	.0007	.0016	.1600	.0030	.0069
Stddev	.0001	.0077	.0003	.0003	.0094	.0041	.0001
%RSD	5.366	91.90	46.43	18.92	5.884	135.9	2.077
#1	.0012	.0036	.0006	.0019	.1675	.0015	.0067
#2	.0011	.0172	.0005	.0013	.1495	-.0001	.0070
#3	.0011	.0043	.0011	.0016	.1631	.0076	.0069
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3881.7
Stddev	43.6
%RSD	1.1237
#1	3910.6
#2	3903.1
#3	3831.5

Sample Name: LCS 160-157443/2-B Acquired: 11/18/2014 19:22:33 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1842**	**8.909**	**.9317**	**1.805**	**.9480**	**.9399**	**.9921**	**10.09**	**.9498**
Stddev	.0033	.040	.0276	.004	.0023	.0036	.0308	.26	.0260
%RSD	1.809	.4449	2.967	.2060	.2431	.3845	3.105	2.587	2.735
#1	.1804	8.866	.9018	1.801	.9456	.9358	.9611	9.848	.9245
#2	.1867	8.914	.9369	1.808	.9502	.9425	.9923	10.06	.9485
#3	.1855	8.945	.9564	1.807	.9483	.9415	1.023	10.37	.9765
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.030**	**.9695**	**.9868**	**9.696**	**9.263**	**.9163**	**8.828**	**.9215**	**.5118**
Stddev	.029	.0167	.0280	.034	.027	.0020	.116	.0059	.0151
%RSD	2.779	1.727	2.840	.3513	.2953	.2183	1.315	.6363	2.948
#1	1.002	.9508	.9605	9.657	9.249	.9154	8.695	.9148	.4970
#2	1.028	.9746	.9836	9.719	9.245	.9148	8.912	.9242	.5111
#3	1.059	.9831	1.016	9.711	9.294	.9185	8.876	.9255	.5272
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**8.979**	**1.010**	**.9690**	**1.005**	**9.588**	**.4886**	**.4790**	**4.426**	**1.016**
Stddev	.049	.028	.0276	.028	.307	.0112	.0152	.027	.030
%RSD	.5483	2.760	2.850	2.781	3.205	2.293	3.170	.6081	2.930
#1	8.927	.9827	.9444	.9776	9.310	.4799	.4638	4.398	.9881
#2	9.024	1.010	.9637	1.005	9.537	.4847	.4790	4.452	1.012
#3	8.985	1.038	.9989	1.033	9.918	.5013	.4942	4.430	1.047
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LCS 160-157443/2-B Acquired: 11/18/2014 19:22:33 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9491	.9201	.9703	.2058	1.133	.8960	.9785
Stddev	.0026	.0110	.0020	.0049	.046	.0098	.0264
%RSD	.2705	1.190	.2092	2.361	4.076	1.096	2.702
#1	.9462	.9076	.9685	.2008	1.081	.8848	.9532
#2	.9511	.9279	.9725	.2062	1.147	.9007	.9763
#3	.9500	.9249	.9699	.2105	1.171	.9027	1.006
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3762.1
Stddev	48.6
%RSD	1.2923
#1	3817.6
#2	3742.0
#3	3726.9

Sample Name: 160-9093-H-1-B Acquired: 11/18/2014 19:26:09 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0005**	**<.0000**	**<.0000**	**.0107**	**.0290**	**.0001**	**<.0000**	**5.413**	**.0001**
Stddev	.0002	.0037	.0016	.0039	.0001	.0000	.0013	.050	.0001
%RSD	38.17	1189.	38.53	36.03	.2154	22.55	108.5	.9255	41.33
#1	.0007	-.0045	-.0046	.0135	.0289	.0001	-.0010	5.439	.0002
#2	.0003	.0026	-.0023	.0124	.0290	.0001	-.0026	5.445	.0002
#3	.0006	.0010	-.0054	.0063	.0290	.0001	.0000	5.355	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0004**	**<.0000**	**.0019**	**.0032**	**.3452**	**.0022**	**.6792**	**.0003**	**.0000**
Stddev	.0004	.0020	.0005	.0003	.0198	.0015	.0011	.0003	.0004
%RSD	105.8	112.1	27.27	8.504	5.725	68.97	.1622	88.67	5939.
#1	.0007	-.0024	.0014	.0034	.3447	.0008	.6800	.0000	.0003
#2	.0005	-.0034	.0019	.0029	.3652	.0038	.6796	.0006	-.0004
#3	-.0001	.0005	.0024	.0034	.3257	.0019	.6779	.0003	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.254**	**.0007**	**.0079**	**<.0000**	**.3977**	**.0017**	**<.0000**	**2.120**	**.0003**
Stddev	.010	.0001	.0018	.0026	.0063	.0008	.0030	.005	.0009
%RSD	.4295	17.05	23.23	123.9	1.597	47.08	5657.	.2551	283.8
#1	2.243	.0007	.0079	-.0037	.3999	.0026	.0027	2.119	-.0007
#2	2.259	.0008	.0097	.0009	.4027	.0013	.0003	2.125	.0009
#3	2.261	.0006	.0060	-.0035	.3906	.0012	-.0032	2.114	.0008
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9093-H-1-B Acquired: 11/18/2014 19:26:09 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0376	.0077	.0001	.0029	.1450	<.0000	.0072
Stddev	.0001	.0036	.0003	.0020	.0305	.0034	.0002
%RSD	.1514	46.54	415.8	69.26	21.06	186.8	3.128
#1	.0375	.0084	-.0002	.0024	.1632	-.0057	.0071
#2	.0377	.0109	.0001	.0012	.1621	-.0005	.0071
#3	.0376	.0038	.0003	.0051	.1098	.0008	.0075
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3811.4
Stddev	15.3
%RSD	.40262
#1	3808.3
#2	3797.8
#3	3828.0

Sample Name: 160-9093-H-1-B SD Acquired: 11/18/2014 19:30:03 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=50

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0003**	**<.0000**	**<.0000**	**.0027**	**.0059**	**<.0000**	**.0016**	**1.022**	**<.0000**
Stddev	.0009	.0011	.0033	.0013	.0002	.0000	.0054	.008	.0004
%RSD	334.6	16.69	98.73	47.13	4.202	633.8	340.1	.7573	166.4
#1	.0003	-.0071	.0003	.0026	.0056	-.0001	.0037	1.015	.0002
#2	.0012	-.0054	-.0041	.0040	.0060	.0000	-.0046	1.022	-.0006
#3	-.0007	-.0074	-.0062	.0014	.0061	.0000	.0057	1.030	-.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**<.0000**	**<.0000**	**.0034**	**.0034**	**.0695**	**.0020**	**.1284**	**<.0000**	**.0000**
Stddev	.0002	.0019	.0029	.0014	.0267	.0009	.0117	.0002	.0003
%RSD	68.08	85.55	85.46	40.18	38.48	42.83	9.153	34.06	908.4
#1	-.0003	-.0044	.0003	.0021	.0731	.0023	.1384	-.0008	.0004
#2	-.0004	-.0011	.0038	.0048	.0411	.0011	.1312	-.0005	-.0001
#3	-.0001	-.0012	.0060	.0033	.0942	.0028	.1155	-.0004	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.4186**	**.0003**	**.0031**	**<.0000**	**.0808**	**<.0000**	**.0005**	**.3883**	**<.0000**
Stddev	.0096	.0002	.0019	.0005	.0047	.0018	.0019	.0080	.0005
%RSD	2.291	60.69	62.36	25.61	5.877	520.4	371.7	2.057	637.2
#1	.4258	.0006	.0039	-.0017	.0779	-.0024	.0021	.3814	-.0004
#2	.4224	.0002	.0045	-.0027	.0783	.0008	-.0016	.3970	-.0004
#3	.4077	.0002	.0009	-.0018	.0863	.0005	.0010	.3864	.0005
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9093-H-1-B SD Acquired: 11/18/2014 19:30:03 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=50

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0071	.0065	.0002	<.0000	.1652	.0018	.0070
Stddev	.0001	.0076	.0013	.0017	.0239	.0037	.0004
%RSD	1.854	118.2	696.1	106.6	14.46	203.1	5.380
#1	.0070	.0114	.0007	-.0009	.1662	.0021	.0070
#2	.0072	.0103	-.0013	-.0003	.1408	.0054	.0066
#3	.0072	-.0023	.0012	-.0036	.1885	-.0020	.0073
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3729.2
Stddev	62.3
%RSD	1.6703
#1	3790.2
#2	3731.5
#3	3665.7

Sample Name: CCV Acquired: 11/18/2014 19:34:01 Type: QC
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.9324**	**46.60**	**4.908**	**4.780**	**4.910**	**4.890**	**4.952**	**48.29**	**4.898**
Stddev	.0073	.20	.074	.012	.018	.047	.073	.62	.071
%RSD	.7847	.4222	1.511	.2542	.3717	.9562	1.480	1.290	1.444
#1	.9254	46.79	4.949	4.794	4.930	4.856	4.993	48.56	4.934
#2	.9400	46.62	4.953	4.775	4.905	4.943	4.995	48.72	4.944
#3	.9316	46.40	4.823	4.772	4.894	4.870	4.867	47.57	4.817
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.958**	**5.000**	**4.911**	**49.65**	**49.07**	**4.702**	**46.69**	**4.745**	**1.014**
Stddev	.071	.043	.070	.07	.10	.020	.17	.018	.016
%RSD	1.437	.8626	1.414	.1345	.1980	.4239	.3538	.3760	1.540
#1	4.991	4.969	4.940	49.73	49.17	4.724	46.75	4.763	1.020
#2	5.006	5.050	4.961	49.61	49.04	4.697	46.82	4.744	1.027
#3	4.876	4.982	4.831	49.62	48.99	4.685	46.50	4.727	.9968
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**46.96**	**4.994**	**49.31**	**5.020**	**49.70**	**.9727**	**.9966**	**4.656**	**5.031**
Stddev	.14	.069	.68	.068	.79	.0139	.0188	.028	.075
%RSD	.2999	1.381	1.376	1.360	1.597	1.426	1.888	.5996	1.494
#1	47.10	5.020	49.63	5.052	50.12	.9793	.9997	4.679	5.058
#2	46.95	5.046	49.78	5.066	50.21	.9821	1.014	4.664	5.089
#3	46.82	4.915	48.54	4.941	48.79	.9568	.9765	4.625	4.946
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: CCV Acquired: 11/18/2014 19:34:01 Type: QC
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.800**	**4.704**	**4.909**	**.9900**	**4.908**	**4.690**	**4.986**
Stddev	.012	.036	.012	.0127	.068	.026	.069
%RSD	.2527	.7575	.2381	1.283	1.376	.5457	1.386
#1	4.786	4.677	4.915	1.001	4.868	4.717	5.018
#2	4.806	4.745	4.896	.9935	4.986	4.687	5.034
#3	4.808	4.691	4.916	.9760	4.871	4.666	4.907
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**3775.1**
Stddev	15.0
%RSD	.39843
#1	3790.9
#2	3760.9
#3	3773.6

Sample Name: CCB Acquired: 11/18/2014 19:37:45 Type: QC
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0004**	**.0022**	**.0004**	**.0197**	**.0006**	**.0005**	**.0007**	**.0036**
Stddev	.0005	.0053	.0011	.0057	.0002	.0001	.0035	.0013
%RSD	133.3	245.4	282.2	29.04	42.67	19.06	471.3	37.26
#1	.0004	.0082	.0016	.0172	.0008	.0006	.0040	.0048
#2	.0008	.0001	.0003	.0262	.0005	.0005	.0011	.0022
#3	-.0002	-.0018	-.0007	.0156	.0004	.0004	-.0029	.0039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Cd2288	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0002**	**<.0000**	**<.0000**	**.0034**	**.0066**	**.0033**	**.0009**	**<.0000**
Stddev	.0005	.0003	.0024	.0042	.0007	.0299	.0009	.0122
%RSD	251.4	468.8	107.1	123.8	10.87	902.1	95.33	810.4
#1	.0007	-.0001	-.0034	.0057	.0071	.0194	.0003	-.0033
#2	-.0001	-.0003	-.0037	-.0015	.0070	.0218	.0006	.0115
#3	-.0001	.0003	.0005	.0060	.0058	-.0312	.0019	-.0127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mn2576	Mo2020	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**<.0000**	**.0086**	**.0002**	**.0029**	**<.0000**	**.0057**	**.0011**
Stddev	.0002	.0007	.0027	.0005	.0017	.0027	.0014	.0020
%RSD	376.7	229.5	31.65	345.4	57.15	131.5	24.46	174.9
#1	.0001	.0004	.0067	-.0002	.0039	-.0007	.0060	-.0005
#2	.0003	-.0004	.0074	-.0001	.0039	-.0003	.0042	.0006
#3	-.0002	-.0009	.0117	.0008	.0010	-.0051	.0069	.0034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB Acquired: 11/18/2014 19:37:45 Type: QC
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2516	Sn1899	Sr4077	Th2832	Ti3349	Tl1908	U_3670
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0011	<.0000	.0009	.0006	.0070	.0007	<.0000	W .0824
Stddev	.0018	.0033	.0004	.0001	.0080	.0007	.0008	.0396
%RSD	160.1	69.98	40.37	20.44	113.7	105.6	184.0	48.08
#1	.0014	-.0021	.0006	.0008	.0086	.0004	.0001	.1043
#2	-.0008	-.0035	.0009	.0005	-.0016	.0001	.0000	.0366
#3	.0028	-.0084	.0013	.0006	.0141	.0014	-.0013	.1061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn
High Limit								.0480
Low Limit								-.0470

Elem	V_2908	Zn2138
Units	ppm	ppm
Avg	<.0000	.0008
Stddev	.0019	.0002
%RSD	125.5	27.55
#1	-.0023	.0011
#2	.0007	.0007
#3	-.0030	.0006
Check ?	Chk Pass	Chk Pass
High Limit		
Low Limit		

Int. Std.	Y_3710
Units	Cts/S
Avg	3698.4
Stddev	56.4
%RSD	1.5261
#1	3762.4
#2	3676.9
#3	3655.8

Sample Name: 160-9093-H-1-C MS Acquired: 11/18/2014 19:41:42 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0156**	**.7919**	**.0812**	**.1704**	**.1085**	**.0842**	**.0910**	**5.603**	**.0867**
Stddev	.0007	.0120	.0019	.0019	.0006	.0006	.0023	.052	.0010
%RSD	4.221	1.517	2.361	1.090	.5623	.7122	2.554	.9286	1.197
#1	.0151	.7799	.0791	.1705	.1081	.0835	.0924	5.545	.0855
#2	.0163	.8039	.0817	.1685	.1092	.0846	.0883	5.647	.0874
#3	.0153	.7920	.0828	.1722	.1082	.0844	.0923	5.617	.0871
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0942**	**.0883**	**.0931**	**.8771**	**1.138**	**.0810**	**1.397**	**.0821**	**.0467**
Stddev	.0018	.0019	.0018	.0046	.018	.0006	.004	.0004	.0009
%RSD	1.894	2.207	1.944	.5277	1.582	.7453	.2655	.4402	2.013
#1	.0921	.0866	.0945	.8729	1.125	.0812	1.397	.0817	.0457
#2	.0953	.0904	.0938	.8821	1.130	.0803	1.400	.0821	.0471
#3	.0951	.0880	.0911	.8765	1.158	.0815	1.393	.0825	.0474
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.733**	**.0935**	**.0959**	**.0934**	**1.227**	**.0459**	**.0401**	**2.203**	**.0942**
Stddev	.029	.0010	.0019	.0021	.013	.0046	.0016	.019	.0009
%RSD	1.055	1.120	1.996	2.213	1.045	9.936	4.038	.8663	.9946
#1	2.703	.0923	.0972	.0910	1.216	.0413	.0396	2.188	.0932
#2	2.761	.0943	.0937	.0945	1.241	.0459	.0419	2.224	.0947
#3	2.734	.0938	.0968	.0946	1.225	.0504	.0387	2.196	.0949
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9093-H-1-C MS Acquired: 11/18/2014 19:41:42 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1153	.0912	.0857	.0229	.2658	.0817	.0943
Stddev	.0006	.0071	.0009	.0009	.0307	.0047	.0014
%RSD	.5517	7.781	1.073	3.875	11.57	5.772	1.452
#1	.1147	.0894	.0868	.0233	.2325	.0806	.0927
#2	.1159	.0852	.0851	.0235	.2716	.0868	.0953
#3	.1154	.0991	.0853	.0219	.2932	.0776	.0947
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3756.9
Stddev	19.3
%RSD	.51312
#1	3759.8
#2	3736.3
#3	3774.5

Sample Name: 160-9093-H-1-D MSD Acquired: 11/18/2014 19:45:34 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0152**	**.7752**	**.0793**	**.1656**	**.1051**	**.0822**	**.0898**	**5.341**	**.0834**
Stddev	.0011	.0064	.0020	.0014	.0001	.0001	.0026	.053	.0011
%RSD	7.252	.8251	2.585	.8742	.0781	.1626	2.929	.9854	1.298
#1	.0161	.7777	.0776	.1646	.1051	.0822	.0921	5.298	.0825
#2	.0156	.7800	.0815	.1672	.1052	.0822	.0870	5.324	.0831
#3	.0140	.7680	.0787	.1649	.1051	.0824	.0904	5.400	.0846
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0906**	**.0848**	**.0915**	**.8592**	**1.086**	**.0780**	**1.348**	**.0808**	**.0452**
Stddev	.0009	.0019	.0008	.0020	.010	.0004	.008	.0011	.0007
%RSD	.9408	2.231	.8249	.2368	.9011	.5457	.5707	1.312	1.464
#1	.0900	.0855	.0919	.8584	1.075	.0778	1.341	.0814	.0444
#2	.0902	.0826	.0906	.8577	1.093	.0785	1.356	.0796	.0455
#3	.0916	.0862	.0920	.8615	1.091	.0778	1.348	.0814	.0456
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.593**	**.0900**	**.0929**	**.0906**	**1.194**	**.0430**	**.0427**	**2.130**	**.0915**
Stddev	.017	.0012	.0028	.0005	.006	.0007	.0015	.012	.0008
%RSD	.6457	1.315	3.019	.5910	.4971	1.563	3.455	.5521	.9017
#1	2.574	.0892	.0911	.0900	1.193	.0425	.0411	2.142	.0906
#2	2.605	.0894	.0916	.0906	1.188	.0437	.0439	2.118	.0922
#3	2.599	.0913	.0962	.0911	1.200	.0426	.0432	2.131	.0918
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9093-H-1-D MSD Acquired: 11/18/2014 19:45:34 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1122	.0869	.0841	.0190	.2599	.0779	.0913
Stddev	.0004	.0049	.0007	.0015	.0383	.0009	.0010
%RSD	.3477	5.690	.8853	7.822	14.72	1.127	1.092
#1	.1119	.0925	.0833	.0198	.2937	.0769	.0908
#2	.1126	.0829	.0846	.0198	.2676	.0786	.0908
#3	.1121	.0854	.0845	.0172	.2184	.0781	.0925
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3859.3
Stddev	29.6
%RSD	.76583
#1	3876.1
#2	3876.6
#3	3825.2

Sample Name: 160-9071-C-1-H Acquired: 11/18/2014 19:49:27 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0236	<.0000	.0145	.0037	<.0000	.0003	2.748	<.0000
Stddev	.0010	.0066	.0016	.0035	.0001	.0000	.0025	.032	.0000
%RSD	160.0	27.95	62.41	23.88	2.891	16.47	778.7	1.165	38.45
#1	-.0001	.0248	-.0009	.0170	.0036	.0000	.0031	2.782	-.0001
#2	-.0018	.0165	-.0041	.0161	.0038	.0000	-.0003	2.746	-.0001
#3	.0000	.0296	-.0028	.0106	.0037	.0000	-.0019	2.718	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	.0028	.0145	.0766	.0031	.3764	.0004	.0002
Stddev	.0002	.0017	.0013	.0023	.0130	.0003	.0193	.0003	.0004
%RSD	46.99	201.9	45.17	15.80	16.98	10.25	5.133	74.16	158.3
#1	-.0006	.0002	.0039	.0129	.0899	.0027	.3645	.0002	-.0001
#2	-.0002	.0001	.0014	.0134	.0639	.0033	.3987	.0002	.0007
#3	-.0003	-.0028	.0031	.0171	.0760	.0032	.3660	.0007	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.061	.0008	.0015	<.0000	2.070	.0022	.0001	.4034	<.0000
Stddev	.012	.0004	.0011	.0017	.027	.0039	.0053	.0070	.0011
%RSD	.3036	49.12	70.55	229.0	1.324	178.7	3944.	1.745	145.3
#1	4.049	.0011	.0027	.0008	2.097	.0066	-.0019	.3977	-.0002
#2	4.074	.0007	.0007	-.0026	2.069	.0008	-.0039	.4112	-.0021
#3	4.061	.0004	.0011	-.0004	2.042	-.0009	.0062	.4011	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9071-C-1-H Acquired: 11/18/2014 19:49:27 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0597	.0106	.0005	.0020	.1978	.0006	.0060
Stddev	.0004	.0086	.0011	.0006	.0226	.0004	.0002
%RSD	.6453	80.81	207.7	32.81	11.45	67.84	3.170
#1	.0592	.0039	.0003	.0013	.1732	.0011	.0060
#2	.0598	.0203	-.0004	.0020	.2023	.0003	.0058
#3	.0600	.0077	.0017	.0026	.2178	.0004	.0062
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3798.1
Stddev	11.7
%RSD	.30886
#1	3786.4
#2	3798.1
#3	3809.8

Sample Name: LB 160-153858/1-D Acquired: 11/18/2014 19:53:21 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0010**	**<.0000**	**<.0000**	**.0314**	**.0005**	**.0000**	**<.0000**	**.2844**	**.0002**
Stddev	.0004	.0082	.0023	.0024	.0003	.0000	.0027	.0016	.0001
%RSD	41.38	163.1	49.39	7.580	52.70	539.4	918.9	.5610	62.23
#1	.0010	-.0033	-.0056	.0342	.0008	.0000	-.0027	.2836	.0003
#2	.0014	-.0140	-.0020	.0301	.0002	.0000	-.0008	.2834	.0002
#3	.0006	.0022	-.0063	.0299	.0006	.0000	.0026	.2862	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**<.0000**	**.0026**	**.0023**	**.0561**	**.0012**	**.0756**	**<.0000**	**<.0000**
Stddev	.0006	.0008	.0049	.0011	.0173	.0010	.0167	.0004	.0003
%RSD	449.6	44.62	187.7	50.26	30.86	84.52	22.06	304.6	260.6
#1	-.0001	-.0025	-.0030	.0025	.0519	.0005	.0696	-.0004	.0000
#2	.0008	-.0018	.0060	.0010	.0751	.0024	.0628	-.0003	-.0005
#3	-.0003	-.0009	.0047	.0033	.0412	.0008	.0945	.0003	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.947**	**.0003**	**.0023**	**<.0000**	**.1537**	**.0011**	**<.0000**	**.1456**	**.0009**
Stddev	.017	.0003	.0019	.0005	.0037	.0022	.0008	.0045	.0005
%RSD	.3327	88.75	86.08	42.74	2.427	213.4	80.31	3.124	59.44
#1	4.928	.0000	.0012	-.0014	.1509	.0036	-.0003	.1416	.0003
#2	4.956	.0004	.0011	-.0013	.1522	-.0004	-.0020	.1446	.0013
#3	4.957	.0005	.0045	-.0005	.1579	-.0001	-.0009	.1505	.0010
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LB 160-153858/1-D Acquired: 11/18/2014 19:53:21 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0010	.0107	.0005	.0017	.2048	<.0000	.0065
Stddev	.0000	.0073	.0002	.0014	.0312	.0013	.0001
%RSD	3.770	68.28	35.45	80.34	15.26	149.0	.9430
#1	.0010	.0034	.0006	.0021	.2402	.0000	.0066
#2	.0010	.0180	.0006	.0002	.1810	-.0002	.0065
#3	.0010	.0108	.0003	.0029	.1932	-.0024	.0066
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3847.4
Stddev	18.9
%RSD	.49234
#1	3837.0
#2	3869.2
#3	3835.8

Sample Name: LCS 160-156550/2-A Acquired: 11/18/2014 19:57:16 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	18.47	1.965	3.807	1.972	2.001	<.0000	20.87	1.965
Stddev	.0009	.03	.005	.020	.006	.006	.0020	.08	.006
%RSD	20.42	.1847	.2324	.5337	.2816	.3125	38.33	.3853	.3218
#1	-.0046	18.45	1.964	3.783	1.966	1.994	-.0038	20.79	1.961
#2	-.0048	18.51	1.970	3.817	1.975	2.007	-.0045	20.94	1.973
#3	-.0032	18.45	1.961	3.820	1.975	2.001	-.0077	20.90	1.962
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.118	2.046	1.985	20.27	19.38	1.897	18.75	1.910	<.0000
Stddev	.006	.029	.006	.09	.05	.003	.07	.005	.0005
%RSD	.2817	1.438	.3160	.4552	.2388	.1809	.3753	.2393	69.79
#1	2.113	2.019	1.979	20.16	19.32	1.893	18.81	1.910	-.0001
#2	2.125	2.078	1.992	20.34	19.39	1.900	18.76	1.915	-.0011
#3	2.117	2.041	1.984	20.31	19.41	1.898	18.67	1.906	-.0010
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	23.49	2.072	2.023	2.069	.1528	<.0000	.9838	.1420	<.0000
Stddev	.08	.008	.008	.014	.0041	.0028	.0034	.0076	.0005
%RSD	.3600	.3695	.3991	.6803	2.688	90.78	.3409	5.365	86.17
#1	23.40	2.067	2.017	2.058	.1551	-.0048	.9806	.1492	-.0009
#2	23.57	2.081	2.032	2.084	.1481	-.0046	.9873	.1428	-.0007
#3	23.50	2.068	2.020	2.063	.1552	.0001	.9834	.1341	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LCS 160-156550/2-A Acquired: 11/18/2014 19:57:16 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.968	1.930	.0032	.4143	2.104	1.865	2.033
Stddev	.003	.022	.0006	.0014	.057	.007	.007
%RSD	.1661	1.128	18.25	.3389	2.725	.3695	.3480
#1	1.965	1.905	.0026	.4151	2.062	1.857	2.030
#2	1.971	1.943	.0038	.4127	2.169	1.870	2.041
#3	1.969	1.942	.0032	.4151	2.081	1.868	2.028
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3754.2
Stddev	13.7
%RSD	.36509
#1	3769.5
#2	3743.1
#3	3750.0

Sample Name: 160-9093-G-1-H Acquired: 11/18/2014 20:00:52 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0057	<.0000	.0257	.0181	.0002	<.0000	4.604	<.0000
Stddev	.0009	.0011	.0006	.0037	.0001	.0000	.0036	.042	.0002
%RSD	157.6	19.11	14.37	14.33	.5639	26.98	4515.	.9201	142.3
#1	-.0004	.0063	-.0045	.0273	.0180	.0001	.0040	4.631	-.0002
#2	.0002	.0045	-.0036	.0283	.0182	.0002	-.0013	4.556	-.0004
#3	-.0016	.0065	-.0048	.0215	.0180	.0002	-.0029	4.627	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	<.0000	.0048	.0036	.2497	.0024	.6268	.0001	.0000
Stddev	.0003	.0026	.0014	.0019	.0033	.0011	.0038	.0002	.0004
%RSD	323.9	322.4	28.41	51.30	1.331	44.21	.6046	211.8	1694.
#1	.0000	.0018	.0058	.0050	.2463	.0018	.6286	.0001	.0004
#2	-.0001	-.0034	.0052	.0043	.2499	.0036	.6224	.0003	-.0004
#3	.0004	-.0008	.0032	.0015	.2529	.0018	.6293	-.0001	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.179	.0005	.0077	<.0000	.4575	.0037	<.0000	1.832	.0002
Stddev	.004	.0003	.0030	.0014	.0071	.0018	.0048	.005	.0002
%RSD	.1001	71.94	38.64	51.29	1.561	48.32	223.5	.2813	106.8
#1	4.178	.0006	.0075	-.0034	.4650	.0038	.0019	1.837	.0005
#2	4.175	.0007	.0108	-.0011	.4508	.0055	-.0010	1.827	.0000
#3	4.184	.0001	.0049	-.0037	.4567	.0019	-.0074	1.833	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9093-G-1-H Acquired: 11/18/2014 20:00:52 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0298	.0103	.0009	.0016	.1912	.0001	.0064
Stddev	.0000	.0063	.0010	.0028	.0206	.0012	.0002
%RSD	.1043	60.98	113.4	175.4	10.77	1766.	2.403
#1	.0298	.0175	.0017	-.0016	.2150	.0009	.0063
#2	.0298	.0068	-.0003	.0025	.1780	-.0013	.0063
#3	.0298	.0066	.0013	.0038	.1808	.0005	.0066
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3588.8
Stddev	24.0
%RSD	.66743
#1	3573.6
#2	3616.4
#3	3576.4

Sample Name: 160-9093-G-1-H SD Acquired: 11/18/2014 20:04:47 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=50

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0002**	**<.0000**	**<.0000**	**.0108**	**.0033**	**<.0000**	**.0023**	**.8383**	**.0001**
Stddev	.0007	.0066	.0022	.0030	.0002	.0000	.0035	.0102	.0002
%RSD	465.6	212.5	753.7	27.98	6.993	222.1	153.5	1.216	156.0
#1	.0009	-.0028	-.0022	.0137	.0031	.0000	.0024	.8497	.0001
#2	.0002	-.0098	.0022	.0076	.0035	.0000	.0057	.8354	.0003
#3	-.0006	.0033	-.0009	.0112	.0034	-.0001	-.0013	.8299	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**<.0000**	**<.0000**	**.0029**	**.0017**	**.0446**	**<.0000**	**.1058**	**<.0000**	**<.0000**
Stddev	.0003	.0021	.0020	.0015	.0073	.0022	.0049	.0001	.0007
%RSD	195.5	313.7	68.83	88.38	16.38	880.3	4.646	318.6	2110.
#1	.0001	.0016	.0042	.0035	.0491	.0015	.1097	-.0001	.0008
#2	-.0005	-.0025	.0038	.0007	.0362	.0004	.1074	.0001	-.0003
#3	-.0001	-.0011	.0006	.0010	.0485	-.0027	.1002	-.0001	-.0005
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.7746**	**<.0000**	**.0027**	**<.0000**	**.0839**	**<.0000**	**<.0000**	**.3245**	**.0000**
Stddev	.0092	.0006	.0020	.0017	.0036	.0023	.0027	.0128	.0006
%RSD	1.193	436.9	75.06	115.1	4.279	201.4	76.07	3.951	1608.
#1	.7810	.0001	.0047	-.0008	.0840	-.0002	-.0067	.3378	-.0003
#2	.7640	.0003	.0026	-.0002	.0874	-.0038	-.0022	.3122	-.0003
#3	.7788	-.0009	.0007	-.0034	.0803	.0005	-.0018	.3237	.0008
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9093-G-1-H SD Acquired: 11/18/2014 20:04:47 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=50

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0057	.0092	.0006	.0012	.2219	.0045	.0057
Stddev	.0000	.0076	.0008	.0018	.0474	.0017	.0005
%RSD	.2807	82.16	129.5	145.4	21.34	37.91	8.119
#1	.0057	.0020	.0000	.0033	.1672	.0051	.0062
#2	.0056	.0171	.0004	.0002	.2475	.0059	.0057
#3	.0057	.0085	.0016	.0002	.2509	.0026	.0053
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3803.3
Stddev	50.1
%RSD	1.3160
#1	3746.6
#2	3821.7
#3	3841.5

Sample Name: 160-9093-G-1-I MS Acquired: 11/18/2014 20:08:43 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0184**	**.9070**	**.0938**	**.1936**	**.1032**	**.0963**	**.1019**	**2.978**	**.0974**
Stddev	.0002	.0165	.0011	.0018	.0008	.0004	.0018	.035	.0010
%RSD	.9876	1.820	1.217	.9466	.7695	.4001	1.737	1.186	1.056
#1	.0184	.9184	.0941	.1940	.1041	.0968	.1039	3.011	.0986
#2	.0182	.8880	.0947	.1917	.1026	.0961	.1004	2.981	.0970
#3	.0185	.9145	.0925	.1953	.1030	.0962	.1015	2.941	.0967
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1052**	**.0992**	**.1041**	**1.001**	**1.032**	**.0925**	**1.200**	**.0946**	**.0501**
Stddev	.0013	.0020	.0015	.002	.012	.0012	.008	.0006	.0011
%RSD	1.252	1.986	1.406	.1946	1.192	1.344	.6691	.6107	2.185
#1	.1066	.1011	.1043	1.003	1.023	.0938	1.206	.0950	.0513
#2	.1052	.0992	.1054	1.001	1.027	.0913	1.191	.0940	.0496
#3	.1039	.0972	.1025	.9993	1.046	.0924	1.203	.0949	.0493
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.687**	**.1053**	**.1044**	**.1032**	**1.166**	**.0496**	**.0503**	**.7881**	**.1026**
Stddev	.019	.0013	.0017	.0018	.016	.0012	.0057	.0057	.0015
%RSD	.6996	1.236	1.649	1.703	1.391	2.493	11.26	.7277	1.468
#1	2.696	.1067	.1052	.1050	1.181	.0489	.0509	.7939	.1039
#2	2.666	.1051	.1055	.1032	1.168	.0510	.0556	.7825	.1030
#3	2.700	.1041	.1024	.1015	1.149	.0488	.0444	.7879	.1010
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9093-G-1-I MS Acquired: 11/18/2014 20:08:43 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1077	.1010	.0944	.0265	.2544	.0926	.1095
Stddev	.0006	.0053	.0006	.0013	.0469	.0020	.0016
%RSD	.5609	5.283	.5909	5.027	18.43	2.143	1.501
#1	.1084	.0973	.0950	.0253	.2864	.0921	.1114
#2	.1072	.1071	.0939	.0264	.2762	.0909	.1087
#3	.1076	.0985	.0942	.0279	.2006	.0948	.1084
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3695.7
Stddev	22.4
%RSD	.60694
#1	3671.5
#2	3715.7
#3	3700.1

Sample Name: 160-9093-G-1-J MSD Acquired: 11/18/2014 20:12:36 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0181**	**.9304**	**.0981**	**.1972**	**.1061**	**.0989**	**.1000**	**3.041**	**.0998**
Stddev	.0016	.0081	.0046	.0014	.0006	.0007	.0008	.036	.0011
%RSD	8.604	.8739	4.657	.7009	.5300	.7078	.7810	1.173	1.090
#1	.0184	.9394	.1032	.1958	.1066	.0996	.1008	3.079	.1010
#2	.0195	.9236	.0944	.1986	.1061	.0988	.0998	3.009	.0990
#3	.0165	.9282	.0967	.1973	.1055	.0982	.0993	3.035	.0993
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1078**	**.1033**	**.1071**	**1.032**	**1.076**	**.0940**	**1.240**	**.0973**	**.0510**
Stddev	.0015	.0008	.0033	.003	.034	.0004	.021	.0005	.0006
%RSD	1.376	.7971	3.056	.3209	3.125	.3785	1.717	.4865	1.223
#1	.1092	.1035	.1098	1.035	1.094	.0939	1.265	.0974	.0516
#2	.1063	.1024	.1081	1.030	1.037	.0943	1.228	.0976	.0503
#3	.1080	.1040	.1035	1.029	1.096	.0936	1.227	.0967	.0510
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.754**	**.1086**	**.1041**	**.1041**	**1.160**	**.0470**	**.0487**	**.8128**	**.1036**
Stddev	.016	.0009	.0016	.0013	.012	.0035	.0018	.0129	.0021
%RSD	.5853	.7947	1.578	1.281	1.012	7.458	3.792	1.590	1.988
#1	2.772	.1096	.1059	.1030	1.174	.0484	.0478	.8181	.1059
#2	2.750	.1079	.1036	.1056	1.153	.0430	.0508	.7980	.1022
#3	2.741	.1083	.1028	.1037	1.154	.0496	.0475	.8222	.1026
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9093-G-1-J MSD Acquired: 11/18/2014 20:12:36 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1110	.1067	.0970	.0244	.2910	.0947	.1124
Stddev	.0006	.0053	.0007	.0012	.0364	.0045	.0013
%RSD	.5244	4.933	.7716	4.728	12.52	4.731	1.164
#1	.1116	.1118	.0979	.0235	.3330	.0913	.1139
#2	.1109	.1072	.0968	.0257	.2681	.0930	.1117
#3	.1105	.1013	.0965	.0239	.2718	.0998	.1116
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3659.4
Stddev	29.3
%RSD	.80145
#1	3627.7
#2	3665.0
#3	3685.5

Sample Name: MB 160-157021/1-A Acquired: 11/18/2014 20:16:28 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0070	<.0000	.0019	.0002	<.0000	.0050	.0532	<.0000
Stddev	.0004	.0041	.0018	.0052	.0002	.0000	.0083	.0011	.0004
%RSD	23.99	57.81	199.0	278.0	89.50	197.1	163.8	2.138	3454.
#1	-.0012	.0067	.0011	.0072	.0003	.0000	.0122	.0526	.0001
#2	-.0015	.0113	-.0014	-.0032	.0003	.0000	.0069	.0524	-.0004
#3	-.0020	.0032	-.0025	.0016	.0000	.0000	-.0040	.0545	.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	<.0000	.0046	.0107	.0079	.0004	<.0000	.0002	.0001
Stddev	.0003	.0009	.0034	.0010	.0510	.0012	.0019	.0002	.0001
%RSD	809.4	56.55	74.53	9.578	643.8	318.9	27.25	118.6	77.28
#1	.0001	-.0012	.0050	.0118	.0533	.0017	-.0066	.0002	.0002
#2	.0003	-.0010	.0010	.0102	.0177	-.0002	-.0054	.0004	.0002
#3	-.0003	-.0027	.0077	.0099	-.0472	-.0004	-.0092	.0000	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0116	.0006	.0022	<.0000	.0062	<.0000	<.0000	<.0000	.0015
Stddev	.0092	.0001	.0016	.0013	.0027	.0019	.0006	.0047	.0011
%RSD	79.46	13.27	73.52	53.79	43.06	78.75	37.22	191.9	76.25
#1	.0017	.0007	.0011	-.0023	.0092	-.0025	-.0014	.0029	.0028
#2	.0199	.0006	.0014	-.0038	.0041	-.0004	-.0022	-.0058	.0007
#3	.0132	.0006	.0040	-.0012	.0053	-.0042	-.0011	-.0045	.0009
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: MB 160-157021/1-A Acquired: 11/18/2014 20:16:28 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	.0093	.0010	.0021	.1967	<.0000	.0092
Stddev	.0001	.0055	.0002	.0009	.0152	.0017	.0002
%RSD	42.45	59.57	23.60	45.20	7.721	139.0	1.695
#1	.0002	.0082	.0008	.0027	.1882	.0006	.0094
#2	.0004	.0044	.0008	.0010	.1876	-.0029	.0090
#3	.0002	.0153	.0012	.0025	.2142	-.0015	.0092
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3634.5
Stddev	29.1
%RSD	.80144
#1	3631.5
#2	3665.0
#3	3607.0

Sample Name: CCV Acquired: 11/18/2014 20:20:25 Type: QC
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.9449**	**47.37**	**5.021**	**4.840**	**4.955**	**4.986**	**5.036**	**49.41**	**5.001**
Stddev	.0038	.20	.044	.007	.018	.117	.051	.43	.045
%RSD	.3986	.4136	.8779	.1387	.3650	2.357	1.022	.8709	.9085
#1	.9422	47.59	5.004	4.847	4.976	4.852	5.023	49.26	4.985
#2	.9432	47.23	4.988	4.837	4.944	5.036	4.992	49.08	4.965
#3	.9492	47.28	5.071	4.835	4.946	5.070	5.092	49.90	5.052
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.070**	**5.115**	**5.000**	**50.80**	**49.90**	**4.742**	**48.43**	**4.847**	**1.035**
Stddev	.042	.027	.041	.16	.11	.027	.15	.021	.010
%RSD	.8205	.5248	.8128	.3052	.2152	.5699	.3164	.4229	.9391
#1	5.055	5.110	4.992	50.98	49.96	4.772	48.57	4.870	1.032
#2	5.038	5.090	4.964	50.74	49.97	4.722	48.27	4.830	1.027
#3	5.117	5.143	5.044	50.69	49.78	4.731	48.45	4.840	1.046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**47.65**	**5.108**	**50.35**	**5.126**	**50.84**	**.9944**	**1.017**	**4.738**	**5.136**
Stddev	.15	.050	.40	.045	.49	.0063	.013	.031	.047
%RSD	.3113	.9705	.7926	.8767	.9713	.6356	1.271	.6503	.9094
#1	47.82	5.088	50.25	5.102	50.70	.9920	1.015	4.751	5.116
#2	47.55	5.071	50.01	5.098	50.42	.9897	1.006	4.703	5.103
#3	47.59	5.164	50.79	5.178	51.38	1.002	1.031	4.761	5.190
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: CCV Acquired: 11/18/2014 20:20:25 Type: QC
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.848**	**4.777**	**4.994**	**1.010**	**4.968**	**4.784**	**5.105**
Stddev	.032	.010	.007	.009	.052	.020	.048
%RSD	.6556	.2056	.1510	.8744	1.041	.4234	.9410
#1	4.823	4.785	5.001	1.005	4.976	4.800	5.085
#2	4.837	4.780	4.996	1.005	4.912	4.761	5.069
#3	4.884	4.766	4.986	1.020	5.015	4.791	5.159
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**3711.5**
Stddev	28.9
%RSD	.77746
#1	3728.6
#2	3727.6
#3	3678.2

Sample Name: CCB Acquired: 11/18/2014 20:24:10 Type: QC
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0006	<.0000	<.0000	.0130	.0009	.0005	<.0000	.0033
Stddev	.0006	.0032	.0032	.0005	.0002	.0001	.0013	.0009
%RSD	89.27	235.9	152.2	3.504	16.64	16.63	50.69	27.09
#1	.0000	-.0049	.0016	.0133	.0009	.0006	-.0017	.0033
#2	.0011	.0014	-.0035	.0125	.0011	.0006	-.0039	.0024
#3	.0008	-.0006	-.0045	.0133	.0008	.0004	-.0019	.0042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Cd2288	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	.0001	<.0000	.0014	.0072	.0359	.0019	.0011
Stddev	.0000	.0006	.0013	.0027	.0003	.0024	.0014	.0137
%RSD	13.53	1160.	46.55	188.9	3.928	6.587	76.93	1211.
#1	.0004	-.0004	-.0038	-.0001	.0069	.0343	.0019	-.0131
#2	.0003	.0007	-.0032	.0046	.0073	.0349	.0032	.0143
#3	.0003	-.0001	-.0013	-.0002	.0074	.0386	.0004	.0022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mn2576	Mo2020	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0007	.0001	<.0000	.0006	.0035	<.0000	.0018	.0016
Stddev	.0004	.0001	.0124	.0004	.0025	.0013	.0016	.0041
%RSD	56.00	50.28	153.8	67.14	71.44	70.08	88.46	252.2
#1	.0011	.0001	-.0125	.0002	.0062	-.0004	.0014	.0020
#2	.0007	.0000	-.0177	.0006	.0013	-.0030	.0037	-.0026
#3	.0003	.0001	.0060	.0009	.0029	-.0023	.0005	.0055
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB Acquired: 11/18/2014 20:24:10 Type: QC
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2516	Sn1899	Sr4077	Th2832	Ti3349	Tl1908	U_3670
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0029	<.0000	<.0000	.0006	.0044	.0007	.0032	W .1741
Stddev	.0018	.0088	.0005	.0001	.0065	.0009	.0016	.0270
%RSD	63.75	134.0	120.1	22.81	148.5	135.8	49.95	15.52
#1	.0031	-.0074	-.0007	.0007	-.0029	.0000	.0016	.1908
#2	.0046	-.0150	.0002	.0006	.0098	.0017	.0034	.1886
#3	.0010	.0026	-.0007	.0004	.0063	.0003	.0048	.1429
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn
High Limit								.0480
Low Limit								-.0470

Elem	V_2908	Zn2138
Units	ppm	ppm
Avg	<.0000	.0004
Stddev	.0012	.0002
%RSD	439.5	38.83
#1	-.0003	.0006
#2	.0010	.0003
#3	-.0015	.0003
Check ?	Chk Pass	Chk Pass
High Limit		
Low Limit		

Int. Std.	Y_3710
Units	Cts/S
Avg	3703.2
Stddev	15.9
%RSD	.43054
#1	3706.3
#2	3685.9
#3	3717.3

Sample Name: LCS 160-157021/2-A Acquired: 11/18/2014 20:28:06 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1808**	**9.463**	**.9847**	**1.921**	**1.008**	**1.007**	**.9721**	**10.62**	**.9941**
Stddev	.0011	.053	.0139	.007	.005	.006	.0116	.14	.0118
%RSD	.6132	.5576	1.409	.3555	.5000	.6044	1.198	1.281	1.188
#1	.1796	9.456	.9695	1.926	1.006	1.005	.9586	10.46	.9815
#2	.1811	9.518	.9967	1.923	1.014	1.014	.9794	10.72	1.005
#3	.1817	9.414	.9879	1.913	1.005	1.003	.9782	10.67	.9958
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.080**	**1.047**	**1.029**	**10.42**	**9.890**	**.9689**	**9.517**	**.9839**	**.5100**
Stddev	.012	.004	.012	.06	.058	.0040	.052	.0067	.0066
%RSD	1.090	.3943	1.209	.5476	.5887	.4142	.5420	.6810	1.294
#1	1.067	1.042	1.016	10.37	9.844	.9705	9.483	.9818	.5037
#2	1.090	1.049	1.041	10.48	9.956	.9719	9.576	.9914	.5168
#3	1.083	1.050	1.030	10.42	9.871	.9644	9.492	.9785	.5096
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.490**	**1.063**	**1.017**	**1.056**	**9.492**	**.4807**	**.4956**	**.0256**	**1.004**
Stddev	.034	.014	.013	.010	.124	.0034	.0077	.0106	.014
%RSD	.3541	1.283	1.249	.9759	1.302	.7031	1.553	41.36	1.363
#1	9.464	1.047	1.004	1.046	9.358	.4770	.4884	.0357	.9888
#2	9.528	1.073	1.030	1.066	9.602	.4837	.5037	.0266	1.014
#3	9.477	1.068	1.016	1.056	9.516	.4813	.4945	.0146	1.010
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LCS 160-157021/2-A Acquired: 11/18/2014 20:28:06 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.008	.9763	.9734	.2141	1.187	.9542	1.027
Stddev	.005	.0153	.0038	.0029	.011	.0068	.013
%RSD	.5244	1.563	.3860	1.375	.8864	.7142	1.239
#1	1.007	.9587	.9695	.2107	1.175	.9550	1.013
#2	1.014	.9841	.9770	.2157	1.196	.9606	1.039
#3	1.004	.9861	.9737	.2159	1.190	.9470	1.029
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3714.6
Stddev	35.7
%RSD	.96023
#1	3754.0
#2	3684.4
#3	3705.6

Sample Name: 160-9053-D-12-G Acquired: 11/18/2014 20:31:43 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=50

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0007**	**.0568**	**<.0000**	**.0284**	**.0015**	**.0001**	**.0010**	**2.120**	**<.0000**
Stddev	.0001	.0017	.0006	.0040	.0002	.0001	.0034	.045	.0002
%RSD	20.02	2.995	17.11	13.97	10.52	86.00	330.4	2.102	476.9
#1	.0007	.0549	-.0028	.0239	.0016	.0001	-.0007	2.137	.0002
#2	.0008	.0582	-.0039	.0315	.0013	.0002	-.0011	2.154	-.0001
#3	.0005	.0573	-.0034	.0298	.0015	.0000	.0050	2.070	-.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**<.0000**	**.0013**	**.0693**	**1.556**	**.0018**	**5.197**	**.0042**	**<.0000**
Stddev	.0005	.0013	.0043	.0023	.046	.0010	.071	.0002	.0001
%RSD	489.3	209.5	322.0	3.347	2.971	56.35	1.374	5.301	57.13
#1	-.0004	.0006	.0058	.0703	1.588	.0022	5.228	.0041	-.0004
#2	.0006	-.0004	-.0027	.0710	1.577	.0007	5.247	.0041	-.0001
#3	.0001	-.0020	.0009	.0667	1.503	.0026	5.115	.0045	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**41.22**	**.0006**	**.0064**	**<.0000**	**3.515**	**<.0000**	**<.0000**	**.1110**	**.0002**
Stddev	.38	.0005	.0010	.0015	.059	.0014	.0015	.0115	.0008
%RSD	.9210	79.07	16.37	76.41	1.665	145.9	26.98	10.38	478.2
#1	41.33	.0001	.0076	-.0004	3.537	-.0018	-.0038	.1213	-.0008
#2	41.53	.0008	.0058	-.0034	3.560	.0007	-.0061	.1132	.0005
#3	40.80	.0010	.0058	-.0021	3.449	-.0017	-.0065	.0986	.0007
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9053-D-12-G Acquired: 11/18/2014 20:31:43 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=50

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0322	.0102	.0020	.0015	.1592	.0005	.0063
Stddev	.0002	.0041	.0006	.0010	.0295	.0035	.0001
%RSD	.6911	40.67	30.33	68.41	18.53	697.9	2.165
#1	.0322	.0122	.0027	.0003	.1933	.0043	.0062
#2	.0325	.0130	.0015	.0022	.1434	-.0024	.0065
#3	.0320	.0054	.0019	.0020	.1410	-.0005	.0063
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3811.5
Stddev	90.9
%RSD	2.3847
#1	3764.7
#2	3753.5
#3	3916.2

Sample Name: 160-9053-D-12-G SD Acquired: 11/18/2014 20:35:37 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=250

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0149	<.0000	.0082	.0001	.0000	.0015	.3850	.0002
Stddev	.0006	.0120	.0018	.0029	.0001	.0000	.0001	.0028	.0001
%RSD	55.72	81.01	45.09	35.08	41.49	113.1	6.602	.7310	80.41
#1	-.0004	.0138	-.0059	.0092	.0001	.0001	.0015	.3822	.0000
#2	-.0013	.0034	-.0037	.0049	.0002	.0000	.0016	.3848	.0003
#3	-.0013	.0274	-.0023	.0104	.0001	.0000	.0014	.3878	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005	<.0000	.0004	.0132	.2918	.0001	.9314	.0009	.0001
Stddev	.0002	.0006	.0009	.0006	.0140	.0015	.0242	.0001	.0004
%RSD	33.61	35.05	204.9	4.337	4.783	1312.	2.598	10.97	498.7
#1	.0005	-.0015	-.0006	.0125	.2947	.0009	.9061	.0008	.0001
#2	.0006	-.0012	.0011	.0137	.2766	-.0016	.9543	.0010	-.0003
#3	.0003	-.0024	.0008	.0133	.3040	.0011	.9337	.0008	.0005
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.546	.0007	.0013	<.0000	.6189	.0005	<.0000	.0204	.0005
Stddev	.042	.0002	.0014	.0011	.0047	.0015	.0056	.0010	.0007
%RSD	.5536	29.17	108.8	55.84	.7663	286.8	519.3	5.009	143.4
#1	7.501	.0008	.0016	-.0007	.6134	-.0012	-.0063	.0197	-.0002
#2	7.583	.0005	-.0003	-.0027	.6217	.0016	.0048	.0215	.0005
#3	7.554	.0009	.0024	-.0023	.6216	.0013	-.0017	.0198	.0012
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9053-D-12-G SD Acquired: 11/18/2014 20:35:37 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=250

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0061	.0091	.0002	.0029	.1627	.0001	.0059
Stddev	.0000	.0045	.0007	.0021	.0436	.0015	.0003
%RSD	.4260	49.25	402.5	70.44	26.79	1027.	5.074
#1	.0061	.0123	-.0005	.0020	.1206	-.0012	.0060
#2	.0061	.0109	.0009	.0053	.2077	.0017	.0061
#3	.0061	.0040	.0001	.0015	.1599	-.0001	.0055
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3989.5
Stddev	51.3
%RSD	1.2864
#1	4040.0
#2	3991.0
#3	3937.4

Sample Name: 160-9053-D-12-H MS Acquired: 11/18/2014 20:39:33 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=50

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0019**	**.2335**	**.0153**	**.0538**	**.0190**	**.0176**	**.0156**	**2.173**	**.0178**
Stddev	.0007	.0101	.0021	.0011	.0002	.0001	.0009	.009	.0001
%RSD	40.21	4.317	13.86	2.065	1.084	.7311	5.479	.4224	.3342
#1	.0012	.2406	.0178	.0551	.0192	.0177	.0146	2.163	.0179
#2	.0017	.2220	.0140	.0532	.0189	.0175	.0160	2.180	.0178
#3	.0027	.2381	.0142	.0532	.0189	.0177	.0162	2.177	.0179
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0192**	**.0160**	**.0186**	**.2376**	**1.585**	**.0183**	**4.867**	**.0206**	**.0088**
Stddev	.0005	.0027	.0033	.0006	.012	.0001	.048	.0004	.0002
%RSD	2.406	17.14	17.98	.2390	.7682	.5257	.9811	1.948	2.630
#1	.0193	.0154	.0217	.2382	1.599	.0182	4.851	.0204	.0087
#2	.0196	.0135	.0150	.2375	1.575	.0182	4.829	.0204	.0086
#3	.0187	.0189	.0190	.2371	1.581	.0184	4.921	.0211	.0091
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**37.42**	**.0190**	**.0229**	**.0173**	**3.468**	**.0095**	**.0063**	**.1675**	**.0192**
Stddev	.23	.0002	.0003	.0007	.011	.0003	.0035	.0047	.0001
%RSD	.6094	1.020	1.266	4.173	.3292	3.380	55.64	2.797	.4024
#1	37.40	.0190	.0231	.0166	3.457	.0091	.0093	.1707	.0192
#2	37.20	.0188	.0225	.0180	3.480	.0095	.0071	.1621	.0192
#3	37.65	.0192	.0230	.0174	3.467	.0098	.0025	.1695	.0191
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9053-D-12-H MS Acquired: 11/18/2014 20:39:33 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=50

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0466	.0270	.0176	.0063	.2262	.0132	.0215
Stddev	.0003	.0028	.0004	.0020	.0255	.0025	.0001
%RSD	.6449	10.40	2.038	31.55	11.29	19.35	.3741
#1	.0465	.0245	.0177	.0055	.2159	.0161	.0216
#2	.0463	.0300	.0172	.0048	.2074	.0120	.0215
#3	.0469	.0265	.0178	.0086	.2553	.0114	.0215
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3858.5
Stddev	6.1
%RSD	.15939
#1	3862.7
#2	3861.2
#3	3851.4

Sample Name: 160-9053-D-12-I MSD Acquired: 11/18/2014 20:43:25 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=50

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0044**	**.2752**	**.0167**	**.0630**	**.0218**	**.0203**	**.0182**	**2.434**	**.0205**
Stddev	.0006	.0107	.0024	.0043	.0002	.0001	.0039	.024	.0004
%RSD	13.75	3.905	14.27	6.839	1.053	.5390	21.30	.9654	1.922
#1	.0037	.2868	.0160	.0617	.0218	.0204	.0146	2.460	.0209
#2	.0046	.2656	.0147	.0595	.0216	.0203	.0177	2.424	.0203
#3	.0048	.2733	.0194	.0678	.0221	.0202	.0223	2.416	.0202
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0221**	**.0203**	**.0227**	**.2749**	**1.815**	**.0193**	**5.481**	**.0237**	**.0103**
Stddev	.0002	.0015	.0036	.0047	.040	.0016	.044	.0002	.0005
%RSD	1.086	7.174	15.94	1.715	2.192	8.066	.7968	.8807	5.138
#1	.0223	.0212	.0198	.2771	1.857	.0200	5.514	.0236	.0100
#2	.0222	.0211	.0268	.2782	1.778	.0175	5.498	.0239	.0100
#3	.0219	.0186	.0216	.2695	1.810	.0204	5.432	.0235	.0109
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**42.70**	**.0215**	**.0288**	**.0199**	**3.878**	**.0109**	**.0115**	**.1811**	**.0216**
Stddev	.20	.0002	.0007	.0010	.032	.0023	.0023	.0021	.0012
%RSD	.4771	1.121	2.468	5.141	.8361	21.30	19.70	1.150	5.694
#1	42.89	.0216	.0282	.0208	3.915	.0133	.0133	.1801	.0220
#2	42.49	.0213	.0286	.0200	3.865	.0107	.0090	.1797	.0225
#3	42.71	.0217	.0296	.0188	3.853	.0087	.0124	.1835	.0202
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9053-D-12-I MSD Acquired: 11/18/2014 20:43:25 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=50

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0533	.0286	.0212	.0052	.2542	.0181	.0256
Stddev	.0002	.0071	.0010	.0024	.0168	.0009	.0004
%RSD	.3689	24.72	4.700	45.75	6.604	4.830	1.387
#1	.0534	.0280	.0222	.0036	.2474	.0191	.0259
#2	.0530	.0359	.0203	.0079	.2733	.0174	.0252
#3	.0533	.0218	.0210	.0040	.2418	.0179	.0258
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3848.7
Stddev	32.6
%RSD	.84591
#1	3828.2
#2	3831.7
#3	3886.3

Sample Name: 160-9053-D-12-G PDS Acquired: 11/18/2014 20:47:17 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=50

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0822**	**1.848**	**.0898**	**.4882**	**.4774**	**.0494**	**1.675**	**11.76**	**.0474**
Stddev	.0001	.011	.0029	.0046	.0012	.0002	.034	.15	.0007
%RSD	.1344	.6032	3.184	.9390	.2485	.4296	2.023	1.241	1.411
#1	.0823	1.836	.0873	.4929	.4772	.0493	1.641	11.60	.0467
#2	.0821	1.852	.0892	.4838	.4763	.0493	1.709	11.88	.0481
#3	.0821	1.857	.0929	.4880	.4787	.0497	1.677	11.82	.0473
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.4972**	**.0858**	**.2451**	**1.051**	**48.84**	**.4589**	**13.70**	**.1417**	**.4045**
Stddev	.0071	.0027	.0032	.003	.11	.0026	.06	.0010	.0061
%RSD	1.431	3.182	1.314	.2590	.2291	.5718	.4547	.6931	1.520
#1	.4894	.0840	.2457	1.053	48.90	.4581	13.64	.1411	.3989
#2	.5033	.0845	.2481	1.048	48.71	.4567	13.69	.1413	.4111
#3	.4989	.0890	.2417	1.053	48.91	.4618	13.76	.1429	.4037
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**48.54**	**.4001**	**2.195**	**.0972**	**52.97**	**.0930**	**.1444**	**3.652**	**.9929**
Stddev	.13	.0054	.034	.0016	.95	.0054	.0040	.021	.0147
%RSD	.2635	1.340	1.553	1.664	1.794	5.788	2.748	.5617	1.482
#1	48.44	.3941	2.160	.0966	52.05	.0869	.1435	3.643	.9766
#2	48.49	.4045	2.227	.0991	53.94	.0973	.1409	3.637	1.005
#3	48.68	.4016	2.199	.0961	52.92	.0946	.1487	3.675	.9970
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9053-D-12-G PDS Acquired: 11/18/2014 20:47:17 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=50

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0777	1.102	.1944	.2007	4.720	.4389	.2033
Stddev	.0003	.006	.0010	.0030	.064	.0058	.0034
%RSD	.3689	.5271	.5237	1.506	1.346	1.331	1.688
#1	.0778	1.099	.1950	.1973	4.752	.4442	.1999
#2	.0774	1.109	.1933	.2019	4.760	.4326	.2068
#3	.0780	1.099	.1951	.2030	4.646	.4399	.2032
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3962.4
Stddev	19.9
%RSD	.50226
#1	3984.2
#2	3945.1
#3	3957.9

Sample Name: MB 160-157084/1-A Acquired: 11/18/2014 20:50:57 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0199	<.0000	.0170	.0001	.0000	<.0000	.0568	.0000
Stddev	.0006	.0043	.0011	.0050	.0002	.0000	.0062	.0010	.0002
%RSD	85.36	21.63	26.90	29.55	115.6	40.16	291.2	1.775	519.7
#1	-.0013	.0175	-.0053	.0147	.0001	.0000	-.0066	.0580	-.0002
#2	-.0005	.0248	-.0031	.0228	.0003	.0000	.0050	.0561	.0000
#3	-.0002	.0173	-.0041	.0135	.0000	.0000	-.0048	.0564	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	.0004	.0109	.0443	.0004	.0125	.0002	.0000
Stddev	.0003	.0015	.0026	.0020	.0114	.0001	.0168	.0002	.0002
%RSD	174.5	3082.	612.4	18.25	25.81	22.09	134.4	65.72	1051.
#1	.0001	.0011	.0033	.0130	.0367	.0003	-.0062	.0001	-.0001
#2	-.0001	-.0018	-.0015	.0107	.0575	.0005	.0261	.0004	.0003
#3	-.0005	.0005	-.0006	.0090	.0387	.0004	.0175	.0003	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0508	.0003	.0029	<.0000	.0030	.0021	<.0000	.0508	.0010
Stddev	.0053	.0006	.0002	.0007	.0064	.0023	.0039	.0045	.0002
%RSD	10.51	192.3	5.688	57.36	213.3	105.3	260.7	8.944	24.53
#1	.0510	.0007	.0028	-.0019	.0098	.0014	.0028	.0462	.0011
#2	.0454	-.0004	.0029	-.0012	.0023	.0003	-.0025	.0509	.0007
#3	.0561	.0006	.0031	-.0005	-.0030	.0047	-.0047	.0552	.0012
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: MB 160-157084/1-A Acquired: 11/18/2014 20:50:57 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0103	.0003	.0014	.2066	<.0000	.0093
Stddev	.0001	.0033	.0012	.0012	.0443	.0021	.0001
%RSD	44.73	32.36	352.2	88.50	21.44	285.8	.7837
#1	.0001	.0078	.0016	.0004	.2065	-.0011	.0093
#2	.0001	.0089	-.0007	.0027	.2509	-.0026	.0093
#3	.0002	.0140	.0001	.0010	.1623	.0015	.0092
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4227.3
Stddev	21.8
%RSD	.51597
#1	4202.2
#2	4238.6
#3	4241.2

Sample Name: LCS 160-157084/2-A Acquired: 11/18/2014 20:54:52 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1826**	**9.129**	**.9264**	**2.089**	**.9666**	**.9565**	**.9567**	**9.792**	**.9401**
Stddev	.0017	.025	.0051	.009	.0032	.0018	.0120	.076	.0070
%RSD	.9343	.2735	.5535	.4325	.3346	.1863	1.259	.7747	.7416
#1	.1815	9.154	.9307	2.099	.9702	.9585	.9590	9.820	.9426
#2	.1817	9.131	.9207	2.083	.9658	.9551	.9437	9.706	.9322
#3	.1846	9.104	.9278	2.084	.9638	.9558	.9674	9.850	.9454
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.004**	**1.003**	**.9763**	**9.843**	**9.535**	**.9371**	**8.894**	**.9321**	**.4926**
Stddev	.006	.017	.0072	.017	.005	.0034	.020	.0024	.0039
%RSD	.5647	1.672	.7407	.1738	.0494	.3611	.2245	.2628	.7869
#1	1.008	.9896	.9780	9.857	9.530	.9400	8.890	.9335	.4935
#2	.9978	.9977	.9684	9.824	9.539	.9378	8.876	.9293	.4883
#3	1.006	1.022	.9826	9.847	9.535	.9334	8.915	.9335	.4959
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.249**	**.9881**	**.9516**	**.9924**	**9.272**	**.4703**	**.4733**	**2.334**	**.9688**
Stddev	.034	.0085	.0071	.0100	.081	.0042	.0062	.014	.0050
%RSD	.3670	.8564	.7459	1.009	.8685	.8974	1.316	.6109	.5188
#1	9.281	.9909	.9530	.9929	9.320	.4716	.4699	2.337	.9728
#2	9.254	.9786	.9439	.9822	9.179	.4656	.4695	2.319	.9631
#3	9.213	.9948	.9579	1.002	9.316	.4738	.4805	2.347	.9704
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LCS 160-157084/2-A Acquired: 11/18/2014 20:54:52 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9644	.9414	.9507	.2007	1.218	.9016	.9674
Stddev	.0042	.0153	.0017	.0024	.043	.0056	.0065
%RSD	.4361	1.623	.1789	1.217	3.505	.6263	.6738
#1	.9692	.9238	.9518	.2034	1.170	.9081	.9690
#2	.9628	.9493	.9515	.1985	1.232	.8984	.9603
#3	.9612	.9511	.9487	.2003	1.252	.8982	.9730
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3954.9
Stddev	31.7
%RSD	.80088
#1	3987.3
#2	3953.3
#3	3924.0

Sample Name: 160-9103-B-34-F Acquired: 11/18/2014 20:58:29 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	9.416	.0061	.0039	.1106	.0009	.0037	2.632	<.0000
Stddev	.0004	.028	.0014	.0008	.0000	.0000	.0029	.017	.0000
%RSD	20.71	.2985	22.82	21.68	.0282	2.029	77.24	.6311	25.95
#1	-.0018	9.384	.0073	.0038	.1105	.0009	.0005	2.616	-.0001
#2	-.0020	9.437	.0046	.0048	.1106	.0009	.0048	2.631	-.0001
#3	-.0026	9.428	.0063	.0031	.1106	.0009	.0060	2.649	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0114	.0120	.0082	32.09	.7101	.0061	1.856	2.632	.0011
Stddev	.0004	.0003	.0004	.07	.0254	.0011	.007	.009	.0001
%RSD	3.154	2.125	4.285	.2239	3.572	18.18	.3709	.3255	10.43
#1	.0114	.0118	.0078	32.02	.7354	.0069	1.859	2.629	.0011
#2	.0118	.0123	.0085	32.08	.7103	.0048	1.849	2.642	.0012
#3	.0111	.0119	.0082	32.16	.6847	.0066	1.862	2.625	.0010
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0341	.0143	.4865	.0171	.0730	.0007	<.0000	.2771	.0018
Stddev	.0079	.0001	.0051	.0009	.0036	.0018	.0023	.0049	.0008
%RSD	23.23	.9723	1.053	5.190	4.982	262.4	834.9	1.780	43.24
#1	.0414	.0141	.4816	.0181	.0713	.0024	-.0023	.2804	.0021
#2	.0354	.0143	.4859	.0164	.0772	-.0012	.0021	.2795	.0025
#3	.0256	.0144	.4918	.0169	.0705	.0009	-.0006	.2714	.0010
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9103-B-34-F Acquired: 11/18/2014 20:58:29 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0048	.0230	.0402	.0027	.2973	.0226	.0392
Stddev	.0000	.0056	.0008	.0008	.0245	.0017	.0004
%RSD	.8320	24.55	2.070	30.68	8.249	7.695	1.060
#1	.0047	.0175	.0393	.0032	.3030	.0210	.0392
#2	.0048	.0288	.0405	.0018	.2704	.0222	.0387
#3	.0048	.0226	.0408	.0033	.3184	.0245	.0395
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4115.3
Stddev	10.9
%RSD	.26550
#1	4119.8
#2	4102.9
#3	4123.3

Sample Name: 160-9103-B-34-F SD Acquired: 11/18/2014 21:02:21 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=50

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	1.942	<.0000	.0033	.0227	.0002	.0046	.5264	<.0000
Stddev	.0002	.002	.0014	.0018	.0002	.0000	.0031	.0034	.0001
%RSD	27.30	.1101	119.0	56.50	.8158	22.78	67.58	.6391	87.02
#1	-.0005	1.942	-.0010	.0025	.0228	.0001	.0016	.5277	-.0003
#2	-.0005	1.944	.0001	.0019	.0228	.0002	.0078	.5226	.0000
#3	-.0008	1.940	-.0026	.0054	.0225	.0002	.0043	.5289	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0023	.0014	.0021	6.620	.1572	.0017	.3879	.5434	.0002
Stddev	.0005	.0012	.0014	.009	.0352	.0016	.0081	.0014	.0004
%RSD	20.58	84.90	66.05	.1292	22.37	96.26	2.094	.2665	219.6
#1	.0027	.0001	.0015	6.616	.1233	.0022	.3813	.5447	-.0001
#2	.0024	.0018	.0012	6.629	.1935	.0031	.3970	.5419	.0000
#3	.0018	.0023	.0038	6.614	.1546	-.0001	.3855	.5437	.0007
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0072	.0028	.0971	.0015	.0147	.0013	.0014	.0566	<.0000
Stddev	.0040	.0006	.0006	.0009	.0026	.0018	.0041	.0011	.0004
%RSD	54.61	23.21	.6688	58.07	17.59	137.2	283.6	1.976	318.4
#1	.0097	.0033	.0979	.0007	.0177	-.0004	.0043	.0579	-.0003
#2	.0093	.0029	.0968	.0024	.0136	.0012	.0033	.0558	.0004
#3	.0027	.0021	.0967	.0014	.0129	.0032	-.0032	.0561	-.0005
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9103-B-34-F SD Acquired: 11/18/2014 21:02:21 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=50

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0010	.0162	.0086	.0019	.2461	.0061	.0120
Stddev	.0000	.0058	.0006	.0023	.0245	.0018	.0004
%RSD	3.657	35.50	6.445	124.9	9.939	29.89	3.704
#1	.0010	.0097	.0090	.0043	.2630	.0043	.0119
#2	.0011	.0185	.0088	.0016	.2181	.0079	.0117
#3	.0010	.0204	.0080	-.0004	.2573	.0060	.0125
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3990.8
Stddev	4.7
%RSD	.11674
#1	3991.3
#2	3985.8
#3	3995.1

Sample Name: CCV Acquired: 11/18/2014 21:06:17 Type: QC
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.9267**	**46.52**	**4.926**	**4.734**	**4.924**	**4.850**	**5.008**	**47.42**	**4.909**
Stddev	.0063	.07	.021	.017	.007	.012	.029	.19	.024
%RSD	.6813	.1515	.4309	.3553	.1343	.2428	.5754	.3960	.4831
#1	.9330	46.53	4.948	4.715	4.917	4.840	5.040	47.62	4.936
#2	.9204	46.45	4.927	4.741	4.925	4.863	4.986	47.41	4.901
#3	.9267	46.59	4.905	4.747	4.931	4.847	4.997	47.24	4.890
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.924**	**5.008**	**4.954**	**49.50**	**49.25**	**4.721**	**46.02**	**4.712**	**1.021**
Stddev	.029	.026	.023	.03	.04	.010	.17	.006	.002
%RSD	.5877	.5158	.4647	.0602	.0786	.2171	.3797	.1221	.2266
#1	4.957	5.026	4.980	49.48	49.25	4.719	46.22	4.719	1.024
#2	4.909	4.978	4.949	49.54	49.22	4.713	45.91	4.708	1.021
#3	4.905	5.020	4.935	49.49	49.29	4.733	45.93	4.710	1.019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**46.77**	**4.964**	**48.95**	**5.007**	**50.24**	**.9888**	**.9962**	**4.603**	**5.011**
Stddev	.13	.023	.20	.016	.31	.0057	.0089	.017	.026
%RSD	.2766	.4626	.4187	.3223	.6122	.5796	.8971	.3585	.5231
#1	46.68	4.989	49.17	5.025	50.59	.9952	1.005	4.616	5.039
#2	46.71	4.960	48.93	4.999	50.13	.9843	.9869	4.584	5.005
#3	46.92	4.943	48.76	4.996	50.01	.9868	.9969	4.608	4.988
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: CCV Acquired: 11/18/2014 21:06:17 Type: QC
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.831**	**4.688**	**4.891**	**.9865**	**5.014**	**4.655**	**5.000**
Stddev	.038	.029	.009	.0052	.042	.007	.024
%RSD	.7821	.6245	.1754	.5281	.8318	.1524	.4867
#1	4.866	4.675	4.882	.9925	5.026	4.661	5.028
#2	4.791	4.668	4.891	.9838	4.967	4.647	4.990
#3	4.836	4.722	4.899	.9832	5.048	4.657	4.983
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**3864.7**
Stddev	6.1
%RSD	.15769
#1	3864.3
#2	3858.7
#3	3870.9

Sample Name: CCB Acquired: 11/18/2014 21:10:01 Type: QC
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0159	<.0000	.0136	.0004	.0005	.0051	.0014
Stddev	.0009	.0136	.0026	.0032	.0002	.0001	.0025	.0007
%RSD	46.43	85.83	223.9	23.74	41.68	18.22	49.04	48.38
#1	-.0014	.0186	-.0023	.0119	.0004	.0006	.0063	.0010
#2	-.0030	.0011	-.0030	.0173	.0006	.0005	.0022	.0022
#3	-.0014	.0280	.0018	.0115	.0002	.0004	.0068	.0011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Cd2288	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	.0001	<.0000	.0004	.0065	.0277	.0017	.0136
Stddev	.0003	.0006	.0004	.0017	.0016	.0191	.0009	.0085
%RSD	165.4	434.9	75.16	378.0	24.82	68.99	54.15	62.72
#1	.0003	-.0005	-.0009	.0024	.0083	.0145	.0012	.0154
#2	.0004	.0001	-.0007	-.0005	.0056	.0190	.0028	.0210
#3	-.0002	.0008	-.0001	-.0005	.0056	.0496	.0012	.0043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mn2576	Mo2020	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	.0001	.0102	.0004	.0034	<.0000	.0010	.0021
Stddev	.0002	.0002	.0052	.0004	.0034	.0016	.0063	.0020
%RSD	66.85	221.5	51.30	96.35	98.22	160.0	660.6	93.03
#1	.0003	-.0001	.0161	.0007	.0073	.0009	.0072	.0030
#2	.0001	.0003	.0082	.0005	.0018	-.0019	.0010	.0035
#3	.0004	.0001	.0062	.0000	.0011	-.0020	-.0054	-.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB Acquired: 11/18/2014 21:10:01 Type: QC
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2516	Sn1899	Sr4077	Th2832	Ti3349	Tl1908	U_3670
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005	<.0000	.0006	.0006	.0093	.0008	.0017	W .2286
Stddev	.0017	.0079	.0006	.0001	.0042	.0012	.0012	.0216
%RSD	331.0	84.54	100.7	23.06	45.01	148.8	72.34	9.454
#1	-.0009	-.0020	-.0001	.0007	.0045	.0019	.0028	.2454
#2	.0024	-.0176	.0008	.0006	.0113	.0009	.0019	.2042
#3	.0000	-.0082	.0011	.0004	.0122	-.0004	.0004	.2363
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn
High Limit								.0480
Low Limit								-.0470

Elem	V_2908	Zn2138
Units	ppm	ppm
Avg	.0019	.0002
Stddev	.0017	.0003
%RSD	87.60	178.9
#1	.0028	.0006
#2	.0030	-.0001
#3	.0000	.0001
Check ?	Chk Pass	Chk Pass
High Limit		
Low Limit		

Int. Std.	Y_3710
Units	Cts/S
Avg	4052.3
Stddev	36.1
%RSD	.89000
#1	4029.7
#2	4093.9
#3	4033.2

Sample Name: 160-9103-B-34-G MS Acquired: 11/18/2014 21:13:58 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0163**	**14.14**	**.0926**	**.1554**	**.2259**	**.0894**	**.0904**	**3.237**	**.0865**
Stddev	.0011	.10	.0020	.0025	.0014	.0006	.0040	.060	.0018
%RSD	6.612	.6967	2.138	1.603	.6399	.6157	4.440	1.844	2.042
#1	.0163	14.07	.0907	.1583	.2254	.0889	.0949	3.174	.0846
#2	.0174	14.25	.0924	.1536	.2276	.0900	.0872	3.292	.0881
#3	.0152	14.09	.0947	.1545	.2248	.0892	.0892	3.245	.0867
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1226**	**.1018**	**.0996**	**33.91**	**2.020**	**.0949**	**2.870**	**3.450**	**.0458**
Stddev	.0024	.0026	.0026	.13	.015	.0009	.016	.033	.0014
%RSD	1.994	2.547	2.651	.3912	.7516	.8959	.5424	.9415	3.110
#1	.1199	.1008	.0973	33.81	2.036	.0950	2.854	3.424	.0443
#2	.1246	.1047	.1025	34.06	2.018	.0941	2.885	3.486	.0471
#3	.1234	.0999	.0990	33.87	2.006	.0958	2.869	3.441	.0459
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.8631**	**.1049**	**.4508**	**.1645**	**.9238**	**.0273**	**.0449**	**.3900**	**.0849**
Stddev	.0064	.0024	.0086	.0041	.0196	.0007	.0046	.0096	.0006
%RSD	.7445	2.251	1.915	2.508	2.125	2.654	10.31	2.468	.7045
#1	.8611	.1023	.4420	.1599	.9097	.0277	.0396	.3798	.0842
#2	.8703	.1068	.4593	.1676	.9462	.0278	.0483	.3990	.0853
#3	.8580	.1056	.4512	.1662	.9155	.0265	.0468	.3913	.0852
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9103-B-34-G MS Acquired: 11/18/2014 21:13:58 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0936	.1043	.1048	.0196	.3541	.1057	.1224
Stddev	.0008	.0023	.0004	.0032	.0190	.0023	.0020
%RSD	.8704	2.174	.4185	16.44	5.369	2.130	1.647
#1	.0930	.1034	.1044	.0174	.3411	.1075	.1203
#2	.0945	.1069	.1052	.0181	.3759	.1064	.1243
#3	.0933	.1027	.1048	.0233	.3453	.1032	.1227
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4141.7
Stddev	67.8
%RSD	1.6368
#1	4219.4
#2	4094.8
#3	4110.9

Sample Name: 160-9103-B-34-H MSD Acquired: 11/18/2014 21:17:49 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0150**	**14.54**	**.0915**	**.1433**	**.1438**	**.0858**	**.0945**	**3.109**	**.0847**
Stddev	.0006	.08	.0037	.0029	.0008	.0004	.0019	.047	.0011
%RSD	4.289	.5549	4.020	2.044	.5254	.4842	1.963	1.502	1.327
#1	.0152	14.46	.0926	.1467	.1432	.0856	.0924	3.082	.0840
#2	.0154	14.53	.0874	.1415	.1434	.0855	.0950	3.082	.0841
#3	.0142	14.62	.0946	.1418	.1446	.0862	.0960	3.163	.0860
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1014**	**.1021**	**.0971**	**42.84**	**1.971**	**.0916**	**2.788**	**.9286**	**.0443**
Stddev	.0019	.0002	.0013	.21	.032	.0004	.025	.0055	.0006
%RSD	1.830	.2047	1.388	.4910	1.618	.4772	.8961	.5946	1.456
#1	.0998	.1021	.0967	42.68	1.935	.0913	2.781	.9257	.0436
#2	.1009	.1022	.0960	42.76	1.995	.0921	2.768	.9252	.0445
#3	.1034	.1018	.0986	43.08	1.983	.0914	2.816	.9350	.0449
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.8378**	**.1055**	**.6667**	**.1090**	**.9058**	**.0251**	**.0394**	**.3757**	**.0829**
Stddev	.0021	.0022	.0093	.0020	.0148	.0051	.0008	.0035	.0016
%RSD	.2544	2.054	1.395	1.804	1.639	20.35	1.906	.9205	1.887
#1	.8367	.1037	.6579	.1074	.8967	.0279	.0389	.3766	.0826
#2	.8402	.1048	.6658	.1085	.8978	.0192	.0402	.3719	.0816
#3	.8364	.1079	.6764	.1112	.9230	.0283	.0390	.3787	.0846
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9103-B-34-H MSD Acquired: 11/18/2014 21:17:49 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0900	.1042	.0980	.0218	.3384	.1057	.1312
Stddev	.0003	.0037	.0003	.0020	.0118	.0016	.0018
%RSD	.3876	3.507	.2832	9.062	3.492	1.484	1.367
#1	.0898	.1083	.0979	.0231	.3439	.1062	.1297
#2	.0899	.1032	.0984	.0226	.3249	.1039	.1308
#3	.0904	.1012	.0979	.0195	.3465	.1069	.1332
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4174.3
Stddev	34.3
%RSD	.82216
#1	4198.6
#2	4189.2
#3	4135.0

Sample Name: 160-9103-B-34-F PDS Acquired: 11/18/2014 21:21:40 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0801**	**10.85**	**.0991**	**.4434**	**.5642**	**.0483**	**1.699**	**12.42**	**.0472**
Stddev	.0018	.08	.0008	.0048	.0031	.0003	.025	.14	.0008
%RSD	2.276	.7625	.8286	1.071	.5574	.6026	1.483	1.165	1.741
#1	.0820	10.91	.0981	.4454	.5663	.0486	1.727	12.58	.0481
#2	.0784	10.76	.0996	.4379	.5606	.0480	1.679	12.30	.0466
#3	.0799	10.89	.0994	.4467	.5657	.0484	1.690	12.38	.0468
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.5096**	**.0955**	**.2532**	**31.86**	**46.54**	**.4497**	**10.53**	**2.679**	**.4044**
Stddev	.0079	.0008	.0063	.16	.27	.0036	.07	.020	.0059
%RSD	1.545	.8545	2.505	.4984	.5870	.8028	.6384	.7298	1.449
#1	.5184	.0950	.2599	32.01	46.70	.4522	10.55	2.689	.4111
#2	.5032	.0965	.2473	31.69	46.22	.4455	10.46	2.657	.4001
#3	.5071	.0952	.2523	31.89	46.68	.4513	10.59	2.692	.4020
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**8.634**	**.4153**	**2.645**	**.1176**	**49.23**	**.0931**	**.1411**	**3.711**	**.9953**
Stddev	.077	.0072	.036	.0031	.89	.0018	.0011	.043	.0168
%RSD	.8902	1.731	1.363	2.595	1.813	1.950	.8000	1.157	1.692
#1	8.671	.4235	2.685	.1211	50.25	.0942	.1424	3.723	1.013
#2	8.546	.4099	2.616	.1157	48.61	.0941	.1405	3.663	.9802
#3	8.686	.4126	2.632	.1161	48.82	.0910	.1403	3.747	.9923
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9103-B-34-F PDS Acquired: 11/18/2014 21:21:40 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0498	1.140	.2237	.1995	4.762	.4399	.2317
Stddev	.0003	.003	.0008	.0027	.062	.0092	.0036
%RSD	.5308	.2513	.3532	1.360	1.297	2.089	1.534
#1	.0500	1.140	.2246	.2021	4.833	.4450	.2357
#2	.0495	1.137	.2230	.1967	4.733	.4293	.2288
#3	.0500	1.143	.2237	.1998	4.720	.4454	.2306
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4002.6
Stddev	24.7
%RSD	.61777
#1	3981.2
#2	4029.7
#3	3996.9

Sample Name: 160-9083-A-13-B Acquired: 11/18/2014 21:25:20 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	7.182	.0058	<.0000	1.235	.0009	.0030	1.712	<.0000
Stddev	.0006	.049	.0027	.0037	.004	.0000	.0051	.036	.0000
%RSD	53.80	.6818	46.06	84.89	.3421	3.135	172.1	2.095	10.91
#1	-.0011	7.150	.0039	-.0002	1.231	.0008	.0051	1.686	-.0002
#2	-.0005	7.159	.0089	-.0058	1.234	.0009	-.0029	1.697	-.0002
#3	-.0018	7.239	.0046	-.0072	1.239	.0009	.0067	1.753	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0289	.0175	.0048	39.89	.4413	.0035	1.112	10.53	.0020
Stddev	.0007	.0013	.0005	.29	.0556	.0016	.015	.09	.0001
%RSD	2.456	7.540	11.50	.7206	12.59	45.13	1.309	.8439	6.741
#1	.0282	.0189	.0048	39.67	.4056	.0047	1.096	10.48	.0021
#2	.0290	.0173	.0053	39.78	.5053	.0042	1.115	10.48	.0020
#3	.0296	.0163	.0042	40.21	.4129	.0017	1.124	10.64	.0019
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0280	.0162	.2659	.0162	.0610	.0045	.0005	.1972	.0000
Stddev	.0034	.0008	.0054	.0014	.0045	.0015	.0018	.0069	.0006
%RSD	12.10	5.170	2.019	8.514	7.297	32.23	377.4	3.518	2416.
#1	.0268	.0155	.2618	.0149	.0588	.0029	.0018	.2039	.0000
#2	.0254	.0160	.2640	.0160	.0581	.0056	.0011	.1977	-.0005
#3	.0318	.0171	.2720	.0176	.0661	.0050	-.0015	.1900	.0006
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9083-A-13-B Acquired: 11/18/2014 21:25:20 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0095	.0207	.0263	.0056	.2661	.0211	.0254
Stddev	.0000	.0002	.0002	.0034	.0258	.0022	.0006
%RSD	.2795	.9706	.6152	59.97	9.706	10.53	2.508
#1	.0095	.0205	.0261	.0058	.2956	.0185	.0247
#2	.0095	.0209	.0263	.0089	.2476	.0223	.0257
#3	.0095	.0207	.0264	.0022	.2551	.0224	.0258
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4143.5
Stddev	47.5
%RSD	1.1459
#1	4175.8
#2	4165.8
#3	4089.0

Sample Name: LB 160-156058/1-B Acquired: 11/18/2014 21:29:14 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0154	<.0000	.0768	.0015	<.0000	.0048	.6765	.0003
Stddev	.0007	.0126	.0025	.0018	.0002	.0000	.0074	.0069	.0003
%RSD	791.1	82.11	263.5	2.384	12.08	496.6	153.5	1.025	82.97
#1	-.0007	.0248	-.0022	.0751	.0015	.0000	.0094	.6740	.0006
#2	.0005	.0202	-.0027	.0787	.0017	.0000	-.0037	.6711	.0001
#3	.0005	.0010	.0019	.0766	.0013	.0000	.0088	.6843	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0001	.0001	.0105	.1814	.0014	.1862	.0013	.0002
Stddev	.0006	.0008	.0018	.0027	.0266	.0010	.0042	.0007	.0005
%RSD	497.9	1540.	2114.	25.58	14.67	66.89	2.251	53.74	234.9
#1	-.0004	.0010	.0011	.0115	.1687	.0004	.1906	.0014	.0001
#2	.0008	-.0004	.0012	.0126	.1635	.0018	.1855	.0020	.0008
#3	-.0001	-.0004	-.0020	.0075	.2119	.0022	.1823	.0006	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	477.6	.0005	.0042	<.0000	.2897	.0022	<.0000	.1755	.0004
Stddev	8.1	.0002	.0013	.0002	.0050	.0048	.0021	.0147	.0006
%RSD	1.696	34.98	30.52	6.889	1.736	222.2	989.1	8.352	153.1
#1	477.7	.0007	.0056	-.0034	.2949	-.0015	.0002	.1719	.0001
#2	485.6	.0005	.0040	-.0030	.2849	.0004	-.0025	.1630	.0010
#3	469.4	.0003	.0030	-.0031	.2892	.0076	.0016	.1916	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LB 160-156058/1-B Acquired: 11/18/2014 21:29:14 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0015	.0121	<.0000	.0005	.2010	<.0000	.0083
Stddev	.0001	.0073	.0007	.0005	.0208	.0030	.0001
%RSD	3.351	59.93	358.9	93.21	10.34	177.9	1.198
#1	.0015	.0181	.0005	.0008	.2141	.0018	.0082
#2	.0016	.0142	-.0003	.0008	.2119	-.0034	.0084
#3	.0015	.0040	-.0009	.0000	.1770	-.0035	.0082
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3996.8
Stddev	58.8
%RSD	1.4699
#1	4061.0
#2	3983.6
#3	3945.8

Sample Name: LCS 160-156548/2-A Acquired: 11/18/2014 21:33:18 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	18.20	1.957	3.802	1.952	1.979	<.0000	19.70	1.904
Stddev	.0011	.11	.025	.021	.011	.013	.0007	.25	.025
%RSD	28.47	.5823	1.250	.5546	.5537	.6400	5.809	1.280	1.303
#1	-.0039	18.30	1.983	3.825	1.964	1.993	-.0122	19.97	1.930
#2	-.0027	18.09	1.951	3.783	1.945	1.969	-.0134	19.68	1.901
#3	-.0049	18.20	1.936	3.798	1.946	1.974	-.0120	19.46	1.881
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.965	1.959	1.910	19.77	19.52	1.876	17.87	1.838	<.0000
Stddev	.025	.029	.024	.12	.11	.012	.09	.008	.0003
%RSD	1.283	1.485	1.263	.5929	.5500	.6219	.5007	.4576	33.23
#1	1.991	1.991	1.933	19.91	19.64	1.887	17.96	1.848	-.0011
#2	1.965	1.951	1.912	19.70	19.48	1.864	17.79	1.831	-.0006
#3	1.940	1.935	1.885	19.70	19.43	1.879	17.87	1.836	-.0006
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	517.8	1.922	2.006	1.907	.3003	.0023	.9984	.1922	.0011
Stddev	13.6	.026	.033	.024	.0025	.0007	.0181	.0067	.0007
%RSD	2.622	1.358	1.628	1.264	.8428	29.76	1.810	3.487	64.67
#1	533.3	1.949	2.040	1.932	.2996	.0022	1.019	.1875	.0020
#2	508.2	1.920	2.003	1.906	.3031	.0017	.9877	.1999	.0005
#3	511.8	1.896	1.975	1.884	.2981	.0031	.9883	.1892	.0009
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LCS 160-156548/2-A Acquired: 11/18/2014 21:33:18 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.943	1.878	.0027	.3687	2.038	1.831	1.970
Stddev	.012	.029	.0009	.0052	.028	.013	.028
%RSD	.6166	1.524	35.44	1.403	1.376	.7219	1.422
#1	1.957	1.900	.0036	.3743	2.070	1.846	1.998
#2	1.934	1.888	.0017	.3675	2.025	1.821	1.968
#3	1.938	1.846	.0027	.3642	2.019	1.826	1.942
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3930.7
Stddev	13.2
%RSD	.33603
#1	3920.7
#2	3925.7
#3	3945.7

Sample Name: 160-9227-A-1-B Acquired: 11/18/2014 21:37:03 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0953	.0036	.1209	.1365	.0002	.0002	258.5	.0004
Stddev	.0015	.0189	.0009	.0039	.0008	.0000	.0045	3.1	.0001
%RSD	1505.	19.82	26.03	3.266	.6000	14.75	2403.	1.192	28.36
#1	-.0008	.1059	.0047	.1207	.1357	.0002	.0052	260.4	.0006
#2	.0016	.1065	.0031	.1171	.1365	.0002	-.0013	260.2	.0004
#3	-.0011	.0735	.0031	.1250	.1374	.0002	-.0033	255.0	.0004
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	.0069	.0189	.2343	1.312	.0043	14.32	.0943	.0030
Stddev	.0003	.0008	.0036	.0034	.014	.0006	.02	.0005	.0003
%RSD	128.6	11.86	18.78	1.446	1.087	14.69	.1543	.5540	11.45
#1	.0001	.0062	.0228	.2330	1.298	.0037	14.34	.0948	.0029
#2	.0000	.0068	.0180	.2318	1.326	.0042	14.32	.0943	.0026
#3	.0006	.0078	.0159	.2382	1.311	.0049	14.30	.0938	.0033
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	485.6	.0045	6.885	.0009	2.784	.0086	<.0000	2.078	<.0000
Stddev	13.4	.0003	.103	.0004	.054	.0010	.0027	.017	.0003
%RSD	2.755	7.182	1.493	45.81	1.952	12.07	209.2	.8067	28.97
#1	498.4	.0048	6.946	.0006	2.818	.0098	-.0040	2.065	-.0009
#2	486.7	.0042	6.943	.0014	2.813	.0078	.0014	2.071	-.0010
#3	471.7	.0044	6.767	.0008	2.721	.0082	-.0013	2.097	-.0015
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9227-A-1-B Acquired: 11/18/2014 21:37:03 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5388	.0155	.0053	<.0000	.1992	.0012	.1134
Stddev	.0030	.0061	.0006	.0021	.0189	.0028	.0021
%RSD	.5531	39.29	11.80	151.2	9.481	241.5	1.827
#1	.5363	.0116	.0050	-.0011	.2211	.0019	.1147
#2	.5380	.0225	.0060	.0005	.1886	-.0019	.1145
#3	.5421	.0123	.0048	-.0036	.1881	.0036	.1110
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3950.1
Stddev	22.8
%RSD	.57724
#1	3936.3
#2	3937.6
#3	3976.4

Sample Name: 160-9227-A-1-B SD Acquired: 11/18/2014 21:41:03 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=5

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0194	<.0000	.0291	.0274	.0000	<.0000	57.89	.0001
Stddev	.0005	.0061	.0015	.0015	.0001	.0000	.0023	.41	.0001
%RSD	250.9	31.22	37.13	5.283	.3965	120.4	206.4	.7144	180.0
#1	-.0004	.0259	-.0052	.0282	.0274	.0000	-.0025	57.65	.0002
#2	.0004	.0182	-.0044	.0283	.0274	.0000	-.0024	57.65	.0000
#3	-.0006	.0140	-.0023	.0309	.0276	.0001	.0015	58.36	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0013	.0053	.0490	.2906	.0022	2.907	.0191	.0003
Stddev	.0003	.0004	.0011	.0031	.0093	.0004	.030	.0002	.0002
%RSD	172.5	29.41	21.69	6.252	3.189	17.86	1.043	.8272	82.48
#1	-.0005	.0017	.0040	.0460	.2964	.0021	2.925	.0189	.0005
#2	.0001	.0009	.0063	.0522	.2799	.0019	2.872	.0192	.0000
#3	-.0001	.0014	.0054	.0489	.2955	.0026	2.924	.0191	.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	97.56	.0011	1.370	<.0000	.5232	.0018	<.0000	.4062	<.0000
Stddev	.43	.0001	.006	.0026	.0022	.0030	.0009	.0099	.0001
%RSD	.4398	11.20	.4277	93.89	.4292	169.4	38.86	2.445	21.60
#1	97.67	.0011	1.369	-.0056	.5226	.0006	-.0031	.4135	-.0006
#2	97.08	.0010	1.365	-.0024	.5213	-.0005	-.0023	.3949	-.0004
#3	97.92	.0012	1.377	-.0004	.5257	.0052	-.0014	.4102	-.0005
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9227-A-1-B SD Acquired: 11/18/2014 21:41:03 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=5

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1073	.0124	.0019	<.0000	.2449	.0009	.0297
Stddev	.0006	.0041	.0006	.0012	.0191	.0007	.0003
%RSD	.5702	33.35	29.52	270.0	7.815	75.06	1.175
#1	.1070	.0138	.0013	-.0009	.2339	.0010	.0299
#2	.1069	.0156	.0019	-.0013	.2338	.0015	.0293
#3	.1080	.0077	.0024	.0009	.2670	.0002	.0300
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4042.7
Stddev	40.3
%RSD	.99775
#1	4053.8
#2	4076.2
#3	3997.9

Sample Name: 160-9227-A-1-C MS Acquired: 11/18/2014 21:44:58 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1830	9.564	1.020	1.991	1.130	1.001	.9969	286.7	.9888
Stddev	.0024	.059	.003	.021	.004	.005	.0012	.8	.0036
%RSD	1.334	.6222	.2662	1.030	.3425	.5534	.1172	.2677	.3684
#1	.1802	9.531	1.020	1.979	1.128	.9985	.9956	285.9	.9846
#2	.1837	9.530	1.018	1.980	1.127	.9978	.9979	286.9	.9903
#3	.1849	9.633	1.023	2.015	1.134	1.008	.9972	287.4	.9914
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9800	.9898	1.015	10.01	11.41	.9837	24.37	1.024	.5164
Stddev	.0034	.0088	.004	.07	.07	.0022	.22	.007	.0011
%RSD	.3446	.8873	.4113	.7474	.5758	.2250	.9016	.6792	.2107
#1	.9761	.9836	1.011	9.956	11.36	.9841	24.25	1.019	.5155
#2	.9820	.9861	1.019	9.986	11.39	.9814	24.23	1.022	.5160
#3	.9820	.9999	1.013	10.10	11.49	.9857	24.62	1.032	.5176
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	532.6	.9792	8.508	.9618	13.51	.5082	.5324	2.339	.9716
Stddev	7.2	.0020	.022	.0037	.05	.0073	.0001	.015	.0004
%RSD	1.356	.2085	.2596	.3814	.3989	1.446	.0117	.6540	.0447
#1	532.3	.9768	8.482	.9599	13.53	.5027	.5324	2.333	.9711
#2	539.9	.9800	8.519	.9660	13.56	.5166	.5325	2.327	.9718
#3	525.5	.9806	8.522	.9593	13.45	.5055	.5324	2.356	.9719
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9227-A-1-C MS Acquired: 11/18/2014 21:44:58 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.551	.9401	.9980	.1835	1.216	.9330	1.183
Stddev	.007	.0160	.0066	.0016	.028	.0105	.004
%RSD	.4530	1.698	.6654	.8896	2.272	1.122	.2949
#1	1.547	.9273	.9914	.1854	1.209	.9298	1.179
#2	1.546	.9350	.9978	.1826	1.193	.9245	1.185
#3	1.559	.9580	1.005	.1825	1.247	.9447	1.186
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3894.4
Stddev	22.4
%RSD	.57429
#1	3916.6
#2	3894.8
#3	3871.8

Sample Name: 160-9227-A-1-D MSD Acquired: 11/18/2014 21:48:41 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1754**	**8.918**	**.9161**	**1.903**	**1.055**	**.9368**	**.9054**	**251.7**	**.8973**
Stddev	.0015	.011	.0177	.007	.002	.0014	.0203	3.7	.0166
%RSD	.8318	.1275	1.927	.3864	.1982	.1453	2.238	1.471	1.847
#1	.1756	8.926	.9319	1.907	1.054	.9370	.9242	255.2	.9125
#2	.1767	8.905	.9192	1.907	1.057	.9380	.9080	252.0	.8999
#3	.1738	8.922	.8970	1.894	1.054	.9353	.8839	247.9	.8796
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.8746**	**.9076**	**.9085**	**9.370**	**10.78**	**.9259**	**22.32**	**.9604**	**.4615**
Stddev	.0157	.0047	.0185	.010	.04	.0021	.06	.0008	.0088
%RSD	1.793	.5135	2.041	.1114	.3599	.2243	.2787	.0799	1.904
#1	.8896	.9104	.9267	9.358	10.74	.9245	22.29	.9601	.4700
#2	.8758	.9102	.9092	9.377	10.80	.9283	22.39	.9612	.4621
#3	.8583	.9022	.8896	9.375	10.80	.9249	22.28	.9598	.4525
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**490.4**	**.8752**	**7.416**	**.8768**	**12.12**	**.4536**	**.4718**	**2.167**	**.8707**
Stddev	.7	.0155	.144	.0145	.25	.0088	.0111	.007	.0183
%RSD	.1461	1.771	1.946	1.653	2.049	1.940	2.358	.3449	2.104
#1	491.1	.8891	7.553	.8909	12.35	.4621	.4816	2.175	.8876
#2	489.7	.8779	7.430	.8777	12.14	.4541	.4740	2.163	.8733
#3	490.5	.8585	7.266	.8619	11.86	.4445	.4597	2.161	.8512
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9227-A-1-D MSD Acquired: 11/18/2014 21:48:41 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.437	.8529	.9295	.1702	1.070	.8691	1.059
Stddev	.001	.0085	.0012	.0036	.035	.0005	.020
%RSD	.0984	1.000	.1325	2.119	3.270	.0539	1.886
#1	1.437	.8542	.9300	.1730	1.107	.8697	1.079
#2	1.439	.8606	.9304	.1714	1.037	.8688	1.058
#3	1.436	.8437	.9281	.1661	1.067	.8689	1.039
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3845.7
Stddev	16.7
%RSD	.43405
#1	3834.8
#2	3837.4
#3	3864.9

Sample Name: CCV Acquired: 11/18/2014 21:52:27 Type: QC
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.9062**	**45.65**	**4.869**	**4.600**	**4.849**	**4.870**	**4.928**	**46.73**	**4.838**
Stddev	.0092	.23	.021	.030	.024	.069	.030	.37	.027
%RSD	1.010	.4986	.4300	.6581	.5032	1.409	.6025	.7926	.5562
#1	.8998	45.66	4.851	4.573	4.857	4.910	4.895	46.33	4.809
#2	.9021	45.87	4.864	4.633	4.869	4.909	4.936	46.79	4.841
#3	.9166	45.41	4.892	4.596	4.822	4.791	4.953	47.07	4.863
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.859**	**4.983**	**4.877**	**49.05**	**49.12**	**4.633**	**45.44**	**4.623**	**1.013**
Stddev	.026	.052	.023	.17	.16	.026	.18	.017	.007
%RSD	.5262	1.053	.4690	.3466	.3324	.5542	.3933	.3593	.6478
#1	4.831	4.949	4.850	49.03	49.11	4.640	45.26	4.618	1.005
#2	4.865	4.956	4.890	49.23	49.29	4.654	45.62	4.642	1.015
#3	4.881	5.043	4.890	48.90	48.96	4.605	45.44	4.610	1.018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**45.89**	**4.912**	**48.34**	**4.974**	**49.67**	**.9648**	**.9897**	**4.520**	**4.968**
Stddev	.28	.032	.33	.035	.27	.0046	.0034	.004	.033
%RSD	.5998	.6593	.6804	.6965	.5443	.4793	.3387	.0940	.6679
#1	45.92	4.878	47.99	4.937	49.41	.9595	.9860	4.518	4.930
#2	46.15	4.916	48.36	4.979	49.67	.9674	.9903	4.517	4.983
#3	45.60	4.943	48.65	5.006	49.95	.9676	.9927	4.525	4.991
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: CCV Acquired: 11/18/2014 21:52:27 Type: QC
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.780**	**4.568**	**4.822**	**.9707**	**4.970**	**4.537**	**4.935**
Stddev	.080	.094	.021	.0076	.056	.014	.027
%RSD	1.670	2.066	.4433	.7783	1.118	.3099	.5561
#1	4.787	4.496	4.814	.9638	4.912	4.527	4.905
#2	4.856	4.534	4.847	.9696	4.975	4.553	4.940
#3	4.697	4.675	4.806	.9787	5.023	4.532	4.960
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**3811.2**
Stddev	19.7
%RSD	.51606
#1	3833.6
#2	3803.4
#3	3796.7

Sample Name: CCB Acquired: 11/18/2014 21:56:11 Type: QC
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0105	<.0000	.0163	.0009	.0007	.0065
Stddev	.0009	.0056	.0034	.0026	.0001	.0001	.0047
%RSD	91.66	53.11	171.9	15.74	16.28	9.966	72.65
#1	-.0003	.0139	.0002	.0186	.0008	.0007	.0092
#2	-.0019	.0136	-.0002	.0135	.0010	.0007	.0011
#3	-.0006	.0041	-.0060	.0167	.0008	.0008	.0093
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Ca1840	Cd2288	Co2286	Cr2835	Cu2178	Fe2599	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0055	.0001	.0000	<.0000	.0023	.0088	.0369
Stddev	.0017	.0001	.0004	.0019	.0011	.0025	.0480
%RSD	31.97	80.08	1112.	154.1	50.20	28.05	130.0
#1	.0074	.0000	-.0003	-.0021	.0024	.0060	.0026
#2	.0051	.0001	-.0001	.0009	.0033	.0101	.0164
#3	.0040	.0002	.0005	-.0024	.0010	.0104	.0917
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Li6707	Mg2798	Mn2576	Mo2020	Na5895	Ni2216	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0019	.0070	.0009	<.0000	.0277	.0003	.0040
Stddev	.0012	.0027	.0003	.0006	.0061	.0006	.0018
%RSD	59.23	38.56	30.87	247.4	21.96	249.6	44.65
#1	.0023	.0076	.0006	-.0005	.0207	.0001	.0020
#2	.0029	.0040	.0010	.0004	.0318	-.0003	.0046
#3	.0007	.0092	.0010	-.0006	.0306	.0010	.0055
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: CCB Acquired: 11/18/2014 21:56:11 Type: QC
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W<.0000	.0012	.0009	<.0000	.0012	.0011	.0007
Stddev	.0009	.0027	.0010	.0034	.0039	.0002	.0001
%RSD	36.00	234.7	117.4	100.6	324.6	14.39	18.53
#1	-.0036	.0037	.0004	-.0009	.0022	.0010	.0005
#2	-.0022	-.0017	.0001	-.0073	-.0031	.0013	.0007
#3	-.0019	.0016	.0020	-.0020	.0045	.0010	.0008
Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	.0025						
Low Limit	-.0025						

Elem	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0151	.0010	.0027	W .2647	<.0000	.0005
Stddev	.0052	.0008	.0011	.0097	.0076	.0002
%RSD	34.24	76.08	39.06	3.667	509.0	38.81
#1	.0121	.0012	.0039	.2590	-.0091	.0007
#2	.0210	.0017	.0025	.2759	-.0015	.0005
#3	.0121	.0002	.0018	.2593	.0061	.0003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass
High Limit				.0480		
Low Limit				-.0470		

Int. Std.	Y_3710
Units	Cts/S
Avg	3781.9
Stddev	28.2
%RSD	.74587
#1	3749.8
#2	3793.2
#3	3802.7

Sample Name: 160-9227-A-2-B Acquired: 11/18/2014 22:00:06 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0534	.0036	.1010	.0737	.0000	<.0000	211.8	.0002
Stddev	.0008	.0076	.0011	.0038	.0004	.0000	.0011	2.7	.0001
%RSD	74.40	14.14	30.20	3.756	.5388	34.61	145.0	1.258	50.06
#1	-.0011	.0546	.0039	.1015	.0735	.0001	.0001	214.7	.0003
#2	-.0019	.0603	.0044	.0970	.0741	.0001	-.0004	211.0	.0001
#3	-.0003	.0454	.0024	.1046	.0733	.0000	-.0020	209.6	.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	.0004	.0040	.3895	1.154	.0043	18.72	.0605	.0091
Stddev	.0005	.0010	.0019	.0018	.050	.0007	.18	.0002	.0004
%RSD	194.0	256.4	47.51	.4579	4.352	17.15	.9599	.3149	4.261
#1	.0005	.0013	.0021	.3906	1.203	.0051	18.72	.0603	.0096
#2	-.0003	-.0006	.0041	.3905	1.157	.0043	18.90	.0604	.0090
#3	.0006	.0004	.0059	.3875	1.102	.0036	18.54	.0607	.0088
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	444.7	.0045	9.627	<.0000	3.751	.0075	<.0000	2.111	<.0000
Stddev	2.9	.0001	.163	.0017	.077	.0035	.0016	.018	.0010
%RSD	.6540	1.506	1.694	3230.	2.046	46.22	34.82	.8608	79.52
#1	441.6	.0045	9.810	.0008	3.835	.0113	-.0033	2.115	-.0025
#2	445.4	.0044	9.576	-.0020	3.732	.0068	-.0042	2.126	-.0008
#3	447.3	.0045	9.496	.0011	3.685	.0045	-.0064	2.091	-.0006
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9227-A-2-B Acquired: 11/18/2014 22:00:06 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4864	.0144	.0039	.0009	.2448	.0005	.0464
Stddev	.0029	.0033	.0004	.0018	.0426	.0040	.0008
%RSD	.5944	22.94	9.629	203.7	17.41	768.0	1.749
#1	.4862	.0128	.0039	-.0012	.2844	.0010	.0472
#2	.4893	.0122	.0035	.0019	.2504	-.0037	.0465
#3	.4835	.0182	.0042	.0020	.1997	.0042	.0455
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3983.0
Stddev	18.4
%RSD	.46126
#1	4003.6
#2	3968.3
#3	3977.0

Sample Name: 160-9227-A-3-B Acquired: 11/18/2014 22:04:07 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0861	.0020	.0787	.0814	<.0000	.0029	229.3	.0004
Stddev	.0003	.0116	.0032	.0034	.0002	.0000	.0057	3.5	.0002
%RSD	38.57	13.43	160.8	4.264	.3027	175.4	193.9	1.520	52.97
#1	-.0008	.0728	-.0016	.0776	.0816	.0000	-.0036	228.1	.0007
#2	-.0005	.0918	.0045	.0825	.0815	.0000	.0071	226.6	.0004
#3	-.0011	.0937	.0030	.0761	.0811	.0000	.0053	233.3	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005	.0003	.0028	.0880	1.330	.0042	17.37	.0630	.0299
Stddev	.0004	.0008	.0024	.0021	.019	.0013	.06	.0005	.0006
%RSD	90.07	323.0	87.17	2.439	1.396	30.36	.3300	.8360	1.900
#1	.0000	-.0004	.0046	.0864	1.318	.0057	17.36	.0624	.0301
#2	.0009	.0012	.0000	.0872	1.321	.0033	17.32	.0633	.0292
#3	.0005	.0000	.0037	.0905	1.352	.0037	17.43	.0633	.0303
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	472.5	.0040	9.199	<.0000	4.101	.0100	<.0000	2.193	<.0000
Stddev	2.2	.0001	.164	.0020	.073	.0013	.0042	.020	.0001
%RSD	.4716	1.630	1.785	205.8	1.771	12.64	79.59	.8942	11.45
#1	474.9	.0039	9.126	.0006	4.073	.0089	-.0094	2.196	-.0009
#2	471.9	.0041	9.084	-.0032	4.047	.0114	-.0010	2.212	-.0007
#3	470.6	.0040	9.387	-.0003	4.183	.0097	-.0055	2.173	-.0008
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9227-A-3-B Acquired: 11/18/2014 22:04:07 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4780	.0098	.0044	<.0000	.2416	.0027	.0718
Stddev	.0021	.0065	.0007	.0021	.0107	.0039	.0010
%RSD	.4329	65.75	16.47	123.7	4.411	146.8	1.389
#1	.4781	.0025	.0040	-.0034	.2443	.0031	.0719
#2	.4801	.0122	.0053	.0006	.2507	-.0015	.0708
#3	.4759	.0147	.0040	-.0022	.2298	.0064	.0728
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4134.5
Stddev	36.7
%RSD	.88732
#1	4140.6
#2	4167.8
#3	4095.2

Sample Name: 160-9227-A-4-B Acquired: 11/18/2014 22:08:06 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0004**	**.0687**	**.0004**	**.1272**	**.1947**	**.0000**	**.0030**	**256.3**	**.0003**
Stddev	.0008	.0057	.0025	.0014	.0004	.0000	.0014	.4	.0001
%RSD	184.4	8.226	678.2	1.070	.1849	39.84	46.24	.1420	26.82
#1	.0003	.0644	-.0025	.1262	.1946	.0000	.0037	256.1	.0004
#2	-.0003	.0667	.0022	.1266	.1951	.0000	.0039	256.0	.0003
#3	.0012	.0751	.0015	.1287	.1944	.0000	.0014	256.7	.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0006**	**.0048**	**.0403**	**.0627**	**1.476**	**.0051**	**15.55**	**.0219**	**.0018**
Stddev	.0004	.0015	.0004	.0015	.041	.0002	.13	.0002	.0002
%RSD	65.01	32.43	.9527	2.448	2.768	4.662	.8515	.8686	9.044
#1	.0008	.0032	.0405	.0615	1.431	.0054	15.56	.0217	.0019
#2	.0001	.0063	.0405	.0623	1.511	.0049	15.67	.0221	.0016
#3	.0008	.0048	.0398	.0644	1.485	.0051	15.41	.0219	.0019
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**492.9**	**.0027**	**6.582**	**.0024**	**1.834**	**.0021**	**<.0000**	**2.183**	**<.0000**
Stddev	7.8	.0001	.022	.0019	.010	.0022	.0036	.002	.0010
%RSD	1.576	2.390	.3425	80.11	.5284	101.9	112.4	.1099	70.07
#1	500.0	.0026	6.566	.0044	1.831	.0020	-.0061	2.181	-.0016
#2	494.3	.0028	6.572	.0005	1.826	.0043	.0008	2.185	-.0003
#3	484.6	.0027	6.608	.0023	1.845	.0000	-.0043	2.181	-.0023
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9227-A-4-B Acquired: 11/18/2014 22:08:06 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6732	.0129	.0043	<.0000	.2197	<.0000	.1352
Stddev	.0026	.0117	.0011	.0012	.0355	.0016	.0007
%RSD	.3827	90.94	26.87	99.49	16.14	158.5	.5452
#1	.6731	.0087	.0034	-.0003	.1799	-.0021	.1346
#2	.6758	.0039	.0056	-.0008	.2315	-.0018	.1350
#3	.6706	.0262	.0039	-.0027	.2478	.0008	.1360
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3892.7
Stddev	11.9
%RSD	.30584
#1	3904.9
#2	3881.2
#3	3892.0

Sample Name: 160-9227-A-5-B Acquired: 11/18/2014 22:12:05 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.1870	.0062	.0977	.1030	.0000	<.0000	243.5	.0005
Stddev	.0006	.0053	.0018	.0034	.0002	.0000	.0055	1.6	.0001
%RSD	98.73	2.834	28.95	3.434	.1466	146.7	434.8	.6654	21.23
#1	-.0007	.1925	.0068	.0951	.1028	.0000	.0049	243.7	.0005
#2	-.0011	.1864	.0042	.1015	.1031	.0000	-.0057	241.8	.0003
#3	.0000	.1820	.0076	.0966	.1030	.0001	-.0031	245.0	.0005
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0006	.0063	.0274	.1888	1.401	.0039	21.20	.0748	.0110
Stddev	.0002	.0005	.0046	.0020	.021	.0002	.07	.0002	.0005
%RSD	30.88	8.410	16.79	1.035	1.524	6.301	.3390	.2831	4.923
#1	.0005	.0058	.0319	.1898	1.377	.0038	21.19	.0746	.0104
#2	.0008	.0063	.0227	.1901	1.415	.0038	21.13	.0750	.0113
#3	.0005	.0068	.0277	.1866	1.412	.0042	21.27	.0749	.0114
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	507.0	.0046	13.90	.0005	4.165	.0089	<.0000	2.317	<.0000
Stddev	10.3	.0002	.13	.0016	.037	.0042	.0031	.008	.0007
%RSD	2.031	4.322	.9096	293.5	.8891	46.87	117.8	.3584	98.95
#1	518.2	.0046	13.87	.0000	4.145	.0113	-.0060	2.326	-.0002
#2	498.1	.0044	13.79	.0024	4.141	.0114	.0001	2.309	-.0004
#3	504.6	.0048	14.04	-.0007	4.207	.0041	-.0020	2.317	-.0015
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9227-A-5-B Acquired: 11/18/2014 22:12:05 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5813	.0141	.0060	<.0000	.2178	.0027	.1480
Stddev	.0008	.0027	.0011	.0027	.0404	.0042	.0012
%RSD	.1441	19.31	18.05	175.8	18.57	158.6	.7893
#1	.5822	.0170	.0071	.0007	.2066	-.0014	.1479
#2	.5805	.0117	.0058	-.0045	.1842	.0071	.1469
#3	.5813	.0136	.0050	-.0008	.2627	.0023	.1492
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3896.7
Stddev	14.8
%RSD	.37905
#1	3882.0
#2	3911.5
#3	3896.5

Sample Name: MB 160-157445/1-A Acquired: 11/18/2014 22:16:03 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0078	<.0000	.0035	.0000	<.0000	<.0000	.0355	.0002
Stddev	.0004	.0023	.0015	.0021	.0002	.0000	.0024	.0029	.0002
%RSD	30.35	29.07	59.58	60.29	1653.	97.23	46.44	8.272	109.8
#1	-.0012	.0079	-.0008	.0037	.0002	-.0001	-.0044	.0388	.0003
#2	-.0015	.0100	-.0033	.0013	-.0001	-.0001	-.0077	.0343	.0000
#3	-.0008	.0055	-.0035	.0055	-.0001	.0000	-.0032	.0334	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	.0012	.0038	.0890	<.0000	.0055	<.0000	.0001
Stddev	.0001	.0008	.0013	.0017	.0208	.0010	.0055	.0004	.0004
%RSD	80.30	48.52	101.8	45.68	23.38	474.1	100.8	1737.	601.1
#1	-.0003	-.0007	.0017	.0057	.1046	-.0009	.0085	.0004	-.0004
#2	.0000	-.0021	.0022	.0032	.0654	.0009	.0088	-.0003	.0005
#3	-.0001	-.0021	-.0002	.0024	.0971	-.0006	-.0009	-.0002	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2457	.0004	.0025	<.0000	.0007	.0012	<.0000	.0072	.0010
Stddev	.0286	.0005	.0007	.0008	.0011	.0023	.0011	.0027	.0016
%RSD	11.62	110.4	27.56	70.10	150.4	198.8	33.20	37.20	157.1
#1	.2671	.0002	.0019	-.0009	.0011	-.0007	-.0021	.0100	-.0006
#2	.2567	.0009	.0023	-.0022	.0016	.0004	-.0042	.0048	.0025
#3	.2133	.0001	.0032	-.0006	-.0005	.0038	-.0036	.0067	.0011
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: MB 160-157445/1-A Acquired: 11/18/2014 22:16:03 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0006	.0117	.0004	.0015	.3479	<.0000	.0071
Stddev	.0001	.0043	.0007	.0013	.0370	.0013	.0002
%RSD	10.04	36.41	180.7	83.49	10.62	249.5	2.450
#1	.0006	.0131	.0001	.0014	.3606	.0006	.0072
#2	.0006	.0069	.0012	.0028	.3768	-.0003	.0071
#3	.0005	.0151	-.0001	.0003	.3062	-.0019	.0069
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4015.7
Stddev	33.4
%RSD	.83177
#1	3990.5
#2	4003.0
#3	4053.6

Sample Name: LCS 160-157445/2-A Acquired: 11/18/2014 22:19:59 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1776**	**8.859**	**.9140**	**1.730**	**.9524**	**.9339**	**.9615**	**9.829**	**.9218**
Stddev	.0028	.019	.0054	.014	.0007	.0018	.0049	.055	.0073
%RSD	1.572	.2176	.5916	.7880	.0697	.1878	.5071	.5567	.7914
#1	.1773	8.843	.9078	1.718	.9520	.9319	.9565	9.768	.9134
#2	.1806	8.880	.9174	1.727	.9531	.9344	.9617	9.844	.9257
#3	.1750	8.854	.9168	1.745	.9520	.9353	.9662	9.874	.9263
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.9866**	**.9782**	**.9643**	**9.560**	**9.421**	**.9250**	**8.480**	**.8977**	**.5030**
Stddev	.0076	.0047	.0062	.037	.026	.0022	.055	.0017	.0043
%RSD	.7653	.4803	.6437	.3878	.2795	.2428	.6495	.1938	.8582
#1	.9779	.9783	.9578	9.525	9.444	.9258	8.423	.8958	.4980
#2	.9907	.9829	.9650	9.557	9.392	.9268	8.485	.8981	.5053
#3	.9913	.9735	.9702	9.599	9.426	.9225	8.533	.8992	.5057
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**8.935**	**.9714**	**.9361**	**.9780**	**9.410**	**.4773**	**.4769**	**.0251**	**.9738**
Stddev	.014	.0070	.0054	.0067	.076	.0042	.0020	.0076	.0058
%RSD	.1558	.7225	.5815	.6806	.8030	.8742	.4181	30.42	.5936
#1	8.935	.9634	.9299	.9710	9.324	.4725	.4750	.0292	.9672
#2	8.921	.9764	.9390	.9842	9.442	.4793	.4789	.0163	.9781
#3	8.949	.9745	.9396	.9790	9.464	.4800	.4769	.0298	.9761
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LCS 160-157445/2-A Acquired: 11/18/2014 22:19:59 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9488	.9058	.9469	.2003	1.236	.8687	1.065
Stddev	.0015	.0102	.0052	.0034	.034	.0025	.008
%RSD	.1555	1.130	.5441	1.698	2.739	.2893	.7714
#1	.9475	.9139	.9437	.1976	1.269	.8658	1.056
#2	.9504	.9092	.9441	.2041	1.201	.8702	1.069
#3	.9486	.8943	.9528	.1991	1.239	.8702	1.071
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3997.5
Stddev	14.2
%RSD	.35639
#1	4013.2
#2	3993.8
#3	3985.4

Sample Name: 240-43772-M-1-B Acquired: 11/18/2014 22:23:36 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=200

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	<.0000	.1741	1.607	.0000	<.0000	77.93	<.0000
Stddev	.0004	.0095	.0012	.0030	.003	.0000	.0009	.39	.0001
%RSD	41.67	839.9	31.46	1.722	.1660	1582.	60.48	.4995	1845.
#1	-.0005	.0097	-.0030	.1774	1.606	.0000	-.0021	77.75	.0001
#2	-.0012	-.0081	-.0051	.1731	1.610	.0000	-.0005	78.37	-.0001
#3	-.0012	-.0049	-.0031	.1716	1.606	.0000	-.0020	77.65	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	<.0000	<.0000	.4836	2.917	.2434	7.316	.0778	.0003
Stddev	.0002	.0012	.0022	.0043	.017	.0014	.055	.0003	.0003
%RSD	85.44	228.5	159.7	.8964	.5922	.5743	.7456	.3606	102.7
#1	.0004	-.0019	-.0037	.4789	2.910	.2450	7.320	.0779	.0003
#2	.0004	.0002	-.0013	.4875	2.937	.2424	7.369	.0780	.0005
#3	.0000	.0001	.0008	.4844	2.905	.2427	7.260	.0774	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	159.2	.0000	<.0000	<.0000	.0101	.0020	<.0000	.0498	<.0000
Stddev	1.8	.0005	.0002	.0013	.0007	.0043	.0025	.0045	.0012
%RSD	1.140	2138.	6.186	32.96	7.105	218.4	86.20	9.003	70.01
#1	160.8	-.0002	-.0034	-.0024	.0104	.0058	-.0005	.0498	-.0007
#2	159.6	-.0003	-.0033	-.0048	.0106	.0027	-.0056	.0454	-.0030
#3	157.2	.0006	-.0030	-.0042	.0093	-.0026	-.0027	.0543	-.0014
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 240-43772-M-1-B Acquired: 11/18/2014 22:23:36 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=200

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.136	.0164	.0028	.0032	.2949	<.0000	.0070
Stddev	.096	.0070	.0005	.0006	.0308	.0031	.0001
%RSD	1.052	42.89	18.42	17.79	10.45	855.3	1.241
#1	9.149	.0106	.0024	.0035	.3293	.0020	.0069
#2	9.226	.0144	.0025	.0034	.2699	.0008	.0070
#3	9.034	.0242	.0034	.0025	.2856	-.0038	.0071
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3739.6
Stddev	29.9
%RSD	.80051
#1	3715.1
#2	3730.7
#3	3773.0

Sample Name: 240-43772-M-1-B SD Acquired: 11/18/2014 22:27:47 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=1000

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	<.0000	.0337	.3112	.0000	.0027	15.75	.0002
Stddev	.0010	.0103	.0005	.0031	.0002	.0000	.0041	.16	.0003
%RSD	65.58	607.5	12.86	9.196	.0701	106.9	148.9	1.019	193.5
#1	-.0025	.0091	-.0036	.0372	.3114	.0000	.0042	15.93	-.0002
#2	-.0016	-.0114	-.0043	.0328	.3113	.0000	-.0019	15.65	.0003
#3	-.0005	-.0028	-.0034	.0312	.3110	.0000	.0058	15.67	.0004
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0004	.0022	.0954	.5958	.0481	1.450	.0155	.0001
Stddev	.0005	.0023	.0048	.0023	.0321	.0012	.023	.0002	.0002
%RSD	105.7	632.4	215.1	2.449	5.391	2.419	1.580	1.321	192.1
#1	-.0009	.0006	.0071	.0963	.5688	.0477	1.476	.0157	.0003
#2	-.0005	-.0020	-.0025	.0927	.5873	.0494	1.442	.0153	.0002
#3	.0001	.0025	.0022	.0971	.6313	.0472	1.432	.0155	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	31.18	<.0000	<.0000	<.0000	<.0000	.0035	<.0000	.0104	.0002
Stddev	.03	.0002	.0023	.0016	.0035	.0017	.0040	.0071	.0015
%RSD	.0849	1351.	283.2	100.4	818.2	47.68	447.6	68.92	855.5
#1	31.18	.0001	-.0022	.0001	.0018	.0016	-.0031	.0102	-.0015
#2	31.20	-.0002	-.0021	-.0019	-.0045	.0046	.0038	.0033	.0008
#3	31.15	.0000	.0019	-.0031	.0014	.0043	-.0034	.0176	.0012
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 240-43772-M-1-B SD Acquired: 11/18/2014 22:27:47 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=1000

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.820	.0160	.0009	<.0000	.3019	<.0000	.0066
Stddev	.001	.0064	.0012	.0020	.0313	.0052	.0005
%RSD	.0297	40.10	131.5	439.9	10.35	391.8	7.633
#1	1.820	.0188	.0009	-.0027	.3241	.0025	.0072
#2	1.820	.0086	.0021	.0010	.3156	-.0072	.0064
#3	1.819	.0205	-.0003	.0004	.2662	.0007	.0064
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3773.3
Stddev	35.7
%RSD	.94591
#1	3734.1
#2	3782.0
#3	3803.8

Sample Name: 240-43772-M-1-C MS Acquired: 11/18/2014 22:31:42 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=200

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0445	.0009	.1729	1.530	.0039	.0028	72.08	<.0000
Stddev	.0011	.0078	.0006	.0015	.004	.0000	.0021	1.03	.0002
%RSD	112.7	17.60	70.83	.8393	.2602	1.037	76.66	1.423	1566.
#1	-.0005	.0512	.0003	.1717	1.534	.0039	.0040	72.58	.0002
#2	-.0002	.0359	.0008	.1745	1.526	.0038	.0003	72.76	.0000
#3	-.0023	.0463	.0015	.1724	1.529	.0039	.0040	70.90	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0039	.0017	.0041	.4934	2.788	.2371	6.996	.0660	.0023
Stddev	.0005	.0015	.0014	.0056	.009	.0015	.035	.0005	.0004
%RSD	11.64	86.51	33.84	1.132	.3356	.6523	.4931	.7109	16.90
#1	.0045	.0004	.0056	.4987	2.779	.2379	7.031	.0661	.0025
#2	.0037	.0033	.0029	.4876	2.788	.2354	6.963	.0664	.0025
#3	.0036	.0013	.0039	.4939	2.798	.2382	6.992	.0655	.0019
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	85.24	.0039	.0028	<.0000	.0560	.0022	<.0000	.0585	.0030
Stddev	.30	.0006	.0014	.0011	.0036	.0047	.0050	.0112	.0005
%RSD	.3569	15.16	49.85	36.43	6.441	217.6	323.3	19.09	15.54
#1	85.54	.0037	.0022	-.0022	.0571	.0009	-.0011	.0499	.0026
#2	84.93	.0046	.0043	-.0043	.0519	-.0018	.0032	.0712	.0031
#3	85.25	.0034	.0017	-.0026	.0588	.0074	-.0067	.0545	.0035
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 240-43772-M-1-C MS Acquired: 11/18/2014 22:31:42 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=200

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**8.766**	**.0170**	**.0061**	**.0012**	**.2243**	**.0053**	**.0088**
Stddev	.053	.0075	.0007	.0009	.0136	.0034	.0004
%RSD	.6029	44.15	11.59	72.47	6.051	64.55	4.507
#1	8.820	.0225	.0053	.0011	.2379	.0070	.0091
#2	8.715	.0200	.0064	.0021	.2107	.0013	.0090
#3	8.761	.0085	.0066	.0004	.2243	.0075	.0084
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**3791.6**
Stddev	56.2
%RSD	1.4812
#1	3744.1
#2	3777.2
#3	3853.6

Sample Name: 240-43772-M-1-D MSD Acquired: 11/18/2014 22:35:44 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=200

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0008**	**.0469**	**.0023**	**.1831**	**1.627**	**.0040**	**.0053**	**78.78**	**.0045**
Stddev	.0011	.0161	.0008	.0033	.002	.0001	.0023	.60	.0002
%RSD	135.4	34.38	34.54	1.780	.1310	1.426	43.66	.7594	3.742
#1	-.0002	.0637	.0017	.1815	1.626	.0040	.0059	79.46	.0045
#2	.0019	.0453	.0019	.1809	1.629	.0041	.0028	78.47	.0043
#3	.0006	.0316	.0032	.1868	1.625	.0040	.0073	78.39	.0046
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0046**	**.0050**	**.0024**	**.5239**	**2.967**	**.2491**	**7.404**	**.0822**	**.0021**
Stddev	.0004	.0020	.0022	.0026	.006	.0031	.031	.0008	.0001
%RSD	7.698	39.55	89.80	.4870	.2171	1.227	.4246	.9483	2.577
#1	.0046	.0065	.0043	.5261	2.972	.2500	7.380	.0821	.0022
#2	.0049	.0058	.0030	.5245	2.960	.2516	7.440	.0830	.0021
#3	.0042	.0028	.0000	.5211	2.969	.2457	7.393	.0815	.0022
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**159.2**	**.0046**	**.0029**	**.0019**	**.0569**	**.0033**	**<.0000**	**.0596**	**.0031**
Stddev	1.7	.0002	.0015	.0003	.0020	.0019	.0052	.0066	.0011
%RSD	1.046	4.381	53.68	18.24	3.529	57.14	1148.	11.09	34.27
#1	157.8	.0047	.0045	.0018	.0590	.0012	.0009	.0624	.0037
#2	158.8	.0044	.0015	.0022	.0550	.0049	-.0062	.0644	.0019
#3	161.1	.0048	.0026	.0016	.0568	.0038	.0039	.0521	.0038
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 240-43772-M-1-D MSD Acquired: 11/18/2014 22:35:44 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=200

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.263	.0200	.0063	.0014	.2915	.0042	.0086
Stddev	.080	.0026	.0005	.0016	.0148	.0016	.0003
%RSD	.8631	13.18	7.368	113.4	5.067	39.00	2.930
#1	9.355	.0189	.0064	.0008	.2966	.0025	.0087
#2	9.220	.0230	.0058	.0032	.2748	.0043	.0083
#3	9.214	.0181	.0067	.0002	.3030	.0058	.0088
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3893.0
Stddev	19.3
%RSD	.49540
#1	3871.9
#2	3897.2
#3	3909.8

Sample Name: CCV Acquired: 11/18/2014 22:39:55 Type: QC
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.9161**	**46.45**	**4.853**	**4.628**	**4.931**	**4.929**	**4.945**	**46.40**	**4.839**
Stddev	.0179	.26	.117	.014	.020	.101	.108	.96	.102
%RSD	1.954	.5615	2.414	.3087	.4090	2.057	2.181	2.071	2.101
#1	.8969	46.37	4.718	4.620	4.935	4.835	4.821	45.29	4.722
#2	.9189	46.75	4.907	4.645	4.949	5.036	4.999	46.92	4.888
#3	.9324	46.25	4.933	4.620	4.909	4.916	5.016	47.00	4.907
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.846**	**5.014**	**4.884**	**49.20**	**50.03**	**4.745**	**45.38**	**4.638**	**1.014**
Stddev	.099	.103	.102	.19	.21	.024	.38	.033	.023
%RSD	2.041	2.049	2.099	.3914	.4272	.5048	.8383	.7022	2.230
#1	4.733	4.898	4.767	49.06	49.95	4.746	45.05	4.616	.9885
#2	4.893	5.049	4.929	49.42	50.28	4.768	45.80	4.675	1.024
#3	4.913	5.094	4.956	49.13	49.87	4.720	45.30	4.622	1.030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**46.87**	**4.899**	**48.14**	**4.965**	**49.77**	**.9735**	**.9827**	**4.534**	**4.960**
Stddev	.26	.102	1.05	.109	1.04	.0267	.0194	.014	.107
%RSD	.5565	2.080	2.183	2.194	2.086	2.745	1.972	.3181	2.163
#1	46.85	4.782	46.93	4.840	48.58	.9431	.9618	4.531	4.837
#2	47.14	4.943	48.73	5.017	50.20	.9841	1.000	4.550	5.009
#3	46.61	4.971	48.77	5.038	50.52	.9932	.9862	4.522	5.035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: CCV Acquired: 11/18/2014 22:39:55 Type: QC
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.850**	**4.621**	**4.879**	**.9715**	**5.028**	**4.581**	**4.936**
Stddev	.045	.094	.014	.0273	.118	.030	.103
%RSD	.9195	2.030	.2850	2.806	2.342	.6594	2.081
#1	4.807	4.513	4.874	.9404	4.900	4.560	4.818
#2	4.896	4.669	4.895	.9827	5.054	4.616	4.979
#3	4.846	4.681	4.868	.9914	5.131	4.568	5.009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**3846.3**
Stddev	80.0
%RSD	2.0806
#1	3938.7
#2	3800.3
#3	3800.0

Sample Name: CCB Acquired: 11/18/2014 22:43:39 Type: QC
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0044	<.0000	.0153	.0001	.0001	.0028
Stddev	.0008	.0081	.0017	.0023	.0001	.0000	.0038
%RSD	353.6	186.8	42.23	14.88	47.98	31.84	133.3
#1	.0000	.0070	-.0021	.0178	.0002	.0002	.0028
#2	-.0012	-.0048	-.0053	.0148	.0002	.0002	.0066
#3	.0004	.0108	-.0044	.0133	.0001	.0001	-.0010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Ca1840	Cd2288	Co2286	Cr2835	Cu2178	Fe2599	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0012	.0002	<.0000	<.0000	.0023	.0016	.0542
Stddev	.0007	.0000	.0003	.0004	.0011	.0012	.0189
%RSD	56.99	20.92	74.98	28.47	47.55	74.84	34.83
#1	.0018	.0001	-.0002	-.0009	.0011	.0003	.0743
#2	.0004	.0002	-.0007	-.0017	.0031	.0019	.0515
#3	.0014	.0002	-.0003	-.0015	.0029	.0026	.0368
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Li6707	Mg2798	Mn2576	Mo2020	Na5895	Ni2216	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0017	<.0000	<.0000	<.0000	.0136	.0002	.0018
Stddev	.0004	.0086	.0005	.0002	.0060	.0001	.0010
%RSD	22.92	60.42	278.8	71.98	43.92	40.23	57.13
#1	.0020	-.0091	.0004	-.0006	.0197	.0001	.0026
#2	.0019	-.0095	-.0006	-.0001	.0134	.0001	.0006
#3	.0013	-.0243	-.0004	-.0003	.0078	.0003	.0021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: CCB Acquired: 11/18/2014 22:43:39 Type: QC
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W<.0000	<.0000	.0005	<.0000	<.0000	.0003	.0002
Stddev	.0024	.0045	.0010	.0019	.0030	.0004	.0000
%RSD	84.68	516.0	183.1	67.65	96.72	141.2	17.12
#1	-.0051	.0042	.0017	-.0038	-.0063	-.0001	.0002
#2	-.0003	-.0026	-.0002	-.0039	-.0028	.0006	.0002
#3	-.0032	-.0042	.0001	-.0006	-.0003	.0003	.0002
Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	.0025						
Low Limit	-.0025						

Elem	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0169	.0007	.0019	W .3168	<.0000	.0003
Stddev	.0074	.0012	.0008	.0540	.0022	.0002
%RSD	43.57	175.8	44.60	17.03	121.5	81.82
#1	.0117	.0015	.0019	.3030	-.0030	.0005
#2	.0253	-.0007	.0027	.2710	-.0031	.0001
#3	.0137	.0012	.0011	.3763	.0007	.0002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass
High Limit				.0480		
Low Limit				-.0470		

Int. Std.	Y_3710
Units	Cts/S
Avg	3963.0
Stddev	58.2
%RSD	1.4688
#1	3899.1
#2	3977.0
#3	4013.0

Sample Name: 160-8836-A-11-E Acquired: 11/18/2014 22:47:35 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=5

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0373	<.0000	.0051	.0007	<.0000	.0013	.2039	.0002
Stddev	.0014	.0073	.0027	.0021	.0002	.0000	.0038	.0030	.0000
%RSD	148.4	19.52	58.54	42.22	21.75	13.88	297.9	1.471	29.80
#1	-.0023	.0384	-.0020	.0044	.0009	.0000	.0053	.2072	.0002
#2	.0004	.0440	-.0074	.0034	.0007	.0000	.0008	.2031	.0002
#3	-.0009	.0296	-.0044	.0075	.0006	.0000	-.0023	.2013	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.8310	<.0000	.0490	.0507	.0007	.0393	.0046	.0000
Stddev	.0002	.0059	.0004	.0006	.0289	.0002	.0088	.0001	.0004
%RSD	120.4	.7112	63.68	1.225	56.98	34.16	22.28	2.385	1378.
#1	-.0004	.8378	-.0010	.0487	.0826	.0009	.0434	.0046	-.0005
#2	-.0002	.8274	-.0008	.0497	.0433	.0006	.0293	.0047	.0001
#3	.0001	.8278	-.0002	.0486	.0263	.0005	.0453	.0045	.0004
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.437	.0006	.0070	.0582	12.67	.0034	<.0000	.0251	.0067
Stddev	.038	.0000	.0009	.0011	.24	.0024	.0022	.0039	.0004
%RSD	.4004	4.245	13.01	1.866	1.901	69.52	106.6	15.38	6.697
#1	9.393	.0006	.0064	.0570	12.84	.0011	.0003	.0237	.0063
#2	9.454	.0006	.0080	.0591	12.78	.0033	-.0041	.0221	.0072
#3	9.462	.0007	.0065	.0584	12.40	.0059	-.0024	.0295	.0065
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-8836-A-11-E Acquired: 11/18/2014 22:47:35 Type: Unk
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=5

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0355	.0169	.0432	.0063	.3182	<.0000	.2136
Stddev	.0002	.0019	.0016	.0008	.0194	.0027	.0033
%RSD	.6098	10.96	3.644	13.02	6.092	445.3	1.552
#1	.0353	.0172	.0440	.0071	.3228	.0016	.2159
#2	.0356	.0186	.0442	.0062	.3348	-.0037	.2150
#3	.0356	.0149	.0414	.0055	.2969	.0002	.2098
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4432.3
Stddev	37.1
%RSD	.83761
#1	4392.6
#2	4438.2
#3	4466.2

Sample Name: CCV Acquired: 11/18/2014 22:51:26 Type: QC
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.9176**	**46.03**	**4.877**	**4.583**	**4.917**	**4.816**	**4.994**	**45.92**	**4.840**
Stddev	.0083	.46	.052	.031	.034	.124	.059	.36	.050
%RSD	.9036	.9886	1.058	.6861	.6964	2.570	1.182	.7945	1.041
#1	.9094	46.29	4.817	4.560	4.936	4.693	4.927	45.51	4.782
#2	.9260	46.30	4.909	4.618	4.938	4.941	5.035	46.22	4.875
#3	.9175	45.51	4.904	4.570	4.878	4.814	5.021	46.04	4.862
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.835**	**5.049**	**4.901**	**48.64**	**49.77**	**4.729**	F **44.17**	**4.560**	**1.021**
Stddev	.044	.063	.059	.22	.26	.051	.45	.047	.011
%RSD	.9021	1.250	1.193	.4498	.5192	1.075	1.022	1.028	1.046
#1	4.785	4.979	4.834	48.68	49.88	4.760	44.33	4.587	1.009
#2	4.867	5.102	4.943	48.83	49.96	4.756	44.52	4.587	1.027
#3	4.854	5.066	4.926	48.40	49.48	4.670	43.66	4.506	1.027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
Value							50.00		
Range							-10.00%		

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**46.50**	**4.886**	**48.01**	**4.952**	**50.32**	**.9714**	**.9919**	F **4.459**	**4.953**
Stddev	.37	.046	.42	.053	.56	.0072	.0091	.047	.045
%RSD	.7924	.9388	.8735	1.065	1.122	.7415	.9177	1.060	.9084
#1	46.64	4.833	47.55	4.891	49.67	.9631	.9835	4.485	4.901
#2	46.77	4.914	48.36	4.987	50.66	.9751	1.002	4.488	4.981
#3	46.08	4.911	48.13	4.977	50.64	.9760	.9906	4.405	4.978
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
Value								5.000	
Range								-10.00%	

Sample Name: CCV Acquired: 11/18/2014 22:51:26 Type: QC
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.818**	**4.660**	**4.850**	**.9689**	**5.158**	**4.512**	**4.936**
Stddev	.072	.024	.020	.0123	.070	.051	.051
%RSD	1.500	.5181	.4199	1.265	1.349	1.134	1.028
#1	4.793	4.633	4.847	.9548	5.097	4.533	4.878
#2	4.900	4.672	4.872	.9749	5.233	4.549	4.972
#3	4.762	4.677	4.831	.9769	5.143	4.453	4.958
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**4026.0**
Stddev	37.2
%RSD	.92285
#1	4067.7
#2	3996.5
#3	4013.7

Sample Name: CCB Acquired: 11/18/2014 22:55:10 Type: QC
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**<.0000**	**<.0000**	**.0145**	**.0001**	**.0001**	**<.0000**	**.0017**
Stddev	.0001	.0018	.0025	.0056	.0001	.0000	.0029	.0002
%RSD	60.57	107.9	98.33	38.73	182.4	35.82	962.4	13.85
#1	.0001	.0004	-.0034	.0173	.0001	.0001	.0020	.0017
#2	.0000	-.0026	.0003	.0182	.0002	.0001	.0006	.0018
#3	.0002	-.0028	-.0045	.0080	-.0001	.0001	-.0036	.0014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Cd2288	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0003**	**.0001**	**<.0000**	**.0014**	**.0020**	**.0487**	**<.0000**	**.0104**
Stddev	.0001	.0003	.0018	.0017	.0011	.0374	.0012	.0093
%RSD	26.82	196.2	201.8	123.3	53.40	76.88	2932.	88.97
#1	.0004	.0002	.0011	.0030	.0031	.0140	-.0005	.0210
#2	.0003	-.0002	-.0024	.0015	.0010	.0884	.0013	.0035
#3	.0002	.0004	-.0015	-.0004	.0020	.0437	-.0010	.0068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mn2576	Mo2020	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0003**	**<.0000**	**.0030**	**.0001**	**.0013**	**<.0000**	**<.0000**	**<.0000**
Stddev	.0003	.0003	.0058	.0003	.0007	.0006	.0033	.0038
%RSD	110.2	163.4	194.2	271.8	50.94	32.96	451.3	371.1
#1	.0007	.0001	.0084	-.0003	.0011	-.0014	-.0009	-.0003
#2	.0002	-.0002	-.0031	.0003	.0009	-.0017	-.0040	.0024
#3	.0000	-.0004	.0035	.0003	.0021	-.0026	.0027	-.0051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB Acquired: 11/18/2014 22:55:10 Type: QC
Method: 2014v3(v299) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2516	Sn1899	Sr4077	Th2832	Ti3349	Tl1908	U_3670
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	<.0000	.0002	.0001	.0139	<.0000	.0027	W .3006
Stddev	.0030	.0096	.0010	.0001	.0097	.0007	.0009	.0173
%RSD	1501.	86.95	530.6	79.73	69.65	511.2	34.03	5.749
#1	.0021	-.0009	-.0003	.0002	.0206	.0001	.0034	.3078
#2	-.0033	-.0122	-.0005	.0001	.0028	.0004	.0017	.2809
#3	.0018	-.0201	.0013	.0001	.0184	-.0010	.0031	.3131
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn
High Limit								.0480
Low Limit								-.0470

Elem	V_2908	Zn2138
Units	ppm	ppm
Avg	.0015	<.0000
Stddev	.0014	.0003
%RSD	94.92	186.6
#1	-.0001	.0001
#2	.0020	-.0001
#3	.0026	-.0004
Check ?	Chk Pass	Chk Pass
High Limit		
Low Limit		

Int. Std.	Y_3710
Units	Cts/S
Avg	3863.9
Stddev	18.3
%RSD	.47352
#1	3884.9
#2	3851.6
#3	3855.1

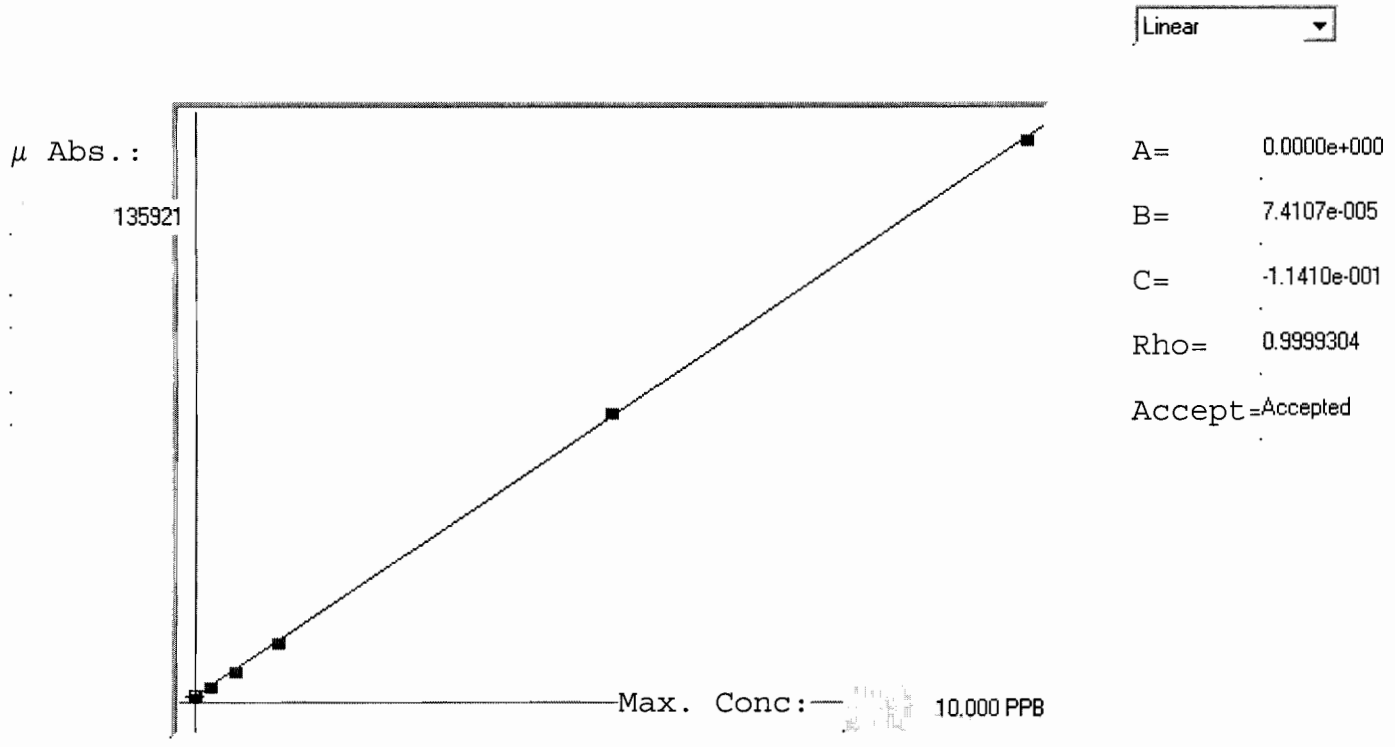
HAA110714E

Method: Hg LLC Operator: Admin Date of Analysis: 07 Nov 2014 14:49:55

Seq ID	Type	Sample ID	Extended ID	Date	Stats Data	Mean	Units	Stnd Conc	Method	Chapter
10018	Std	CALIBRATION BLANK		07 Nov 2014 14:50:06	1757, 1772, 1780,	1770	PPB	0.0000	Hg LLC	HAA110714E
10019	Std	CALIBRATION 1		07 Nov 2014 14:52:19	3883, 3906, 3924,	3904	PPB	0.2000	Hg LLC	HAA110714E
10020	Std	CALIBRATION 2		07 Nov 2014 14:54:33	7783, 7829, 7865,	7826	PPB	0.5000	Hg LLC	HAA110714E
10021	Std	CALIBRATION 3		07 Nov 2014 14:56:48	14930, 15012, 15071,	15004	PPB	1.0000	Hg LLC	HAA110714E
10022	Std	CALIBRATION 4		07 Nov 2014 14:59:06	69804, 70205, 70483,	70164	PPB	5.0000	Hg LLC	HAA110714E
10023	Std	CALIBRATION 5		07 Nov 2014 15:01:28	135240, 135983, 136541,	135921	PPB	10.0000	Hg LLC	HAA110714E
10024	CK STND	ICV		07 Nov 2014 15:04:09	5.1888, 5.2187, 5.2408,	5.2161	PPB		Hg LLC	HAA110714E
10025	CK STND	ICB		07 Nov 2014 15:07:01	-0.0152, -0.0141, -0.0134,	-0.0142	PPB		Hg LLC	HAA110714E
10026	SMPL	MB 160-154974/1-A		07 Nov 2014 15:09:40	0.0060, 0.0068, 0.0074,	0.0067	PPB		Hg LLC	HAA110714E
10027	SMPL	LCS 160-154974/2-A		07 Nov 2014 15:11:53	5.1306, 5.1636, 5.1882,	5.1608	PPB		Hg LLC	HAA110714E
10028	SMPL	LCSD 160-154974/3-A		07 Nov 2014 15:14:06	5.1197, 5.1407, 5.1571,	5.1392	PPB		Hg LLC	HAA110714E
10029	SMPL	160-8847-C-4-D		07 Nov 2014 15:16:52	0.0136, 0.0145, 0.0151,	0.0144	PPB		Hg LLC	HAA110714E
10030	SMPL	160-8847-C-5-D		07 Nov 2014 15:19:28	0.0756, 0.0779, 0.0794,	0.0776	PPB		Hg LLC	HAA110714E
10031	SMPL	160-8847-C-8-J		07 Nov 2014 15:21:41	0.0287, 0.0291, 0.0295,	0.0291	PPB		Hg LLC	HAA110714E
10032	SMPL	160-8847-C-8-J SD	5x	07 Nov 2014 15:23:53	-0.1128, -0.1128, -0.1131,	-0.1129	PPB		Hg LLC	HAA110714E
10033	SMPL	160-8847-C-8-K MS		07 Nov 2014 15:26:06	5.6718, 5.7047, 5.7286,	5.7017	PPB		Hg LLC	HAA110714E
10034	SMPL	160-8847-C-8-L MSD		07 Nov 2014 15:28:18	5.6618, 5.7042, 5.7336,	5.6999	PPB		Hg LLC	HAA110714E
10035	SMPL	160-8847-C-9-D		07 Nov 2014 15:30:48	0.0258, 0.0270, 0.0274,	0.0267	PPB		Hg LLC	HAA110714E
10036	CK STND	CCV		07 Nov 2014 15:33:23	5.1455, 5.1766, 5.1990,	5.1737	PPB		Hg LLC	HAA110714E
10037	CK STND	CCB		07 Nov 2014 15:35:36	-0.0564, -0.0559, -0.0556,	-0.0560	PPB		Hg LLC	HAA110714E
10038	SMPL	160-8847-C-12-J		07 Nov 2014 15:38:16	0.0595, 0.0606, 0.0607,	0.0602	PPB		Hg LLC	HAA110714E
10039	SMPL	160-8847-C-12-K MS		07 Nov 2014 15:40:31	5.5399, 5.5167, 5.4950,	5.5172	PPB		Hg LLC	HAA110714E
10040	SMPL	160-8847-C-12-L MSD		07 Nov 2014 15:42:44	5.6226, 5.6522, 5.6744,	5.6497	PPB		Hg LLC	HAA110714E
10041	SMPL	160-8847-C-13-D		07 Nov 2014 15:45:25	0.0134, 0.0157, 0.0179,	0.0157	PPB		Hg LLC	HAA110714E
10042	SMPL	160-8887-K-1-G		07 Nov 2014 15:48:06	0.0560, 0.0575, 0.0586,	0.0574	PPB		Hg LLC	HAA110714E
10043	SMPL	160-8887-F-2-C		07 Nov 2014 15:50:17	0.0240, 0.0251, 0.0257,	0.0249	PPB		Hg LLC	HAA110714E
10044	SMPL	160-8887-F-3-C		07 Nov 2014 15:52:30	0.0238, 0.0246, 0.0252,	0.0246	PPB		Hg LLC	HAA110714E
10045	SMPL	160-8887-F-5-C		07 Nov 2014 15:54:44	0.0298, 0.0309, 0.0317,	0.0308	PPB		Hg LLC	HAA110714E
10046	SMPL	160-8887-F-6-C		07 Nov 2014 15:56:58	0.0429, 0.0436, 0.0437,	0.0434	PPB		Hg LLC	HAA110714E
10047	SMPL	160-8887-H-7-C		07 Nov 2014 15:59:11	2.9421, 2.9631, 2.9781,	2.9611	PPB		Hg LLC	HAA110714E
10048	CK STND	CCV		07 Nov 2014 16:01:24	5.0409, 5.0711, 5.0932,	5.0684	PPB		Hg LLC	HAA110714E
10049	CK STND	CCB		07 Nov 2014 16:03:51	-0.0196, -0.0190, -0.0182,	-0.0189	PPB		Hg LLC	HAA110714E
10050	SMPL	160-8887-F-8-C		07 Nov 2014 16:06:32	2.3325, 2.3468, 2.3572,	2.3455	PPB		Hg LLC	HAA110714E
10051	SMPL	160-8922-D-1-G		07 Nov 2014 16:08:44	1.6207, 1.6306, 1.6373,	1.6296	PPB		Hg LLC	HAA110714E
10052	SMPL	160-9071-B-1-D		07 Nov 2014 16:11:10	0.0486, 0.0496, 0.0504,	0.0495	PPB		Hg LLC	HAA110714E
10053	SMPL	160-9093-H-1-A		07 Nov 2014 16:13:34	0.0448, 0.0458, 0.0465,	0.0457	PPB		Hg LLC	HAA110714E
10054	SMPL	160-9069-E-1-F		07 Nov 2014 16:15:48	0.0415, 0.0424, 0.0432,	0.0423	PPB		Hg LLC	HAA110714E
10055	SMPL	160-9069-E-1-G MS		07 Nov 2014 16:18:01	4.9675, 4.9958, 5.0167,	4.9933	PPB		Hg LLC	HAA110714E
10056	SMPL	160-9069-E-1-H MSD		07 Nov 2014 16:20:14	5.0771, 5.1087, 5.1318,	5.1059	PPB		Hg LLC	HAA110714E
10057	SMPL	160-9069-E-2-D		07 Nov 2014 16:22:52	0.0098, 0.0105, 0.0112,	0.0105	PPB		Hg LLC	HAA110714E
10058	SMPL	160-9069-F-3-D		07 Nov 2014 16:25:26	0.0406, 0.0415, 0.0420,	0.0414	PPB		Hg LLC	HAA110714E
10059	SMPL	LB 160-152600/1-B		07 Nov 2014 16:27:38	0.0039, 0.0045, 0.0051,	0.0045	PPB		Hg LLC	HAA110714E
10060	CK STND	CCV		07 Nov 2014 16:29:50	5.0153, 5.0492, 5.0742,	5.0462	PPB		Hg LLC	HAA110714E
10061	CK STND	CCB		07 Nov 2014 16:32:04	-0.0353, -0.0352, -0.0350,	-0.0352	PPB		Hg LLC	HAA110714E
10062	SMPL	LCS 160-154976/2-A		07 Nov 2014 16:34:49	5.2395, 5.2766, 5.3036,	5.2732	PPB		Hg LLC	HAA110714E
10063	SMPL	160-9071-C-1-C		07 Nov 2014 16:37:01	-0.0123, -0.0112, -0.0107,	-0.0114	PPB		Hg LLC	HAA110714E
10064	SMPL	160-9071-C-1-C SD	5x	07 Nov 2014 16:39:42	-0.0765, -0.0759, -0.0755,	-0.0759	PPB		Hg LLC	HAA110714E
10065	SMPL	160-9071-C-1-D MS		07 Nov 2014 16:41:55	4.9222, 4.9514, 4.9722,	4.9486	PPB		Hg LLC	HAA110714E
10066	SMPL	160-9071-C-1-E MSD		07 Nov 2014 16:44:06	4.9140, 4.9412, 4.9618,	4.9390	PPB		Hg LLC	HAA110714E
10067	SMPL	LB 160-153858/1-B		07 Nov 2014 16:46:44	-0.0430, -0.0421, -0.0416,	-0.0422	PPB		Hg LLC	HAA110714E
10068	SMPL	LCS 160-154977/2-A		07 Nov 2014 16:49:25	4.8953, 4.9259, 4.9480,	4.9231	PPB		Hg LLC	HAA110714E
10069	SMPL	160-9093-G-1-B		07 Nov 2014 16:51:37	-0.0041, -0.0032, -0.0029,	-0.0034	PPB		Hg LLC	HAA110714E
10070	SMPL	160-9093-G-1-B SD	5x	07 Nov 2014 16:54:19	-0.0746, -0.0744, -0.0742,	-0.0744	PPB		Hg LLC	HAA110714E
10071	SMPL	160-9093-G-1-C MS		07 Nov 2014 16:56:33	3.7493, 3.7700, 3.7851,	3.7681	PPB		Hg LLC	HAA110714E
10072	CK STND	CCV		07 Nov 2014 16:58:45	5.0740, 5.1050, 5.1279,	5.1023	PPB		Hg LLC	HAA110714E
10073	CK STND	CCB		07 Nov 2014 17:01:25	-0.0307, -0.0298, -0.0292,	-0.0299	PPB		Hg LLC	HAA110714E
10074	SMPL	160-9093-G-1-D MSD		07 Nov 2014 17:04:06	-0.1283, -0.1290, -0.1299,	-0.1291	PPB		Hg LLC	HAA110714E
10075	SMPL	LB 160-150973/1-B		07 Nov 2014 17:06:18	-0.1158, -0.1168, -0.1179,	-0.1168	PPB		Hg LLC	HAA110714E
10076	SMPL	LCS 160-154978/2-A		07 Nov 2014 17:08:27	4.9790, 5.0090, 5.0313,	5.0064	PPB		Hg LLC	HAA110714E
10077	SMPL	160-8926-B-1-I		07 Nov 2014 17:10:39	-0.1715, -0.1718, -0.1719,	-0.1718	PPB		Hg LLC	HAA110714E
10078	SMPL	160-8926-B-1-I SD	5x	07 Nov 2014 17:13:17	-0.1041, -0.1044, -0.1045,	-0.1043	PPB		Hg LLC	HAA110714E
10079	SMPL	160-8926-B-1-J MS		07 Nov 2014 17:15:27	5.2015, 5.2326, 5.2545,	5.2295	PPB		Hg LLC	HAA110714E
10080	SMPL	160-8926-B-1-K MSD		07 Nov 2014 17:17:40	5.0199, 5.0479, 5.0682,	5.0453	PPB		Hg LLC	HAA110714E
10081	SMPL	MB 160-154495/1-A		07 Nov 2014 17:20:19	-0.0745, -0.0744, -0.0742,	-0.0744	PPB		Hg LLC	HAA110714E
10082	SMPL	LCS 160-154495/2-A		07 Nov 2014 17:23:01	5.1459, 5.1759, 5.1982,	5.1733	PPB		Hg LLC	HAA110714E
10083	SMPL	160-8798-H-18-I		07 Nov 2014 17:25:13	-0.0886, -0.0885, -0.0881,	-0.0884	PPB		Hg LLC	HAA110714E
10084	CK STND	CCV		07 Nov 2014 17:27:58	-0.1208, -0.1210, -0.1211,	(L)-0.1210	PPB		Hg LLC	HAA110714E
10085	CK STND	CCB		07 Nov 2014 17:30:09	0.0069, 0.0073, 0.0077,	0.0073	PPB		Hg LLC	HAA110714E
10086	SMPL	160-8798-H-18-I SD	5x	07 Nov 2014 17:32:20	-0.1264, -0.1262, -0.1259,	-0.1262	PPB		Hg LLC	HAA110714E
10087	SMPL	160-8798-H-18-M MS		07 Nov 2014 17:34:34	4.8931, 4.9243, 4.9478,	4.9217	PPB		Hg LLC	HAA110714E
10088	SMPL	160-8798-H-18-N MSD		07 Nov 2014 17:36:46	4.9752, 4.9985, 5.0152,	4.9963	PPB		Hg LLC	HAA110714E
10089	SMPL	160-8798-E-19-K		07 Nov 2014 17:39:29	-0.0650, -0.0647, -0.0639,	-0.0645	PPB		Hg LLC	HAA110714E
10090	SMPL	LB 160-152514/2-C		07 Nov 2014 17:42:08	-0.0218, -0.0208, -0.0204,	-0.0210	PPB		Hg LLC	HAA110714E
10091	SMPL	LCS 160-154498/2-A		07 Nov 2014 17:44:21	5.0276, 5.0573, 5.0786,	5.0545	PPB		Hg LLC	HAA110714E
10092	SMPL	160-9054-K-1-J		07 Nov 2014 17:46:33	-0.0920, -0.0912, -0.0902,	-0.0912	PPB		Hg LLC	HAA110714E
10093	SMPL	160-9054-K-1-J SD	5x	07 Nov 2014 17:49:09	-0.0988, -0.0989, -0.0985,	-0.0987	PPB		Hg LLC	HAA110714E
10094	SMPL	160-9054-K-1-K MS		07 Nov 2014 17:51:22	4.8821, 4.9117, 4.9315,	4.9084	PPB		Hg LLC	HAA110714E
10095	SMPL	160-9054-K-1-L MSD		07 Nov 2014 17:53:36	4.9116, 4.9400, 4.9607,	4.9374	PPB		Hg LLC	HAA110714E
10096	CK STND	CCV		07 Nov 2014 17:56:19	5.0882, 5.1231, 5.1489,	5.1201	PPB		Hg LLC	HAA110714E
10097	CK STND	CCB		07 Nov 2014 17:58:53	-0.0208, -0.0202, -0.0201,	-0.0204	PPB		Hg LLC	HAA110714E
10098	SMPL	MB 160-154504/1-A		07 Nov 2014 18:01:35	-0.0055, -0.0043, -0.0038,	-0.0045	PPB		Hg LLC	HAA110714E
10099	SMPL	LCS 160-154504/2-A		07 Nov 2014 18:03:49	5.1755, 5.2067, 5.2282,	5.2035	PPB		Hg LLC	HAA110714E
10100	SMPL	160-8954-I-1-H		07 Nov 2014 18:06:02	-0.0222, -0.0217, -0.0215,	-0.0218	PPB		Hg LLC	HAA110714E
10101	SMPL	160-8954-I-1-H SD	5x	07 Nov 2014 18:08:41	-0.0762, -0.0763, -0.0759,	-0.0761	PPB		Hg LLC	HAA110714E
10102	SMPL	160-8954-I-1-I MS		07 Nov 2014 18:10:54	5.1847, 5.2150, 5.2367,	5.2121	PPB		Hg LLC	HAA110714E
10103	SMPL	160-8954-I-1-J MSD		07 Nov 2014 18:13:06	5.0578, 5.0877, 5.1086,	5.0847	PPB		Hg LLC	HAA110714E
10104	CK STND	CCV		07 Nov 2014 18:15:49	5.1685, 5.1979, 5.2182,	5.1949	PPB		Hg LLC	HAA110714E
10105	CK STND	CCB		07 Nov 2014 18:18:32	-0.0238, -0.0235,	-0.0234	PPB		Hg LLC	HAA110714E

MTS 11/10/14
7470A
A. Batch: 155162

Hg LLC



Std ID	Conc.	Calc.	Dev.	Mean	SD or %RSD	Rep 1	Rep 2	Rep 3	Rep 4
CALIBRATION BLANK	0.000	0.017	0.017	1769	9.534	1757	1772	1780	
CALIBRATION 1	0.200	0.175	-0.025	3904	0.4 %	3883	3906	3924	
CALIBRATION 2	0.500	0.466	-0.034	7825	0.4 %	7783	7829	7865	
CALIBRATION 3	1.000	0.998	-0.002	15004	0.4 %	14930	15012	15071	
CALIBRATION 4	5.000	5.086	0.086	70164	0.4 %	69804	70205	70483	
CALIBRATION 5	10.000	9.959	-0.041	135921	0.4 %	135240	135983	136541	

11/10/14

HAA1107714E

7470A_Prep Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 160-96004 Analyst: Souris, Matthew T Batch Open: 11/7/2014 8:00:00AM

Batch End: 11/7/2014 10:00:00AM

Preparation, Mercury

	Input Sample Lab ID (Analytical Method)	SDG	Matrix	Initial Amount	Final Amount	Due Date	Analytical TAT	Dlv Rank	Comments	Output Sample Lab ID
1	Calibration~Blank N/A	N/A		30 mL	30 mL	N/A	N/A	N/A		
2	CAL~1 N/A	N/A		30 mL	30 mL	N/A	N/A	N/A		
3	CAL~2 N/A	N/A		30 mL	30 mL	N/A	N/A	N/A		
4	CAL~3 N/A	N/A		30 mL	30 mL	N/A	N/A	N/A		
5	CAL~4 N/A	N/A		30 mL	30 mL	N/A	N/A	N/A		
6	CAL~5 N/A	N/A		30 mL	30 mL	N/A	N/A	N/A		
7	ICV~160-96004/7 N/A	N/A		30 mL	30 mL	N/A	N/A	N/A		
8	ICB~160-96004/8 N/A	N/A		30 mL	30 mL	N/A	N/A	N/A		
9	CCV~160-96004/9 N/A	N/A		30 mL	30 mL	N/A	N/A	N/A		
10	CCB~160-96004/10 N/A	N/A		30 mL	30 mL	N/A	N/A	N/A		

Page 843 of 1207

7470A_Prep Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 160-96004 Analyst: Souris, Matthew T Batch Open: 11/7/2014 8:00:00AM

Batch End: 11/7/2014 10:00:00AM

atch Notes

Uncorrected Temperature	NA
Oven, Bath or Block Temperature 1	94.8
Uncorrected Temperature 2	NA
Oven, Bath or Block Temperature 2	94.8
Digestion Tube/Cup Lot #	198804
Hood ID or number	HOOD2
Hot Block ID number	HG1
ID number of the thermometer	111815895
Temperature	NA
Lot # of Nitric Acid	486927
Lot # of hydrochloric acid	486928
Sulfuric Acid Lot Number	461739
Potassium Permanganate Lot Number	486931
Potassium Persulfate Lot Number	437725
Hydroxylamine Sulfate Lot Number	437727
Stannous Chloride Lot Number	486933
Hydroxylamine Hydrochloride Lot	NA
NaCl Lot #	166068
Repittetor Volume Check	NA
Pipette ID	MT002ANDMET12ANDMET10

7470A_Prep Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 160-96004 Analyst: Souris, Matthew T Batch Open: 11/7/2014 8:00:00AM

Batch End: 11/7/2014 10:00:00AM

Visual ck - digestate F.V. consistency	NA
Person who witnessed spiking	NA
SOP Number	ST-MT-0007
Batch Comment	

Comments

7470A_Prep Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 160-96004 Analyst: Souris, Matthew T Batch Open: 11/7/2014 8:00:00AM

Batch End: 11/7/2014 10:00:00AM

Reagent Additions Worksheet

Lab ID	Reagent Code	Amount Added	Final Amount	y	Witness
CAL 1	Hg Curve Int._00461	0.06 mL	30 mL		
CAL 2	Hg Curve Int._00461	0.15 mL	30 mL		
CAL 3	Hg Curve Int._00461	0.30 mL	30 mL		
CAL 4	Hg Curve Int._00461	1.50 mL	30 mL		
CAL 5	Hg Curve Int._00461	3.00 mL	30 mL		
ICV 160-96004/7	Hg QC Int._00440	1.50 mL	30 mL		
CCV 160-96004/9	Hg QC Int._00440	1.50 mL	30 mL		

Other Reagents:

Reagent	Amount/Units	Lot#:

METALS BATCH WORKSHEET

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Batch Number: 152600 Batch Start Date: 10/29/14 09:49 Batch Analyst: Mcnutt, Joe W

Batch Method: FILTRATION Batch End Date: 10/29/14 10:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	HNO3 00095			
160-9071-C-1	SMC-09-20141027-21	FILTRATION, 3010A, 6010C	D	250 mL	250 mL	1 mL			

Batch Notes	
Filter Lot #	1128936
Lot # of Nitric Acid	460969

Basis	Basis Description
D	Dissolved

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Batch Number: 154334 Batch Start Date: 11/05/14 13:46 Batch Analyst: Davis, Shanika M

Batch Method: 3010A Batch End Date: 11/06/14 09:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	PREP 1 and 2 00005	STD SI 00009		
MB 160-154334/1		3010A, 6010C		50 mL	50 mL				
LCS 160-154334/2		3010A, 6010C		50 mL	50 mL	0.25 mL	0.25 mL		
160-9071-B-1	SMC-09-20141027-21	3010A, 6010C	T	50 mL	50 mL				
160-9071-B-1 MS	SMC-09-20141027-21	3010A, 6010C	T	50 mL	50 mL	0.25 mL	0.25 mL		
160-9071-B-1 MSD	SMC-09-20141027-21	3010A, 6010C	T	50 mL	50 mL	0.25 mL	0.25 mL		

Batch Notes	
Balance ID	27150548
Final Hot Block Temperature	94.0 Degrees C
Lot # of hydrochloric acid	479398
Lot # of Nitric Acid	491743
Hot Block ID number	HOTBLOCK1
Initial Hot Block Temperature	94.0 Degrees C
Oven, Bath or Block Temperature 1	94.0 Degrees C
Oven, Bath or Block Temperature 2	94.0 Degrees C
Pipette ID	M-PREP-2
ID number of the thermometer	111815886
Digestion Tube/Cup Lot #	198804
Uncorrected Temperature	94.0 Degrees C
Uncorrected Temperature 2	94.0 Degrees C

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Batch Number: 157443 Batch Start Date: 11/17/14 12:41 Batch Analyst: Davis, Shanika M

Batch Method: 3010A Batch End Date: 11/18/14 07:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	PREP 1 and 2 00006	STD SI 00009		
MB 160-157443/1		3010A, 6010C		50 mL	50 mL				
LCS 160-157443/2		3010A, 6010C		50 mL	50 mL	0.25 mL	0.25 mL		
160-9071-C-1-A	SMC-09-20141027-21	3010A, 6010C	D	25 mL	50 mL				

Batch Notes	
Balance ID	27150548
Final Hot Block Temperature	94.0 Degrees C
Lot # of hydrochloric acid	479398
Lot # of Nitric Acid	491743
Hot Block ID number	HOTBLOCK1
Initial Hot Block Temperature	94.0 Degrees C
Oven, Bath or Block Temperature 1	94.0 Degrees C
Oven, Bath or Block Temperature 2	94.0 Degrees C
Pipette ID	M-PREP-2
ID number of the thermometer	111815886
Digestion Tube/Cup Lot #	198804
Uncorrected Temperature	94.0 Degrees C
Uncorrected Temperature 2	94.0 Degrees C

Basis	Basis Description
D	Dissolved

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Batch Number: 152600 Batch Start Date: 10/29/14 09:49 Batch Analyst: Mcnutt, Joe W

Batch Method: FILTRATION Batch End Date: 10/29/14 10:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	HNO3 00095			
LB 160-152600/1		FILTRATION, 7470A, 7470A		250 mL	250 mL	1 mL			
160-9071-C-1	SMC-09-20141027-21	FILTRATION, 7470A, 7470A	D	250 mL	250 mL	1 mL			

Batch Notes	
Filter Lot #	1128936
Lot # of Nitric Acid	460969

Basis	Basis Description
D	Dissolved

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Batch Number: 154974 Batch Start Date: 11/07/14 08:00 Batch Analyst: Souris, Matthew T

Batch Method: 7470A Batch End Date: 11/07/14 10:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	Hg QC Int. 00440			
MB 160-154974/1		7470A, 7470A		30 mL	30 mL				
LCS 160-154974/2		7470A, 7470A		30 mL	30 mL	1.5 mL			
160-9071-B-1	SMC-09-20141027-21	7470A, 7470A	T	30 mL	30 mL				

Batch Notes	
Hydroxylamine Sulfate Lot Number	437727
Digestion End Time	1000
Digestion Start Time	800
Sulfuric Acid Lot Number	461739
Lot # of hydrochloric acid	486928
Lot # of Nitric Acid	486927
Hood ID or number	HOOD2
Hot Block ID number	HG1
Potassium Persulfate Lot Number	437725
Potassium Permanganate Lot Number	486931
NaCl Lot #	166068
Oven, Bath or Block Temperature 1	94.8 Celsius
Oven, Bath or Block Temperature 2	94.8 Celsius
Pipette ID	MT002, Met12, Met10
Stannous Chloride Lot Number	486933
SOP Number	St-MT-0007
ID number of the thermometer	111815895
Digestion Tube/Cup Lot #	198804

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Batch Number: 154976 Batch Start Date: 11/07/14 08:00 Batch Analyst: Souris, Matthew T

Batch Method: 7470A Batch End Date: 11/07/14 10:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	Hg QC Int. 00440			
LB 160-152600/1-A		7470A, 7470A		6 mL	30 mL				
LCS 160-154976/2		7470A, 7470A		6 mL	30 mL	1.5 mL			
160-9071-C-1-A	SMC-09-20141027-21	7470A, 7470A	D	6 mL	30 mL				
160-9071-C-1-A MS	SMC-09-20141027-21	7470A, 7470A	D	6 mL	30 mL	1.5 mL			
160-9071-C-1-A MSD	SMC-09-20141027-21	7470A, 7470A	D	6 mL	30 mL	1.5 mL			

Batch Notes	
Hydroxylamine Sulfate Lot Number	437727
Digestion End Time	1000
Digestion Start Time	800
Sulfuric Acid Lot Number	461739
Lot # of hydrochloric acid	486928
Lot # of Nitric Acid	486927
Hood ID or number	HOOD2
Hot Block ID number	HG1
Potassium Persulfate Lot Number	437725
Potassium Permanganate Lot Number	486931
NaCl Lot #	166068
Oven, Bath or Block Temperature 1	94.8 Celsius
Oven, Bath or Block Temperature 2	94.8 Celsius
Pipette ID	MT002, Met12, Met10
Stannous Chloride Lot Number	486933
SOP Number	St-MT-0007
ID number of the thermometer	111815895
Digestion Tube/Cup Lot #	198804

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Batch Number: 154976 Batch Start Date: 11/07/14 08:00 Batch Analyst: Souris, Matthew T

Batch Method: 7470A Batch End Date: 11/07/14 10:00

Basis	Basis Description
D	Dissolved

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY

COVER PAGE
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job Number: 160-9071-1

SDG No.:

Project: START Site in New Mexico

Client Sample ID	Lab Sample ID
SMC-09-20141027-21	160-9071-1
SMC-09-20141027-21	160-9071-1 DL

Comments:

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: SMC-09-20141027-21 Lab Sample ID: 160-9071-1

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG ID.:

Matrix: Water Date Sampled: 10/27/2014 10:55

Reporting Basis: WET Date Received: 10/28/2014 09:10

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
	Alkalinity	180	5.0	0.54	mg/L		B	1	310.1
	Carbonate Alkalinity as CaCO3	ND	5.0	0.54	mg/L			1	310.1
	Bicarbonate Alkalinity as CaCO3	180	5.0	0.54	mg/L		B	1	310.1
	pH	7.83	0.100	0.100	SU		HF	1	150.1
	Total Dissolved Solids (TDS)	530	5.0	3.5	mg/L			1	160.1
14797-55-8	Nitrate as N	5.9	0.40	0.080	mg/L			20	300.0
14797-65-0	Nitrite as N	ND	0.40	0.060	mg/L			20	300.0
16984-48-8	Fluoride	1.3	0.10	0.010	mg/L			1	300.0
16887-00-6	Chloride	29	4.0	0.40	mg/L			20	300.0
24959-67-9	Bromide	0.39	0.25	0.025	mg/L			1	300.0
14808-79-8	Sulfate	140	10	1.0	mg/L			20	300.0
14265-44-2	Orthophosphate	ND	0.50	0.078	mg/L			1	300.0

2-IN
CALIBRATION QUALITY CONTROL
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Analyst: JWM Batch Start Date: 10/28/2014

Reporting Units: SU Analytical Batch No.: 152486

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
4	ICV	11:18	pH	7.050	7.00	101	99.0-101.0		PH Buffer 7_00048
10	CCV	11:18	pH	7.050	7.00	101	99.0-101.0		PH Buffer 7_00048

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM II-IN

2-IN
CALIBRATION QUALITY CONTROL
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Analyst: AMF Batch Start Date: 10/28/2014

Reporting Units: mg/L Analytical Batch No.: 153094

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
7	ICV	18:27	Nitrate as N	0.404	0.400	101	90-110		IC 2nd Source_00006
			Nitrite as N	0.162	0.160	101	90-110		IC 2nd Source_00006
			Fluoride	0.993	1.00	99	90-110		IC 2nd Source_00006
			Chloride	1.95	2.00	98	90-110		IC 2nd Source_00006
			Bromide	2.03	2.00	101	90-110		IC 2nd Source_00006
			Sulfate	7.60	8.00	95	90-110		IC 2nd Source_00006
			Orthophosphate	7.76	8.00	97	90-110		IC 2nd Source_00006
8	ICB	18:42	Nitrate as N	ND					
			Nitrite as N	ND					
			Fluoride	ND					
			Chloride	ND					
			Bromide	ND					
			Sulfate	ND					
			Orthophosphate	ND					
18	CCV	21:11	Nitrate as N	0.384	0.400	96	90-110		IC Cal High_00030
			Nitrite as N	0.160	0.160	100	90-110		IC Cal High_00030
			Fluoride	0.986	1.00	99	90-110		IC Cal High_00030
			Chloride	1.93	2.00	97	90-110		IC Cal High_00030
			Bromide	1.96	2.00	98	90-110		IC Cal High_00030
			Sulfate	7.66	8.00	96	90-110		IC Cal High_00030
			Orthophosphate	7.78	8.00	97	90-110		IC Cal High_00030
19	CCB	21:26	Nitrate as N	ND					
			Nitrite as N	ND					
			Fluoride	ND					
			Chloride	0.0320				J	
			Bromide	ND					
			Sulfate	ND					
			Orthophosphate	ND					
29	CCV	23:55	Nitrate as N	0.392	0.400	98	90-110		IC Cal High_00030
			Nitrite as N	0.162	0.160	101	90-110		IC Cal High_00030
			Fluoride	0.985	1.00	99	90-110		IC Cal High_00030
			Chloride	1.95	2.00	98	90-110		IC Cal High_00030
			Bromide	1.95	2.00	98	90-110		IC Cal High_00030
			Sulfate	7.66	8.00	96	90-110		IC Cal High_00030
			Orthophosphate	7.90	8.00	99	90-110		IC Cal High_00030
30	CCB	00:10	Nitrate as N	ND					
			Nitrite as N	ND					
			Fluoride	ND					
			Chloride	0.0463				J	

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM II-IN

2-IN
CALIBRATION QUALITY CONTROL
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Analyst: AMF Batch Start Date: 10/29/2014

Reporting Units: mg/L Analytical Batch No.: 153094

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
30	CCB	00:10	Bromide	ND					
			Sulfate	ND					
			Orthophosphate	ND					

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM II-IN

3-IN
METHOD BLANK
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Method	Lab Sample ID	Analyte	Result	Qual	Units	RL	Dil
Batch ID: 154285 Date: 11/03/2014 10:20							
160.1	MB 160-154285/1	Total Dissolved Solids (TDS)	ND		mg/L	5.0	1
Batch ID: 153094 Date: 10/28/2014 18:57							
300.0	MB 160-153094/9	Nitrate as N	ND		mg/L	0.020	1
300.0	MB 160-153094/9	Nitrite as N	ND		mg/L	0.020	1
300.0	MB 160-153094/9	Fluoride	ND		mg/L	0.10	1
300.0	MB 160-153094/9	Chloride	ND		mg/L	0.20	1
300.0	MB 160-153094/9	Bromide	ND		mg/L	0.25	1
300.0	MB 160-153094/9	Sulfate	ND		mg/L	0.50	1
300.0	MB 160-153094/9	Orthophosphate	ND		mg/L	0.50	1
Batch ID: 153305 Date: 10/31/2014 11:18							
310.1	MB 160-153305/1	Alkalinity	2.50		mg/L	1.3	1
310.1	MB 160-153305/1	Carbonate Alkalinity as CaCO3	ND		mg/L	1.3	1
310.1	MB 160-153305/1	Bicarbonate Alkalinity as CaCO3	2.50		mg/L	1.3	1

7A-IN
LAB CONTROL SAMPLE
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 152486	Date: 10/28/2014 11:18										
						LCS Source: PH Buffer 7_00048					
150.1	LCS 160-152486/5	pH	7.050		SU	7.00	101	99.0-10 1.0			
Batch ID: 154285	Date: 11/03/2014 10:20										
						LCS Source: TDS LCS_00036					
160.1	LCS 160-154285/2	Total Dissolved Solids (TDS)	543		mg/L	500	109	90-110			
Batch ID: 153094	Date: 10/28/2014 19:11										
						LCS Source: IC Cal High_00030					
300.0	LCS 160-153094/10	Nitrate as N	0.379		mg/L	0.400	95	90-110			
300.0	LCS 160-153094/10	Nitrite as N	0.159		mg/L	0.160	99	90-110			
300.0	LCS 160-153094/10	Fluoride	0.971		mg/L	1.00	97	90-110			
300.0	LCS 160-153094/10	Chloride	1.91		mg/L	2.00	95	90-110			
300.0	LCS 160-153094/10	Bromide	1.89		mg/L	2.00	95	90-110			
300.0	LCS 160-153094/10	Sulfate	7.47		mg/L	8.00	93	90-110			
300.0	LCS 160-153094/10	Orthophosphate	7.43		mg/L	8.00	93	90-110			
Batch ID: 153305	Date: 10/31/2014 11:18										
						LCS Source: Alk Int._00009					
310.1	LCS 160-153305/2	Alkalinity	182		mg/L	200	91	90-110			
310.1	LCS 160-153305/2	Bicarbonate Alkalinity as CaCO3	182		mg/L	200	91	90-110			

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA-IN

7A-IN
HIGH LEVEL CONTROL SAMPLE
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 153305	Date: 10/31/2014 11:18										
						LCS Source: Alk Int._00009					
310.1	HLCS 160-153305/3	Alkalinity	370		mg/L	400	93	90-110			
310.1	HLCS 160-153305/3	Bicarbonate Alkalinity as CaCO3	370		mg/L	400	93	90-110			

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA-IN

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job Number: 160-9071-1

SDG Number:

Matrix: Water Instrument ID: 5STAR#4

Method: 310.1 MDL Date: 01/19/2012 14:28

Analyte	Wavelength/ Mass	RL (mg/L)	MDL (mg/L)
Alkalinity		5	0.542
Bicarbonate Alkalinity as CaCO3		5	0.542
Carbonate Alkalinity as CaCO3		5	0.542

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job Number: 160-9071-1

SDG Number:

Matrix: Water Instrument ID: 5STAR#4

Method: 310.1 XMDL Date: 01/19/2012 14:29

Analyte	Wavelength/ Mass	XRL (mg/L)	XMDL (mg/L)
Alkalinity		5	0.542
Bicarbonate Alkalinity as CaCO3		5	0.542
Carbonate Alkalinity as CaCO3		5	0.542

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job Number: 160-9071-1

SDG Number:

Matrix: Water Instrument ID: NOEQUIP

Method: 150.1 RL Date: 01/01/2011 14:25

Analyte	Wavelength/ Mass	RL (SU)	
pH		0.1	

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job Number: 160-9071-1

SDG Number:

Matrix: Water Instrument ID: NOEQUIP

Method: 150.1 XRL Date: 01/01/2011 14:25

Analyte	Wavelength/ Mass	XRL (SU)	
pH		0.1	

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job Number: 160-9071-1

SDG Number:

Matrix: Water Instrument ID: NOEQUIP

Method: 160.1 MDL Date: 10/18/2011 14:16

Analyte	Wavelength/ Mass	RL (mg/L)	MDL (mg/L)
Total Dissolved Solids (TDS)		5	3.497

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job Number: 160-9071-1

SDG Number:

Matrix: Water Instrument ID: NOEQUIP

Method: 160.1 XMDL Date: 10/18/2011 14:17

Analyte	Wavelength/ Mass	XRL (mg/L)	XMDL (mg/L)
Total Dissolved Solids (TDS)		5	3.497

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job Number: 160-9071-1

SDG Number:

Matrix: Water Instrument ID: IC2500

Method: 300.0 MDL Date: 04/24/2013 10:20

Analyte	Wavelength/ Mass	RL (mg/L)	MDL (mg/L)
Bromide		0.25	0.025
Chloride		0.2	0.02
Fluoride		0.1	0.01
Nitrate as N		0.02	0.004
Nitrite as N		0.02	0.003
Orthophosphate		0.5	0.078
Sulfate		0.5	0.05

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job Number: 160-9071-1

SDG Number:

Matrix: Water Instrument ID: IC2500

Method: 300.0 XMDL Date: 04/24/2013 10:14

Analyte	Wavelength/ Mass	XRL (mg/L)	XMDL (mg/L)
Bromide		0.25	0.025
Chloride		0.2	0.02
Fluoride		0.1	0.01
Nitrate as N		0.02	0.004
Nitrite as N		0.02	0.003
Orthophosphate		0.5	0.078
Sulfate		0.5	0.05

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Instrument ID: 5STAR#4 Analysis Method: 310.1

Start Date: 10/31/2014 11:18 End Date: 10/31/2014 11:18

Lab Sample Id	D/F	Type	Time	Analytes																									
				Alk	BALKCC	CarAlk																							
MB 160-153305/1	1	T	11:18	X	X	X																							
LCS 160-153305/2	1	T	11:18	X	X																								
HLCS 160-153305/3	1	T	11:18	X	X																								
ZZZZZZ			11:18																										
ZZZZZZ			11:18																										
ZZZZZZ			11:18																										
ZZZZZZ			11:18																										
ZZZZZZ			11:18																										
ZZZZZZ			11:18																										
ZZZZZZ			11:18																										
ZZZZZZ			11:18																										
ZZZZZZ			11:18																										
ZZZZZZ			11:18																										
ZZZZZZ			11:18																										
ZZZZZZ			11:18																										
ZZZZZZ			11:18																										
ZZZZZZ			11:18																										
ZZZZZZ			11:18																										
160-9071-1	1	T	11:18	X	X	X																							
ZZZZZZ			11:18																										
ZZZZZZ			11:18																										

Prep Types:
T = Total/NA

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Instrument ID: NOEQUIP Analysis Method: 150.1

Start Date: 10/28/2014 11:18 End Date: 10/28/2014 11:18

Lab Sample Id	D/F	Type	Time	Analytes																								
				pH																								
IC 160-152486/1			11:18	X																								
IC 160-152486/2			11:18	X																								
IC 160-152486/3			11:18	X																								
ICV 160-152486/4	1		11:18	X																								
LCS 160-152486/5	1	T	11:18	X																								
ZZZZZZ			11:18																									
ZZZZZZ			11:18																									
ZZZZZZ			11:18																									
160-9071-1	1	T	11:18	X																								
CCV 160-152486/10	1		11:18	X																								

Prep Types:
T = Total/NA

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Instrument ID: NOEQUIP Analysis Method: 160.1

Start Date: 11/03/2014 10:20 End Date: 11/03/2014 10:20

Lab Sample Id	D/F	Type	Time	Analytes																								
				TDS																								
MB 160-154285/1	1	T	10:20	X																								
LCS 160-154285/2	1	T	10:20	X																								
160-9071-1	1	T	10:20	X																								
ZZZZZZ			10:20																									
ZZZZZZ			10:20																									
ZZZZZZ			10:20																									
ZZZZZZ			10:20																									
ZZZZZZ			10:20																									
ZZZZZZ			10:20																									
ZZZZZZ			10:20																									

Prep Types:
T = Total/NA

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Instrument ID: IC2500 Analysis Method: 300.0

Start Date: 10/28/2014 16:57 End Date: 10/29/2014 06:53

Lab Sample Id	D/F	Type	Time	Analytes																										
				Br	Cl-	F	N-No2	NO3	PO4	SO4																				
IC 160-153094/1			16:57	X	X	X	X	X	X	X																				
IC 160-153094/2			17:12	X	X	X	X	X	X	X																				
IC 160-153094/3			17:27	X	X	X	X	X	X	X																				
IC 160-153094/4			17:42	X	X	X	X	X	X	X																				
IC 160-153094/5			17:57	X	X	X	X	X	X	X																				
IC 160-153094/6			18:12	X	X	X	X	X	X	X																				
ICV 160-153094/7	1		18:27	X	X	X	X	X	X	X																				
ICB 160-153094/8	1		18:42	X	X	X	X	X	X	X																				
MB 160-153094/9	1	T	18:57	X	X	X	X	X	X	X																				
LCS 160-153094/10	1	T	19:11	X	X	X	X	X	X	X																				
ZZZZZZ			19:26																										
ZZZZZZ			19:41																										
ZZZZZZ			19:56																										
ZZZZZZ			20:11																										
ZZZZZZ			20:26																										
ZZZZZZ			20:41																										
ZZZZZZ			20:56																										
CCV 160-153094/18	1		21:11	X	X	X	X	X	X	X																				
CCB 160-153094/19	1		21:26	X	X	X	X	X	X	X																				
160-9071-1	1	T	21:41	X		X			X																				
160-9071-1 DL	20	T	21:56		X		X	X		X																				
ZZZZZZ			22:11																										
ZZZZZZ			22:25																										
ZZZZZZ			22:40																										
ZZZZZZ			22:55																										
ZZZZZZ			23:10																										
ZZZZZZ			23:25																										
ZZZZZZ			23:40																										
CCV 160-153094/29	1		23:55	X	X	X	X	X	X	X																				
CCB 160-153094/30	1		00:10	X	X	X	X	X	X	X																				
ZZZZZZ			00:25																										
ZZZZZZ			00:40																										
ZZZZZZ			00:55																										
ZZZZZZ			01:10																										
ZZZZZZ			01:25																										
ZZZZZZ			01:39																										
ZZZZZZ			01:54																										
ZZZZZZ			02:09																										
ZZZZZZ			02:24																										

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Instrument ID: IC2500 Analysis Method: 300.0

Start Date: 10/28/2014 16:57 End Date: 10/29/2014 06:53

Lab Sample Id	D/F	Type	Time	Analytes																									
				Br	Cl-	F	N-No2	NO3	PO4	SO4																			
ZZZZZZ			02:39																										
ZZZZZZ			02:54																										
ZZZZZZ			03:09																										
ZZZZZZ			03:24																										
ZZZZZZ			03:39																										
ZZZZZZ			03:54																										
ZZZZZZ			04:09																										
ZZZZZZ			04:24																										
ZZZZZZ			04:39																										
ZZZZZZ			04:53																										
ZZZZZZ			05:08																										
ZZZZZZ			05:23																										
ZZZZZZ			05:38																										
ZZZZZZ			05:53																										
ZZZZZZ			06:08																										
ZZZZZZ			06:23																										
ZZZZZZ			06:38																										
ZZZZZZ			06:53																										

Prep Types:
T = Total/NA

FORM XIII-IN

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

St. Louis
Data Review Checklist
Ion Chromatography
Method 300.0/9056A

JB 11/13/14
Job#(s): ~~9065-1~~; 8975-1, 9071-1, 8995-1 Batch#(s): 153094

Run Date: 10/28 Due Date: 11/10 NCM# 1) 43813, 2) 43814 Instrument ID: IC82500

	Yes	No	N/A	2nd Level
A. Calibration/Instrument Run QC 1. Instrument calibrated (if applicable) using a blank and the required minimum number of calibration standards?	✓			✓
2. Is the initial calibration curve correlation coefficient ≥ 0.995?	✓			✓
3. ICV/CCV analyzed at the appropriate frequency and within control limits?	✓			✓
4. ICB/CCB analyzed at appropriate frequency and within +/- RL?	✓			✓
5. Calibration curve is updated in the method with the correct retention times?	✓			✓
6. Is the area count for the curve appropriate for the calibration levels in use? (verify one point on the calibration)	✓			✓
B. Sample Results 1. Samples with concentration > the linear range or affected by interferences diluted and reanalyzed? NCM-1	✓			✓
2. All reported results bracketed by in control QC?	✓			✓
3. Sample analyses done within holding time?	✓			✓
4. All dilutions were checked and verified against the "straight" runs?	✓			✓
5. Perchlorate: are all sample interferences less than the Matrix Conductivity Threshold observed in the Inst. Performance Check/INF?			✓	✓
C. Preparation/Matrix QC 1. LCS done per prep batch and within QC limits?	✓			✓
2. Method blank done per prep batch and <RL or CRDL (CLP)?	✓			✓
3. MS run at required frequency and within limits? NCM-2	✓	✓		✓
4. MS or Dup run at required frequency and RPD within SOP limits?	✓			✓
D. Other 1. Are all non-conformances documented appropriately?	✓			✓
2. Current MDL data on file?	✓			✓
3. Calculations checked for error?			✓	✓
4. Were manual integrations checked for appropriateness, correctness and proper documentation (before/after chromatograms, reason, analyst, date?	✓			✓
5. Transcriptions checked for error?	✓			✓
6. All client/project specific requirements met?	✓			✓
7. Date/time of analysis verified as correct?	✓			✓

Analyst: Alicia Slaton Date: 11-13-14

Comments:

2nd Level: JB Date: 11/13/14

Due: 11/10

TestAmerica St. Louis
Anion Worksheet

Analyst: AF Method(s): [X] 300.0 [ ] 9056A

Date: 10/28/14 Instrument: ICS2500

Sample Sequence: 102814CAL-Jack Calibration Sequence: 102814CAL-Jack

All result as ppb

Batch #: 153094

Lot Number	Sample ID	Fluoride	Chloride	Nitrite	Bromide	Nitrate	Phosphate	Sulfate	Chlorate	Iodide
8975-1	9068-1	2X	2X	2X		2X		2X		
8985-1 ~~9065-1~~	9056-1	2X	20X	2X		20X		20X		
	2	2X	20X	2X		20X		20X		
9071-1	9071-1	1X	20X	20X ND	~~2X~~ 1X AF 11-13-14	20X	~~2X~~ 1X AF 11-13-14	20X		
9040-1	9040-18	2X	2X	2X	2X	20X	2X	20X		
	19	2X	2X	2X	~~2X~~ AF 11-13-14	2X	~~2X~~ AF 11-13-14	2X		
	20	2X	2X	2X		2X		2X		
	21	2X	20X	2X		20X		20X		
	22	2X	2X	2X		2X		2X		
	23	2X	2X	2X	2X	2X	2X	2X	RR OOH (2X) Sat ICAL points 2/3 Missed STD.	
	24	2X	20X	2X		20X		20X		
	25	2X	2X	2X		2X		2X	D.N.R.	
	26	2X	2X	2X	2X	20X	2X	20X	Rep. in Hold from 10/25/14	
	27	2X	20X	2X		20X		20X		
	28	2X	20X	2X		20X		20X		
	29	2X	20X	2X		20X		20X		
	30	2X	20X	2X		20X		20X		
	31	2X	20X	2X		20X		20X		
	32	2X	20X	2X	2X	20X	2X	20X		

Sequence: 102814CAL_JACK
Operator: FLAKERA
Printed: 10/30/2014 3:27:20 PM

Title:
Datasource: SLIC03_local
Location: JACK\SEQUENCES\14OCT
Timebase: JACK
#Samples: 58
Created: 10/28/2014 3:05:49 PM by FLAKERA
Last Update: 10/28/2014 4:57:32 PM by FLAKERA

No.	Name	Type	Pos.	Inj. Vol.	Program	Method	Status	Inj. Date/Time
1	CAL 1	Standard	1	50.0	SLIC03_local	STLANIONS	Finished	10/28/2014 4:57:41 PM
2	CAL 2	Standard	2	50.0	SLIC03_local	STLANIONS	Finished	10/28/2014 5:12:36 PM
3	CAL 3	Standard	3	50.0	SLIC03_local	STLANIONS	Finished	10/28/2014 5:27:32 PM
4	CAL 4	Standard	4	50.0	SLIC03_local	STLANIONS	Finished	10/28/2014 5:42:27 PM
5	CAL 5	Standard	5	50.0	SLIC03_local	STLANIONS	Finished	10/28/2014 5:57:22 PM
6	CAL 6	Standard	6	50.0	SLIC03_local	STLANIONS	Finished	10/28/2014 6:12:17 PM
7	ICV	Unknown	7	50.0	SLIC03_local	STLANIONS	Finished	10/28/2014 6:27:12 PM
8	ICB	Unknown	8	50.0	SLIC03_local	STLANIONS	Finished	10/28/2014 6:42:08 PM
9	MB	Unknown	9	50.0	SLIC03_local	STLANIONS	Finished	10/28/2014 6:57:03 PM
10	LCS	Unknown	10	50.0	SLIC03_local	STLANIONS	Finished	10/28/2014 7:11:58 PM
11	9068-A-1 @2	Unknown	11	50.0	SLIC03_local	STLANIONS	Finished	10/28/2014 7:26:53 PM
12	9068-A-1 DU @2	Unknown	12	50.0	SLIC03_local	STLANIONS	Finished	10/28/2014 7:41:49 PM
13	9068-A-1 MS @2	Unknown	13	50.0	SLIC03_local	STLANIONS	Finished	10/28/2014 7:56:44 PM
14	9056-A-1 @2	Unknown	14	50.0	SLIC03_local	STLANIONS	Finished	10/28/2014 8:11:40 PM
15	9056-A-1 @20	Unknown	15	50.0	SLIC03_local	STLANIONS	Finished	10/28/2014 8:26:35 PM
16	9056-A-2 @2	Unknown	16	50.0	SLIC03_local	STLANIONS	Finished	10/28/2014 8:41:30 PM
17	9056-A-2 @20	Unknown	17	50.0	SLIC03_local	STLANIONS	Finished	10/28/2014 8:56:25 PM
18	CCV	Unknown	18	50.0	SLIC03_local	STLANIONS	Finished	10/28/2014 9:11:20 PM
19	CCB	Unknown	19	50.0	SLIC03_local	STLANIONS	Finished	10/28/2014 9:26:16 PM
20	9071-A-1	Unknown	20	50.0	SLIC03_local	STLANIONS	Finished	10/28/2014 9:41:11 PM
21	9071-A-1 @20	Unknown	21	50.0	SLIC03_local	STLANIONS	Finished	10/28/2014 9:56:06 PM
22	9071-A-1 @200	Unknown	22	50.0	SLIC03_local	STLANIONS	Finished	10/28/2014 10:11:01 PM
23	9040-A-18 @2	Unknown	23	50.0	SLIC03_local	STLANIONS	Finished	10/28/2014 10:25:57 PM
24	9040-A-18 @20	Unknown	24	50.0	SLIC03_local	STLANIONS	Finished	10/28/2014 10:40:52 PM
25	9040-A-18 MS @2	Unknown	25	50.0	SLIC03_local	STLANIONS	Finished	10/28/2014 10:55:48 PM
26	9040-A-18 MS @20	Unknown	26	50.0	SLIC03_local	STLANIONS	Finished	10/28/2014 11:10:43 PM
27	9040-A-19 @2	Unknown	27	50.0	SLIC03_local	STLANIONS	Finished	10/28/2014 11:25:38 PM
28	9040-A-20 @2	Unknown	28	50.0	SLIC03_local	STLANIONS	Finished	10/28/2014 11:40:34 PM
29	CCV	Unknown	29	50.0	SLIC03_local	STLANIONS	Finished	10/28/2014 11:55:29 PM
30	CCB	Unknown	30	50.0	SLIC03_local	STLANIONS	Finished	10/29/2014 12:10:24 AM
31	9040-A-21 @2	Unknown	31	50.0	SLIC03_local	STLANIONS	Finished	10/29/2014 12:25:20 AM
32	9040-A-21 @20	Unknown	32	50.0	SLIC03_local	STLANIONS	Finished	10/29/2014 12:40:15 AM
33	9040-A-22 @2	Unknown	33	50.0	SLIC03_local	STLANIONS	Finished	10/29/2014 12:55:10 AM
34	9040-A-23 @2	Unknown	34	50.0	SLIC03_local	STLANIONS	Finished	10/29/2014 1:10:06 AM
35	9040-A-24 @2	Unknown	35	50.0	SLIC03_local	STLANIONS	Finished	10/29/2014 1:25:01 AM
36	9040-A-24 @20	Unknown	36	50.0	SLIC03_local	STLANIONS	Finished	10/29/2014 1:39:56 AM
37	9040-A-25 @2	Unknown	37	50.0	SLIC03_local	STLANIONS	Finished	10/29/2014 1:54:51 AM
38	9040-A-26 @2	Unknown	38	50.0	SLIC03_local	STLANIONS	Finished	10/29/2014 2:09:47 AM
39	9040-A-26 @20	Unknown	39	50.0	SLIC03_local	STLANIONS	Finished	10/29/2014 2:24:42 AM
40	CCV	Unknown	40	50.0	SLIC03_local	STLANIONS	Finished	10/29/2014 2:39:37 AM
41	CCB	Unknown	41	50.0	SLIC03_local	STLANIONS	Finished	10/29/2014 2:54:33 AM
42	9040-A-27 @2	Unknown	42	50.0	SLIC03_local	STLANIONS	Finished	10/29/2014 3:09:28 AM

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Title:
Datasource: SLIC03_local
Location: JACK\SEQUENCES\14OCT
Timebase: JACK
#Samples: 58
Created: 10/28/2014 3:05:49 PM by FLAKERA
Last Update: 10/28/2014 4:57:32 PM by FLAKERA

No.	Name	Weight	Dil. Factor	ISTD Amount	Sample ID	Replicate ID	Comment
1	CAL 1	1.0000	1.0000	1.0000	100	102814	
2	CAL 2	1.0000	1.0000	1.0000	101	102814	
3	CAL 3	1.0000	1.0000	1.0000	102	102814	
4	CAL 4	1.0000	1.0000	1.0000	103	102814	
5	CAL 5	1.0000	1.0000	1.0000	104	102814	
6	CAL 6	1.0000	1.0000	1.0000	105	102814	
7	ICV	1.0000	1.0000	1.0000	106	102814	
8	ICB	1.0000	1.0000	1.0000	107	102814	
9	MB	1.0000	1.0000	1.0000	108	102814	
10	LCS	1.0000	1.0000	1.0000	109	102814	
11	9068-A-1 @2	1.0000	1.0000	1.0000	110	102814	
12	9068-A-1 DU @2	1.0000	1.0000	1.0000	111	102814	
13	9068-A-1 MS @2	1.0000	1.0000	1.0000	112	102814	
14	9056-A-1 @2	1.0000	1.0000	1.0000	113	102814	
15	9056-A-1 @20	1.0000	1.0000	1.0000	114	102814	
16	9056-A-2 @2	1.0000	1.0000	1.0000	115	102814	
17	9056-A-2 @20	1.0000	1.0000	1.0000	116	102814	
18	CCV	1.0000	1.0000	1.0000	117	102814	
19	CCB	1.0000	1.0000	1.0000	118	102814	
20	9071-A-1	1.0000	1.0000	1.0000	119	102814	
21	9071-A-1 @20	1.0000	1.0000	1.0000	120	102814	
22	9071-A-1 @200	1.0000	1.0000	1.0000	121	102814	
23	9040-A-18 @2	1.0000	1.0000	1.0000	122	102814	
24	9040-A-18 @20	1.0000	1.0000	1.0000	123	102814	
25	9040-A-18 MS @2	1.0000	1.0000	1.0000	124	102814	
26	9040-A-18 MS @20	1.0000	1.0000	1.0000	125	102814	
27	9040-A-19 @2	1.0000	1.0000	1.0000	126	102814	
28	9040-A-20 @2	1.0000	1.0000	1.0000	127	102814	
29	CCV	1.0000	1.0000	1.0000	128	102814	
30	CCB	1.0000	1.0000	1.0000	129	102814	
31	9040-A-21 @2	1.0000	1.0000	1.0000	130	102814	
32	9040-A-21 @20	1.0000	1.0000	1.0000	131	102814	
33	9040-A-22 @2	1.0000	1.0000	1.0000	132	102814	
34	9040-A-23 @2	1.0000	1.0000	1.0000	133	102814	
35	9040-A-24 @2	1.0000	1.0000	1.0000	134	102814	
36	9040-A-24 @20	1.0000	1.0000	1.0000	135	102814	
37	9040-A-25 @2	1.0000	1.0000	1.0000	136	102814	
38	9040-A-26 @2	1.0000	1.0000	1.0000	137	102814	
39	9040-A-26 @20	1.0000	1.0000	1.0000	138	102814	
40	CCV	1.0000	1.0000	1.0000	139	102814	
41	CCB	1.0000	1.0000	1.0000	140	102814	
42	9040-A-27 @2	1.0000	1.0000	1.0000	141	102814	

Sequence: 102814CAL_JACK
Operator: FLAKERA
Printed: 10/30/2014 3:27:20 PM

Title:
Datasource: SLIC03_local
Location: JACK\SEQUENCES\14OCT
Timebase: JACK
#Samples: 58
Created: 10/28/2014 3:05:49 PM by FLAKERA
Last Update: 10/28/2014 4:57:32 PM by FLAKERA

No.	Name	Type	Pos.	Inj. Vol.	Program	Method	Status	Inj. Date/Time
43	9040-A-27 @20	Unknown	43	50.0	SLIC03_local	STLANIONS	Finished	10/29/2014 3:24:23 AM
44	9040-A-28 @2	Unknown	44	50.0	SLIC03_local	STLANIONS	Finished	10/29/2014 3:39:18 AM
45	9040-A-28 @20	Unknown	45	50.0	SLIC03_local	STLANIONS	Finished	10/29/2014 3:54:14 AM
46	9040-A-29 @2	Unknown	46	50.0	SLIC03_local	STLANIONS	Finished	10/29/2014 4:09:09 AM
47	9040-A-29 @20	Unknown	47	50.0	SLIC03_local	STLANIONS	Finished	10/29/2014 4:24:04 AM
48	9040-A-30 @2	Unknown	48	50.0	SLIC03_local	STLANIONS	Finished	10/29/2014 4:39:00 AM
49	9040-A-30 @20	Unknown	49	50.0	SLIC03_local	STLANIONS	Finished	10/29/2014 4:53:55 AM
50	9040-A-31 @2	Unknown	50	50.0	SLIC03_local	STLANIONS	Finished	10/29/2014 5:08:50 AM
51	9040-A-31 @20	Unknown	51	50.0	SLIC03_local	STLANIONS	Finished	10/29/2014 5:23:45 AM
52	CCV	Unknown	52	50.0	SLIC03_local	STLANIONS	Finished	10/29/2014 5:38:41 AM
53	CCB	Unknown	53	50.0	SLIC03_local	STLANIONS	Finished	10/29/2014 5:53:36 AM
54	9040-A-32 @2	Unknown	54	50.0	SLIC03_local	STLANIONS	Finished	10/29/2014 6:08:31 AM
55	9040-A-32 @20	Unknown	55	50.0	SLIC03_local	STLANIONS	Finished	10/29/2014 6:23:27 AM
56	CCV	Unknown	56	50.0	SLIC03_local	STLANIONS	Finished	10/29/2014 6:38:22 AM
57	CCB	Unknown	57	50.0	SLIC03_local	STLANIONS	Finished	10/29/2014 6:53:17 AM
58	END	Unknown	58	50.0	SHUTDOWN	STLANIONS	Finished	10/29/2014 7:08:12 AM

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Title:
Datasource: SLIC03_local
Location: JACK\SEQUENCES\14OCT
Timebase: JACK
#Samples: 58
Created: 10/28/2014 3:05:49 PM by FLAKERA
Last Update: 10/28/2014 4:57:32 PM by FLAKERA

No.	Name	Weight	Dil. Factor	ISTD Amount	Sample ID	Replicate ID	Comment
43	9040-A-27 @20	1.0000	1.0000	1.0000	142	102814	
44	9040-A-28 @2	1.0000	1.0000	1.0000	143	102814	
45	9040-A-28 @20	1.0000	1.0000	1.0000	144	102814	
46	9040-A-29 @2	1.0000	1.0000	1.0000	145	102814	
47	9040-A-29 @20	1.0000	1.0000	1.0000	146	102814	
48	9040-A-30 @2	1.0000	1.0000	1.0000	147	102814	
49	9040-A-30 @20	1.0000	1.0000	1.0000	148	102814	
50	9040-A-31 @2	1.0000	1.0000	1.0000	149	102814	
51	9040-A-31 @20	1.0000	1.0000	1.0000	150	102814	
52	CCV	1.0000	1.0000	1.0000	151	102814	
53	CCB	1.0000	1.0000	1.0000	152	102814	
54	9040-A-32 @2	1.0000	1.0000	1.0000	153	102814	
55	9040-A-32 @20	1.0000	1.0000	1.0000	154	102814	
56	CCV	1.0000	1.0000	1.0000	155	102814	
57	CCB	1.0000	1.0000	1.0000	156	102814	
58	END	1.0000	1.0000	1.0000	157	102814	

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Title: STLANIONS
Datasource: SLIC03_local
Location: JACK\SEQUENCES\14OCT\102814CAL_JACK.SEQ
Created: 12/5/2005 2:54:29 PM by chemist
Timebase: JACK
Changed: 9/9/2014 3:11:26 PM by flakera

```
            Pressure.LowerLimit =               0
            Pressure.UpperLimit =               5000
            %A.Equate =                         "%A"
            %B.Equate =                         "%B"
            %C.Equate =                         "%C"
            %D.Equate =                         "%D"
            LoadPosition
            Data_Collection_Rate =              2.0
            Temperature_Compensation =          1.7
            Oven_Temperature =                  35
            Suppressor_Type =                   ASRS_4mm
            ; Carbonate =                       3.5
            ; Bicarbonate =                     1.0
            ; Hydroxide =                       0.0
            ; Tetraborate =                     0.0
            ; Other eluent =                    0.0
            ; Recommended Current =             24
            Suppressor_Current =                30
            Flow =                              1.2
            %B =                                0.0
            %C =                                0.0
            %D =                                0.0
            Curve =                             5

-2.300      Pump_Relay_1.Closed                 Duration=138.00

 0.000      ECD.Autozero
            ECD_1.AcqOn
            Pump_InjectValve.InjectPosition     Duration=30.00

12.5        ECD_1.AcqOff

            End
```

Chromeleon © Dionex Corporation, Version 6.80 Build 2212

Title: STLANIONS
Datasource: SLIC03_local
Location: JACK\SEQUENCES\14OCT\102814CAL_JACK.SEQ
Timebase: JACK
Created: 12/5/2005 2:54:29 PM by chemist
Changed: 9/9/2014 3:11:26 PM by flakera

No.	Channel	Operation	Parameters

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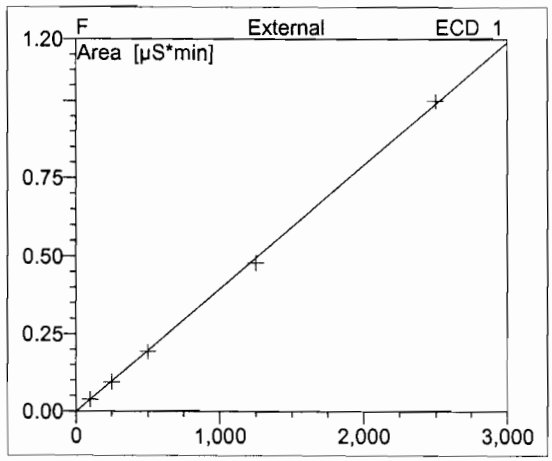
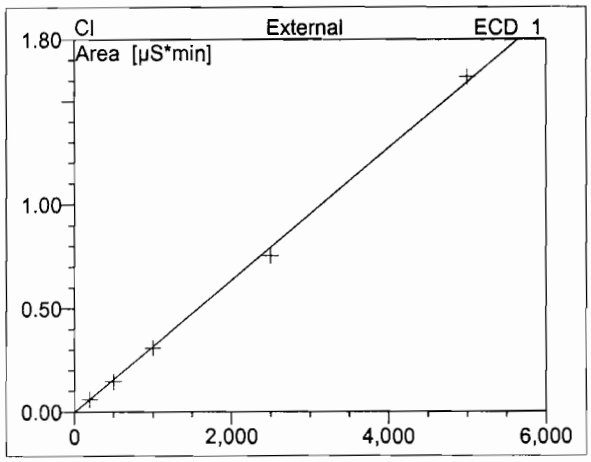
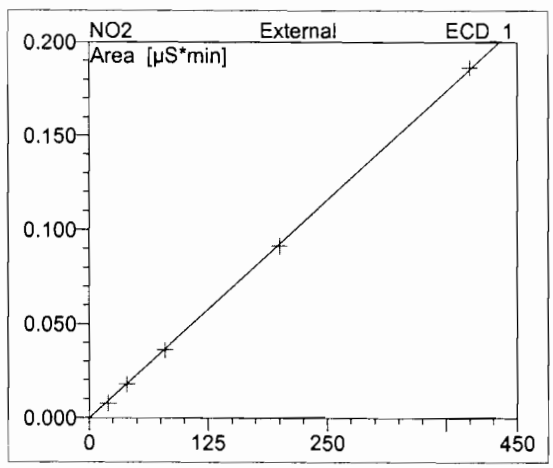
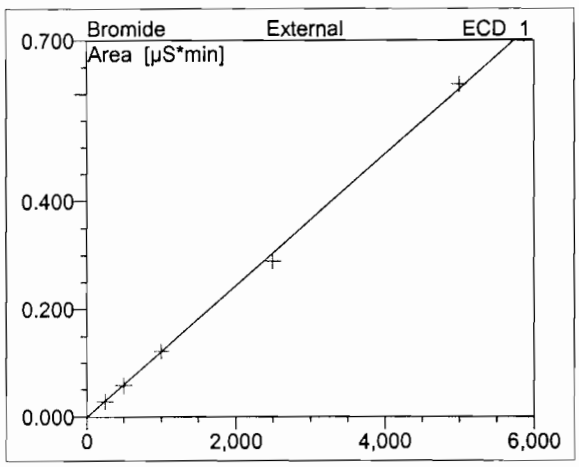
Calibration Batch Report - ECD_1

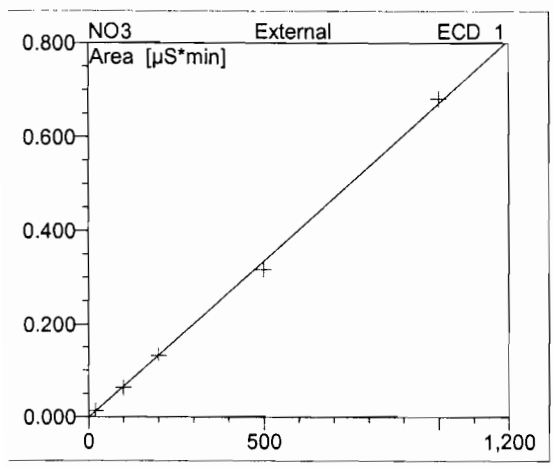
Sequence:	**102814CAL_JACK**	Inj. Vol.:	**50.0**
Program:	**SLIC03_local**	Operator:	**SLIC03**
Inj. Date/Time	**10/28/14 17:42**	Run Time:	**12.50**

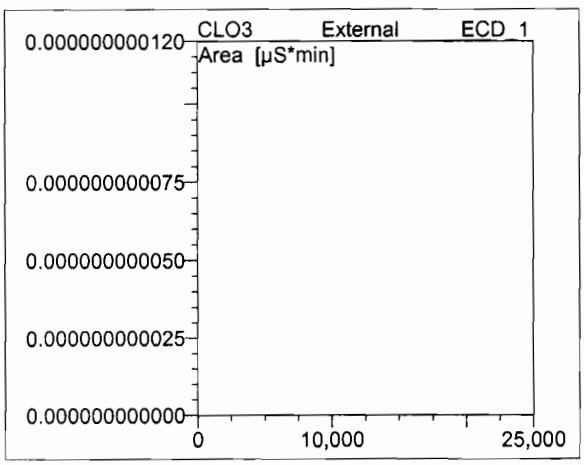


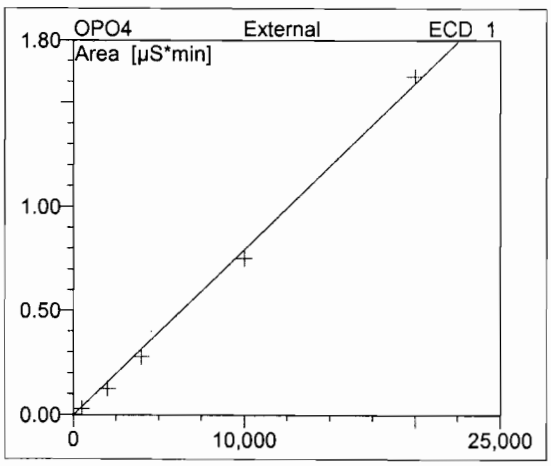


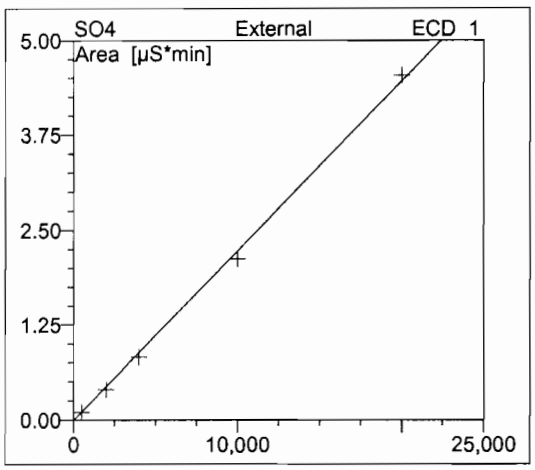












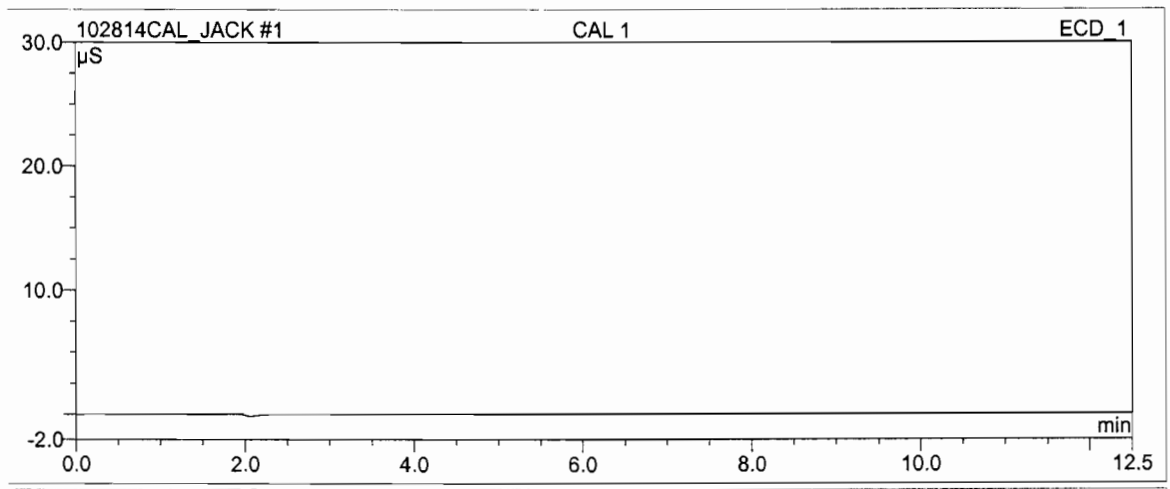
No.	Peak Name	Cal.Type	Corr.Coeff. %
1	F	Lin	99.978
2	Cl	Lin	99.944
3	NO2	Lin	99.997
4	Bromide	Lin	99.946
5	NO3	Lin	99.939
6	OPO4	Lin	99.937
7	SO4	Lin	99.948

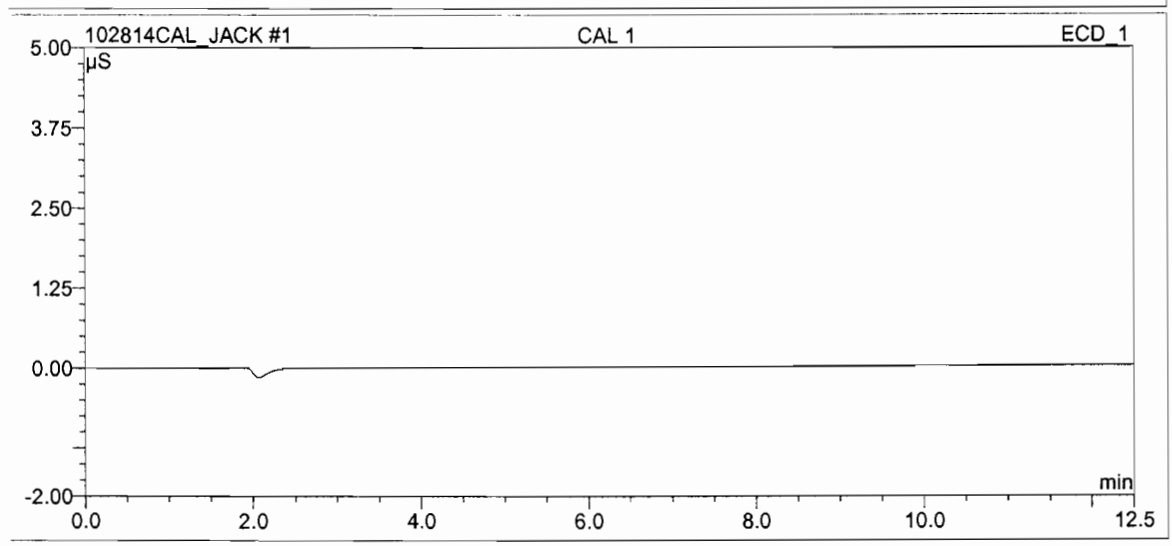
AF 11-5-14

Integration Report - ECD_1

Sample Name:	**CAL 1**	*Inj. Vol.:*	**50.0**
Sample Type:	**standard**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**28.10.14 16:57**	*Run Time:*	**12.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
		TOTAL:		0.00	0.00	0.00

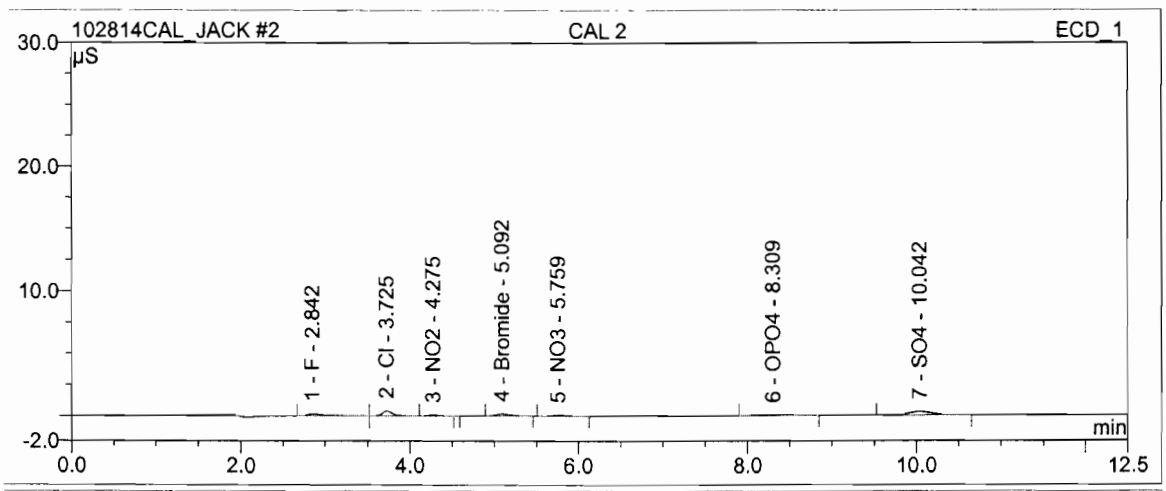


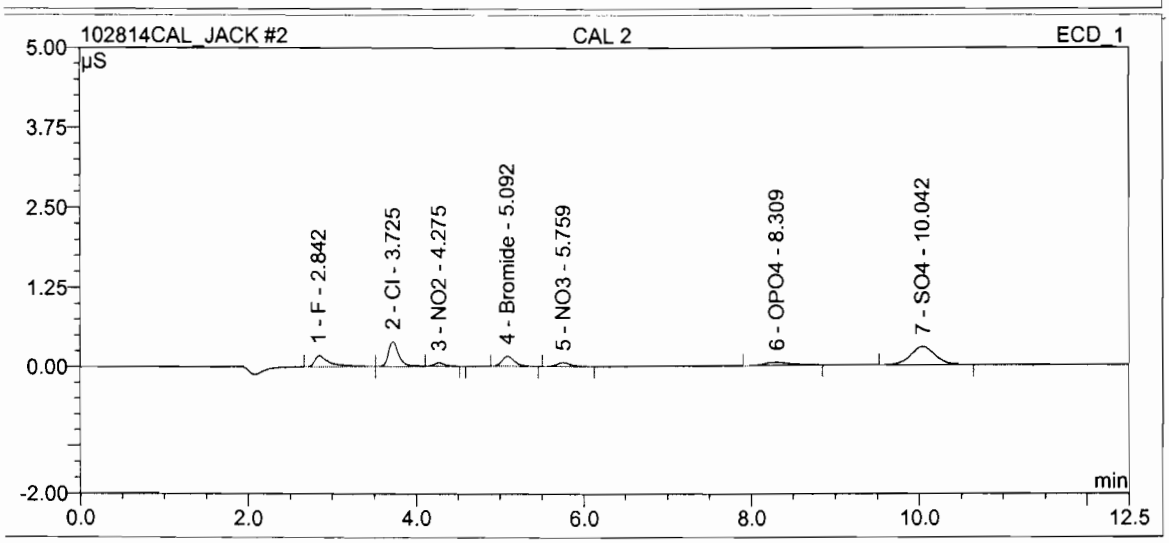


Integration Report - ECD_1

Sample Name:	**CAL 2**	*Inj. Vol.:*	**50.0**
Sample Type:	**standard**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**28.10.14 17:12**	*Run Time:*	**12.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.84	F	BM	0.038	0.178	95.7495
2	3.73	Cl	MB	0.060	0.395	187.6059
3	4.28	NO2	Rd	0.008	0.051	16.3794
4	5.09	Bromide	BMB	0.028	0.158	228.0417
5	5.76	NO3	BMB	0.013	0.063	18.8304
6	8.31	OPO4	BMB	0.020	0.051	253.6349
7	10.04	SO4	BMB	0.100	0.290	449.7309
		TOTAL:		0.27	1.19	1249.97



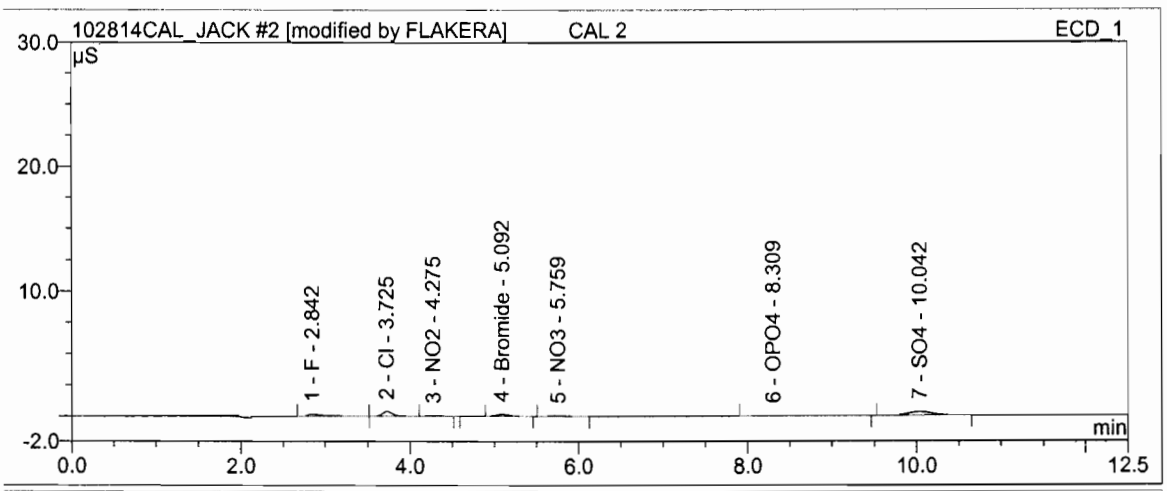


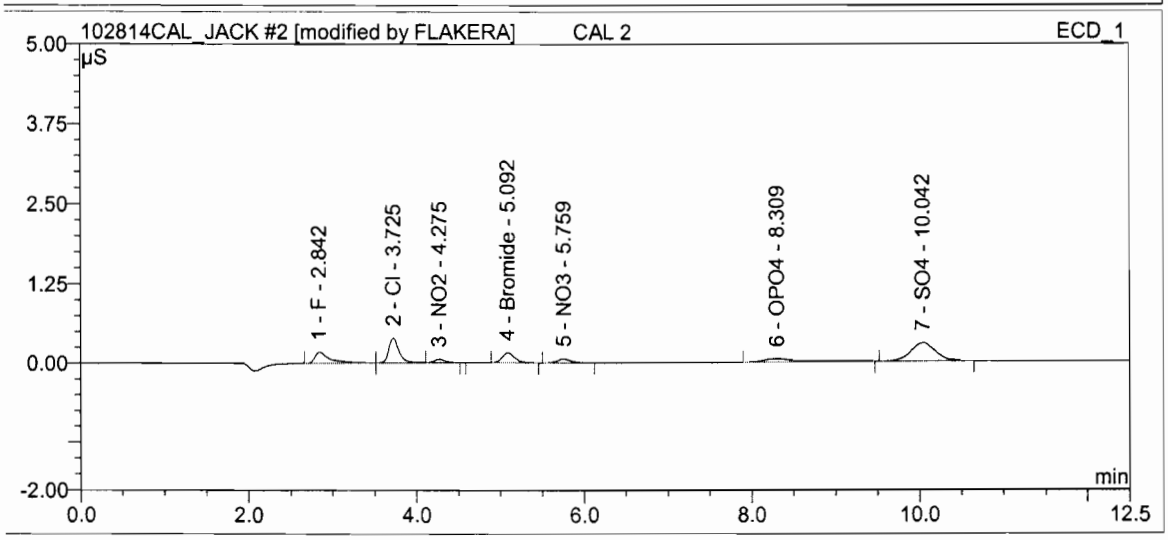
MI AF 11-5-14

Integration Report - ECD_1

Sample Name:	**CAL 2**	*Inj. Vol.:*	**50.0**
Sample Type:	**standard**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**28.10.14 17:12**	*Run Time:*	**12.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.84	F	BM	0.038	0.178	95.7495
2	3.73	Cl	MB	0.060	0.395	187.6059
3	4.28	NO2	Rd	0.008	0.051	16.3794
4	5.09	Bromide	BMB	0.028	0.158	228.0417
5	5.76	NO3	BMB	0.013	0.063	18.8304
6	8.31	OPO4	BMB*	0.028	0.054	345.8541
7	10.04	SO4	BMB	0.100	0.290	449.7309
		TOTAL:		0.27	1.19	1342.19

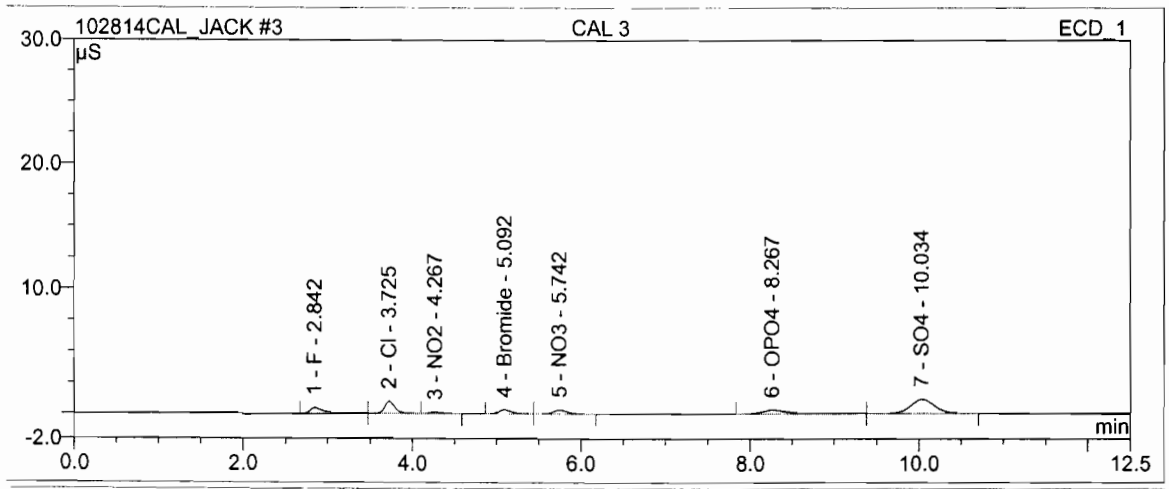


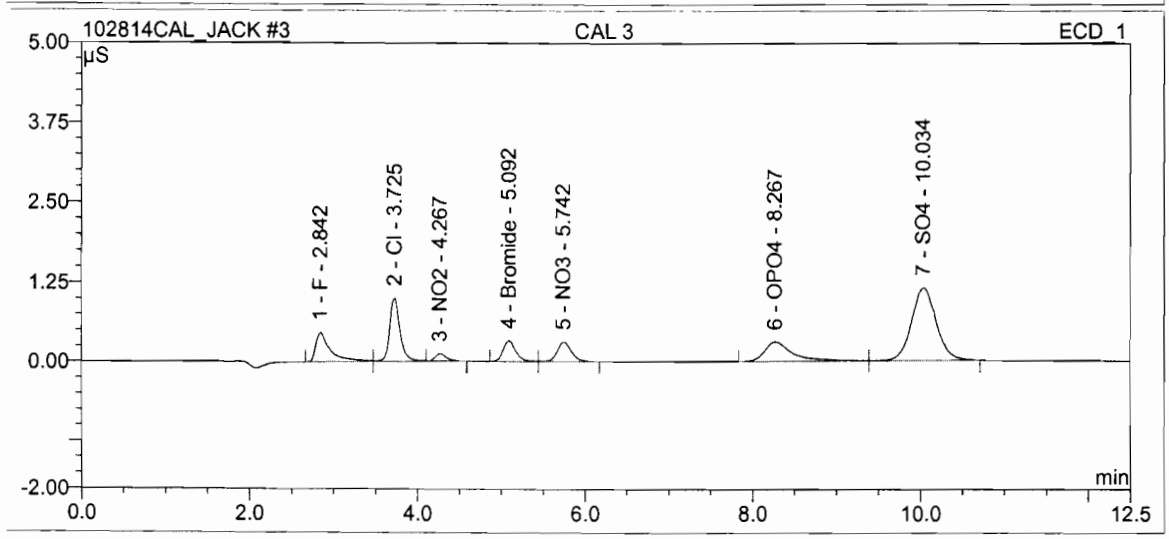


Integration Report - ECD_1

Sample Name:	**CAL 3**	*Inj. Vol.:*	**50.0**
Sample Type:	**standard**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**28.10.14 17:27**	*Run Time:*	**12.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.84	F	BM	0.094	0.462	236.8014
2	3.73	Cl	MB	0.146	1.004	459.4048
3	4.27	NO2	Rd	0.018	0.115	38.1993
4	5.09	Bromide	BM	0.058	0.328	475.2083
5	5.74	NO3	MB	0.063	0.309	93.4971
6	8.27	OPO4	BM	0.125	0.312	1572.6971
7	10.03	SO4	MB	0.399	1.150	1788.6903
		TOTAL:		0.90	3.68	4664.50

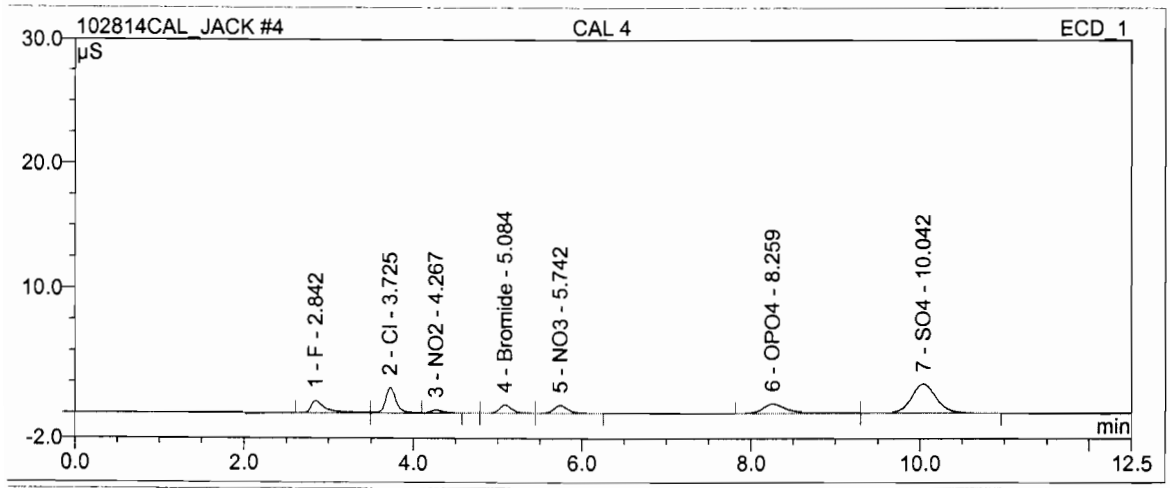


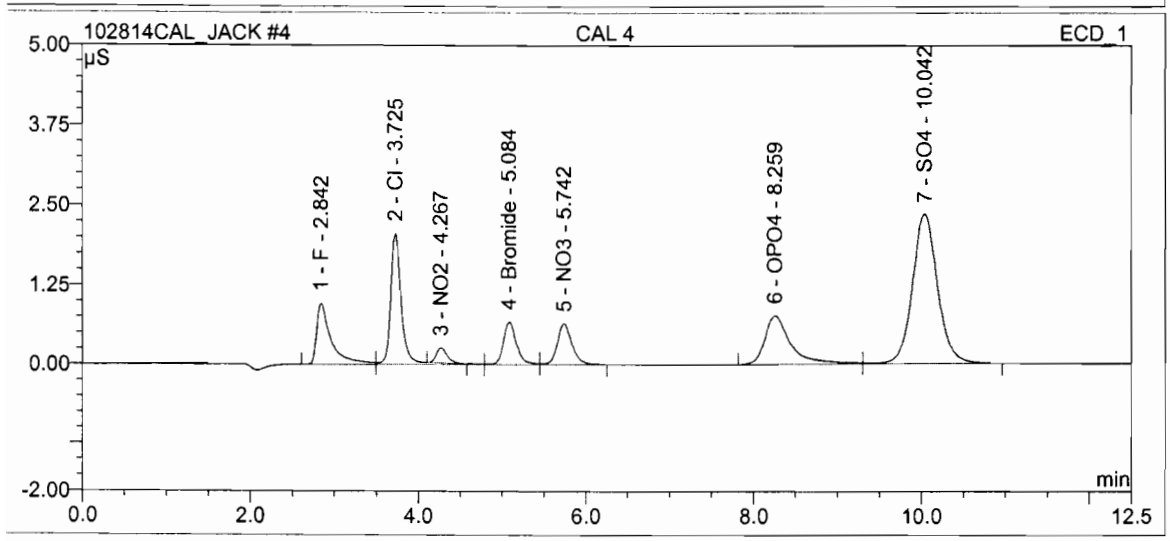


Integration Report - ECD_1

Sample Name:	**CAL 4**	*Inj. Vol.:*	**50.0**
Sample Type:	**standard**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**28.10.14 17:42**	*Run Time:*	**12.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.84	F	BM	0.194	0.967	490.0231
2	3.73	Cl	M	0.309	2.058	970.2575
3	4.27	NO2	Rd	0.036	0.237	78.2022
4	5.08	Bromide	M	0.122	0.672	1000.2540
5	5.74	NO3	MB	0.133	0.644	198.0401
6	8.26	OPO4	BM	0.278	0.768	3492.4971
7	10.04	SO4	MB	0.823	2.352	3692.2783
		TOTAL:		1.90	7.70	9921.55

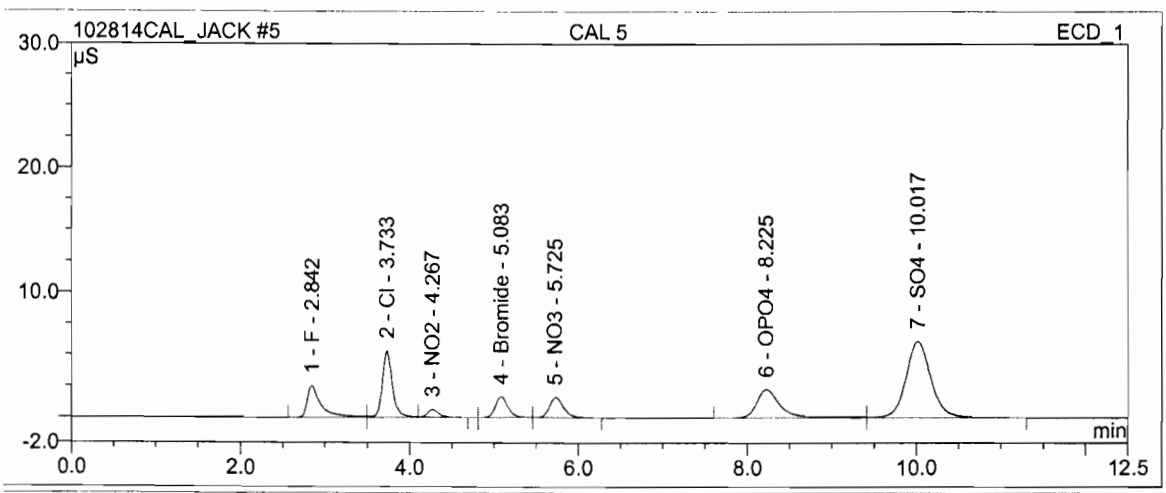


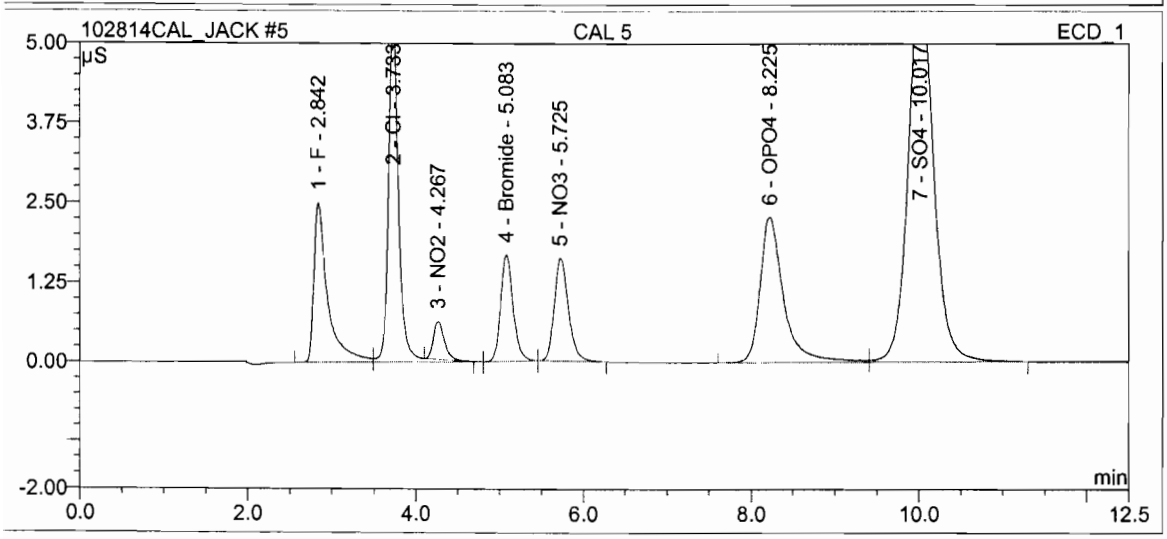


Integration Report - ECD_1

Sample Name:	**CAL 5**	*Inj. Vol.:*	**50.0**
Sample Type:	**standard**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**28.10.14 17:57**	*Run Time:*	**12.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.84	F	BM	0.479	2.498	1209.1029
2	3.73	Cl	Mb	0.755	5.316	2368.0697
3	4.27	NO2	Rd	0.092	0.601	197.3164
4	5.08	Bromide	bMb	0.290	1.675	2372.1742
5	5.73	NO3	bMB	0.318	1.610	472.9498
6	8.23	OPO4	BM	0.752	2.281	9444.8965
7	10.02	SO4	MB	2.119	6.131	9503.5425
		TOTAL:		4.80	20.11	25568.05

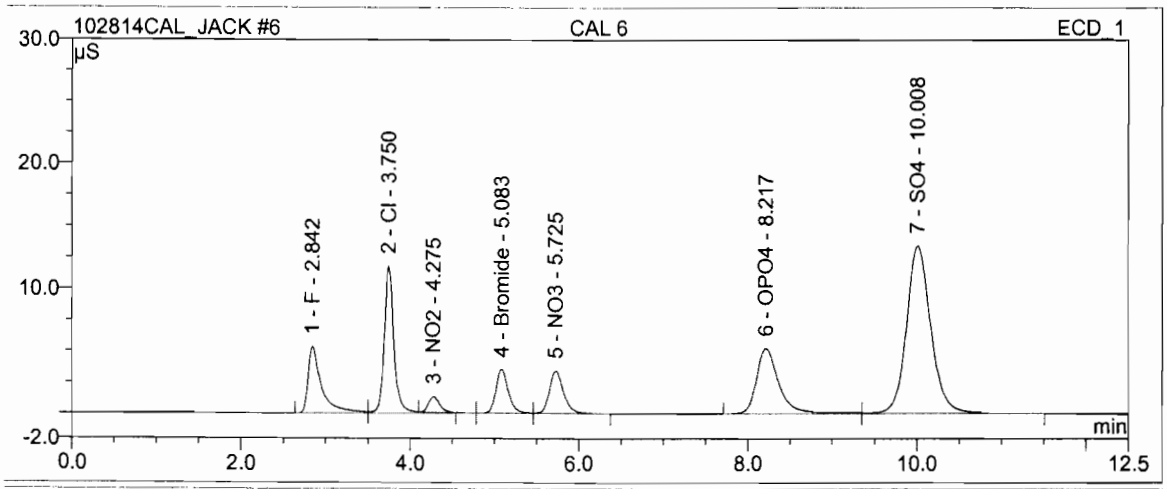


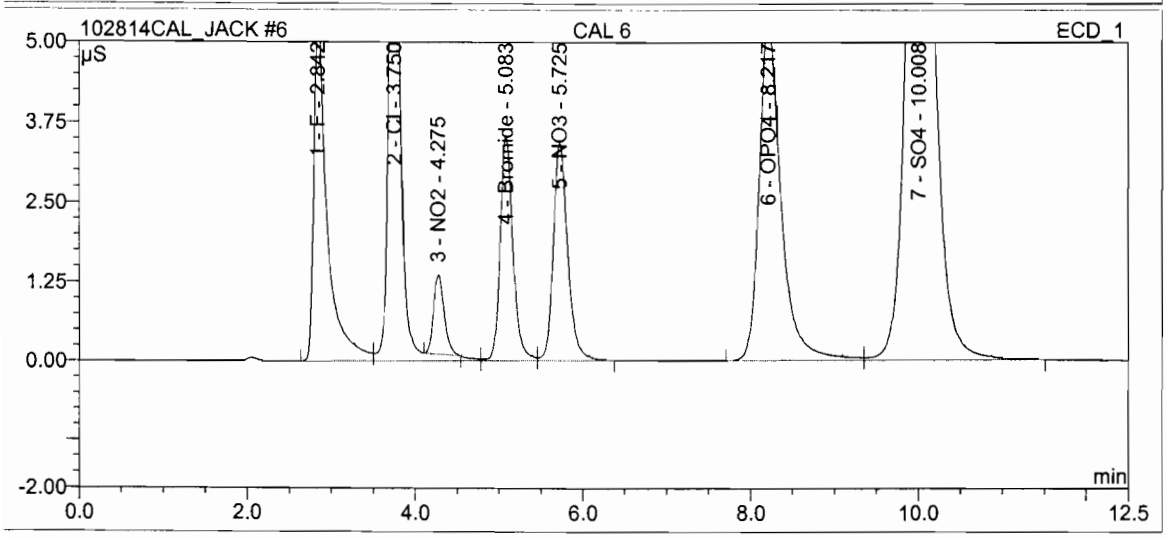


Integration Report - ECD_1

Sample Name:	**CAL 6**	*Inj. Vol.:*	**50.0**
Sample Type:	**standard**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**28.10.14 18:12**	*Run Time:*	**12.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.84	F	BM	1.001	5.320	2523.9338
2	3.75	Cl	M	1.618	11.808	5076.4689
3	4.28	NO2	Rd	0.187	1.254	402.0624
4	5.08	Bromide	M	0.619	3.537	5067.4392
5	5.73	NO3	MB	0.681	3.413	1014.5908
6	8.22	OPO4	BM	1.626	5.235	20427.9417
7	10.01	SO4	MB	4.534	13.436	20332.1608
		TOTAL:		10.27	44.00	54844.60

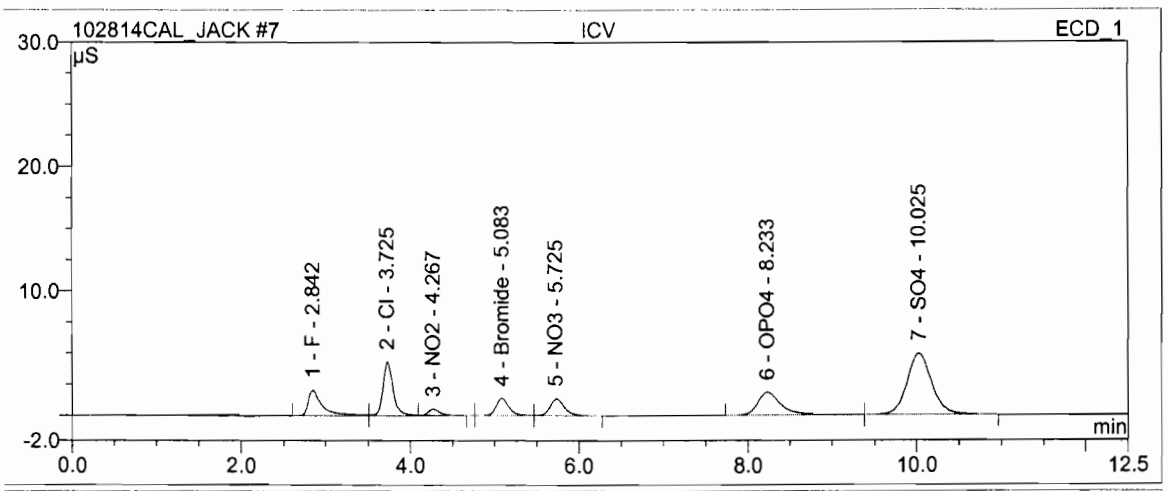


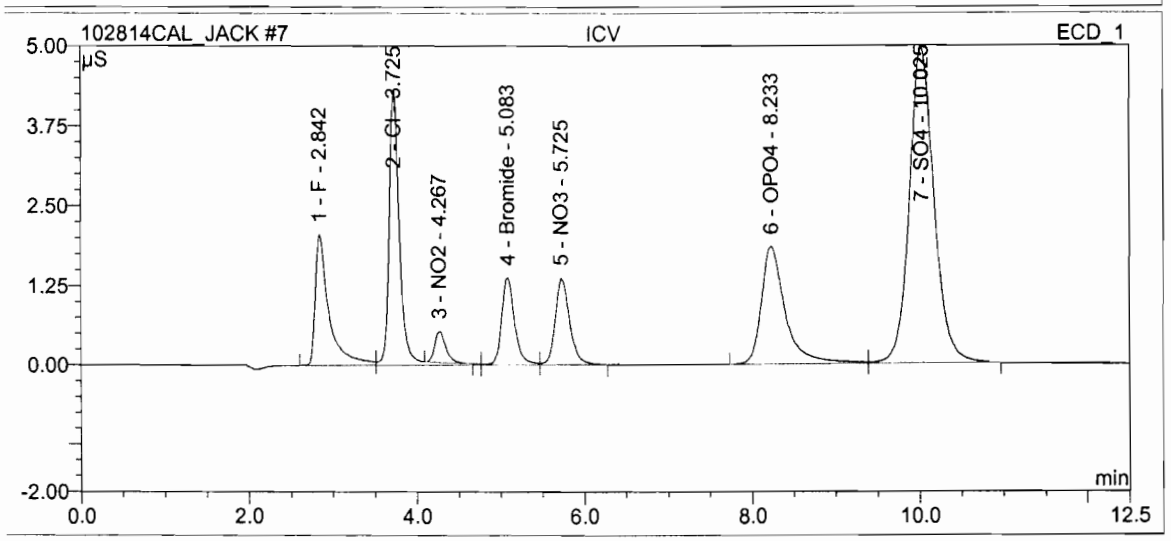


Integration Report - ECD_1

Sample Name:	**ICV**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**28.10.14 18:27**	*Run Time:*	**12.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.84	F	BM	0.394	2.050	992.5786
2	3.73	Cl	M	0.622	4.314	1952.6188
3	4.27	NO2	Rd	0.075	0.488	161.8121
4	5.08	Bromide	M	0.248	1.376	2028.5809
5	5.73	NO3	MB	0.271	1.364	404.1540
6	8.23	OPO4	BM	0.618	1.852	7762.7900
7	10.03	SO4	MB	1.696	4.930	7604.0416
		TOTAL:		3.92	16.38	20906.58

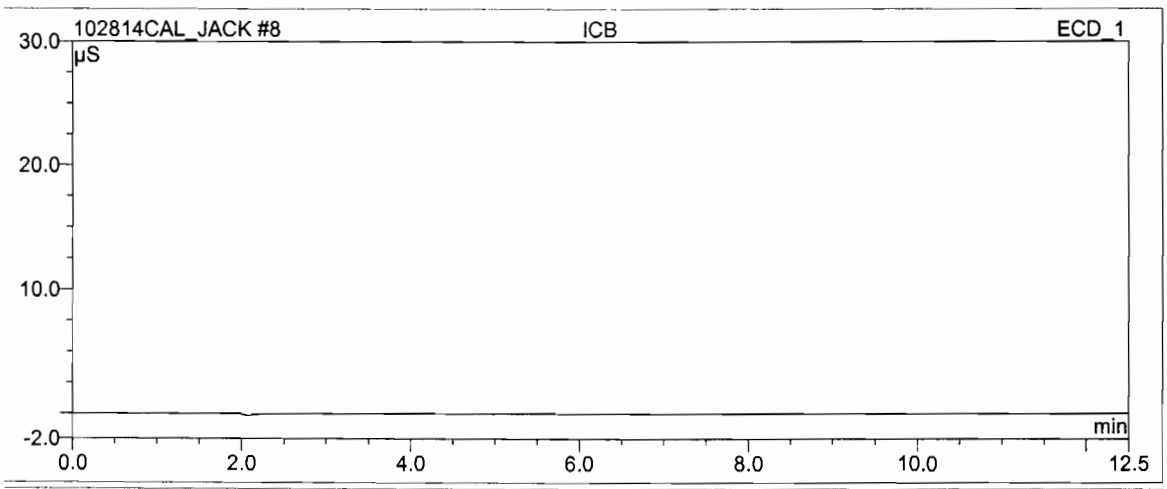


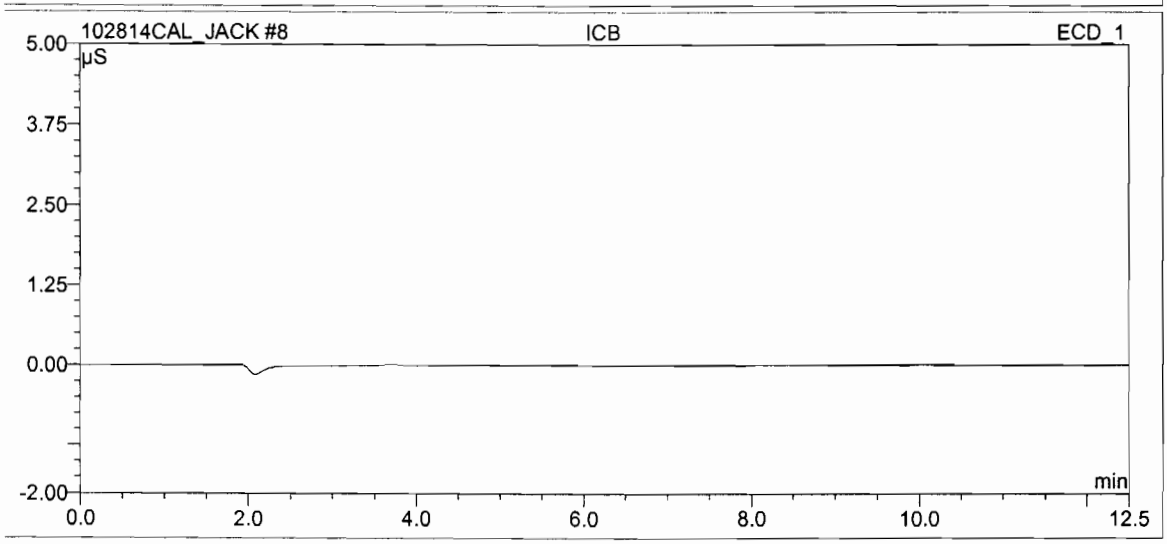


Integration Report - ECD_1

Sample Name:	**ICB**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**28.10.14 18:42**	*Run Time:*	**12.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
		TOTAL:		0.00	0.00	0.00

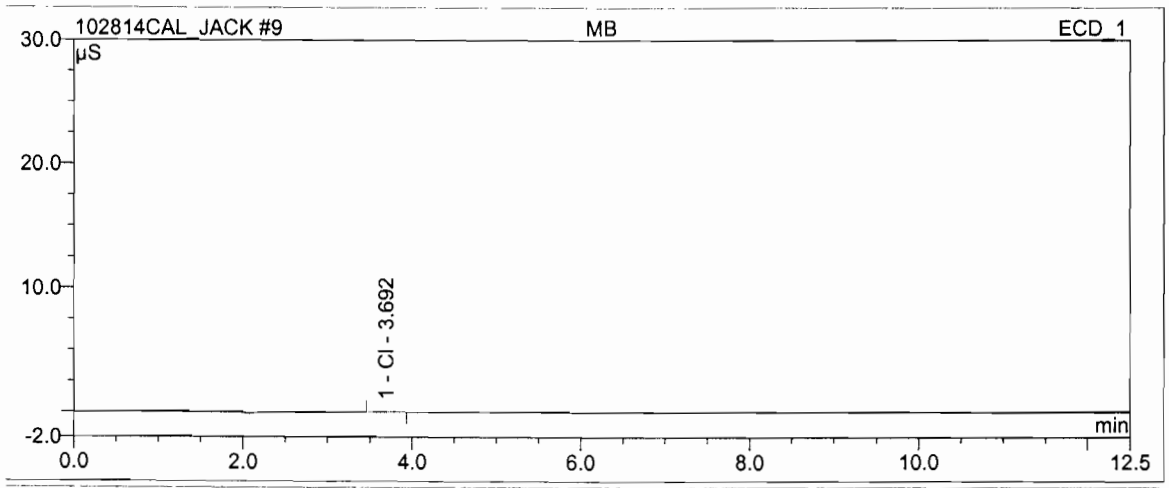


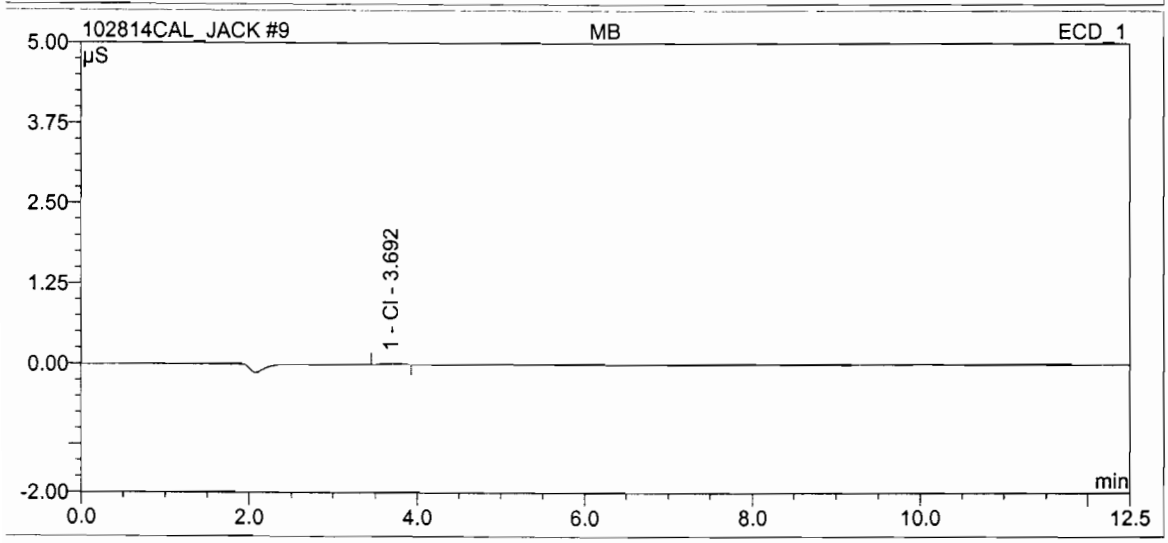


Integration Report - ECD_1

Sample Name:	**MB**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**28.10.14 18:57**	*Run Time:*	**12.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	3.69	Cl	BMB	0.005	0.022	15.9333
		TOTAL:		0.01	0.02	15.93

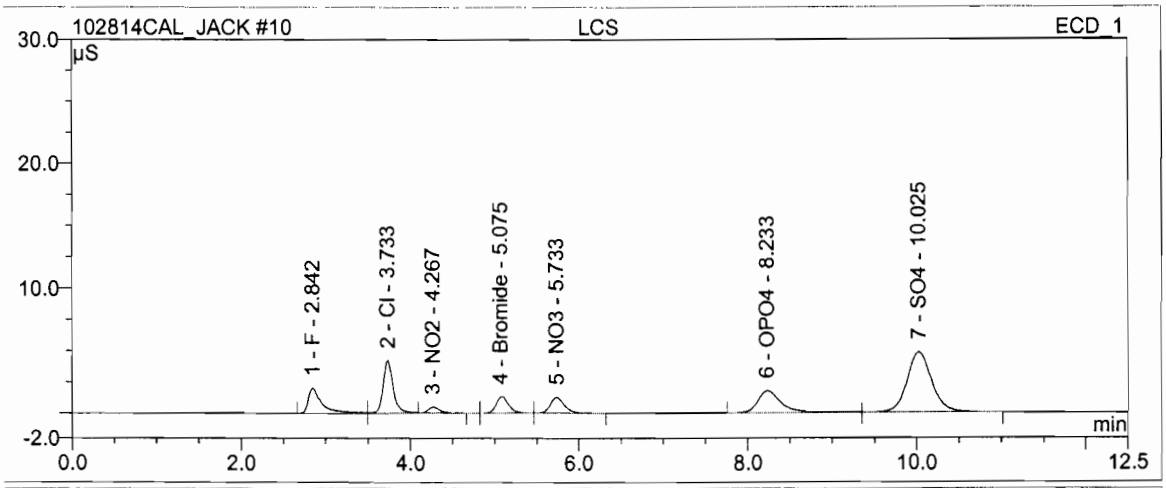


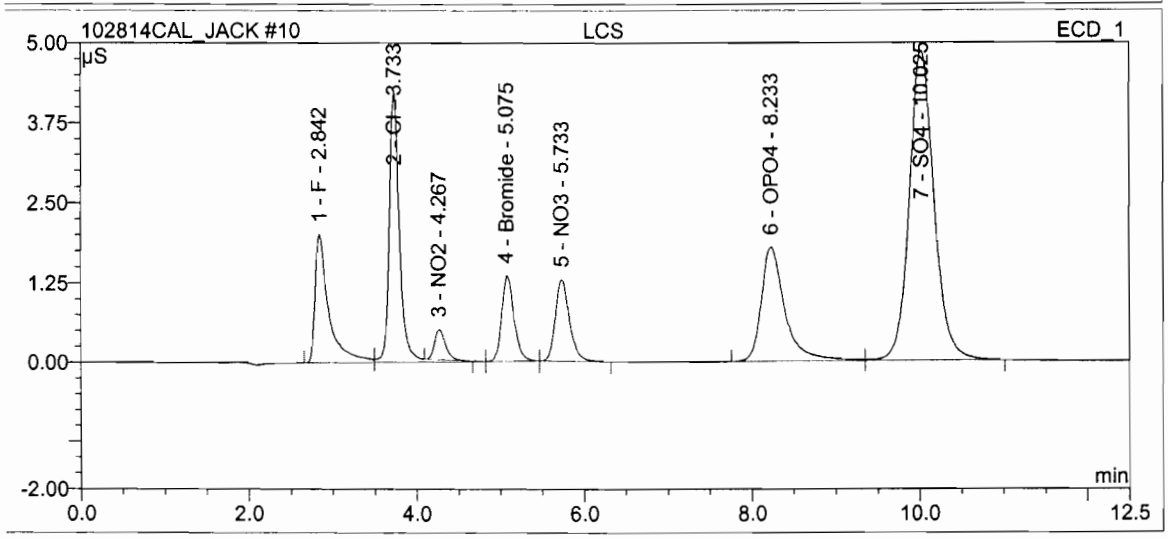


Integration Report - ECD_1

Sample Name:	**LCS**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**28.10.14 19:11**	*Run Time:*	**12.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.84	F	BM	0.385	2.006	971.3845
2	3.73	Cl	MB	0.608	4.244	1906.8028
3	4.27	NO2	Rd	0.074	0.479	158.7026
4	5.08	Bromide	bMb	0.231	1.347	1894.5763
5	5.73	NO3	bMB	0.254	1.283	378.8667
6	8.23	OPO4	BM	0.592	1.793	7434.1777
7	10.03	SO4	MB	1.667	4.841	7473.7650
		TOTAL:		3.81	15.99	20218.28

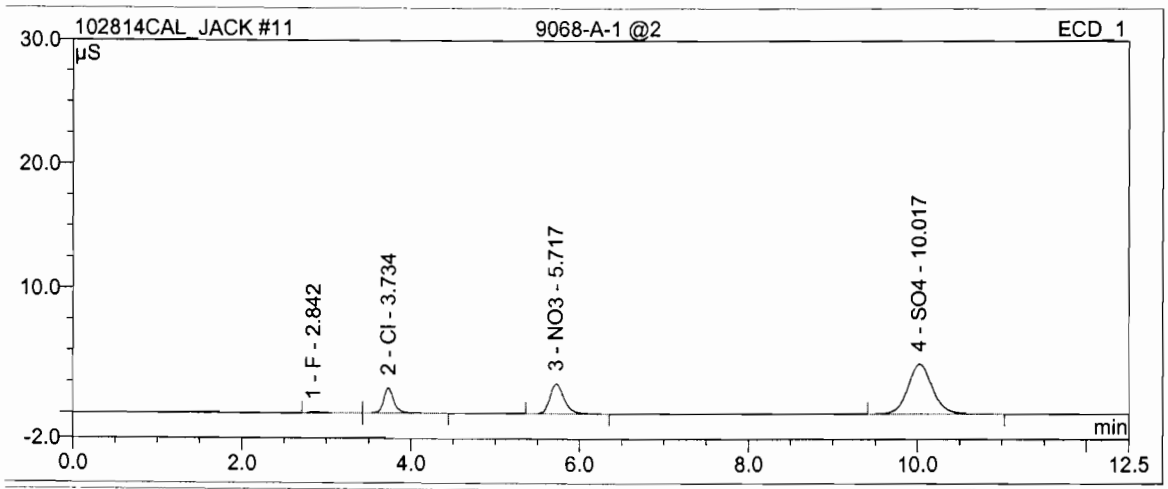


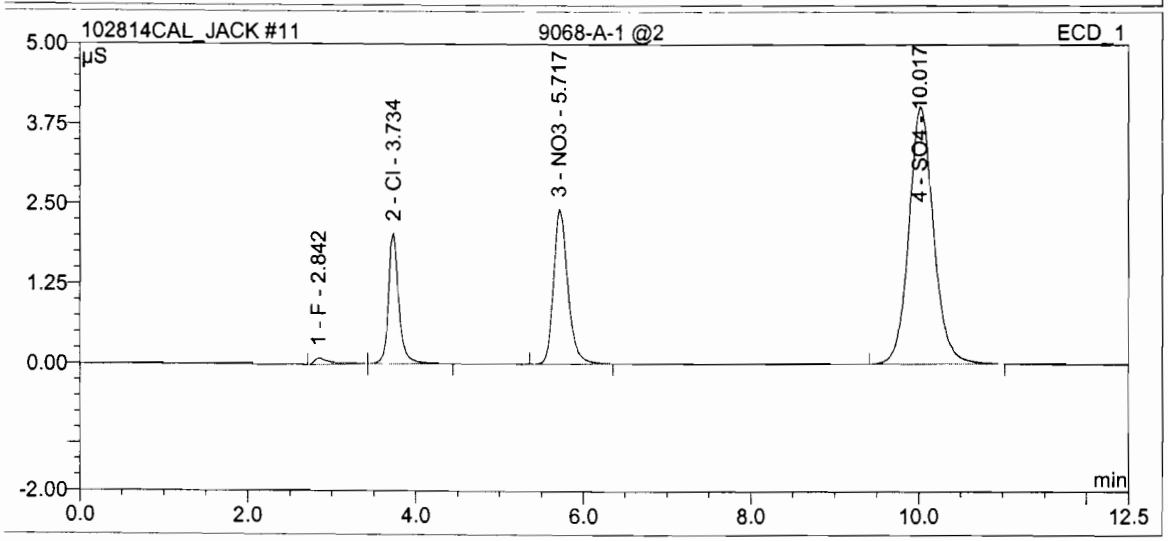


Integration Report - ECD_1

Sample Name:	**9068-A-1 @2**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**28.10.14 19:26**	*Run Time:*	**12.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.84	F	BMB	0.023	0.103	59.1836
2	3.73	Cl	bMB	0.290	2.035	911.3894
3	5.72	NO3	BMB	0.477	2.416	710.9056
4	10.02	SO4	BMB	1.379	4.022	6181.3754
		TOTAL:		2.17	8.58	7862.85

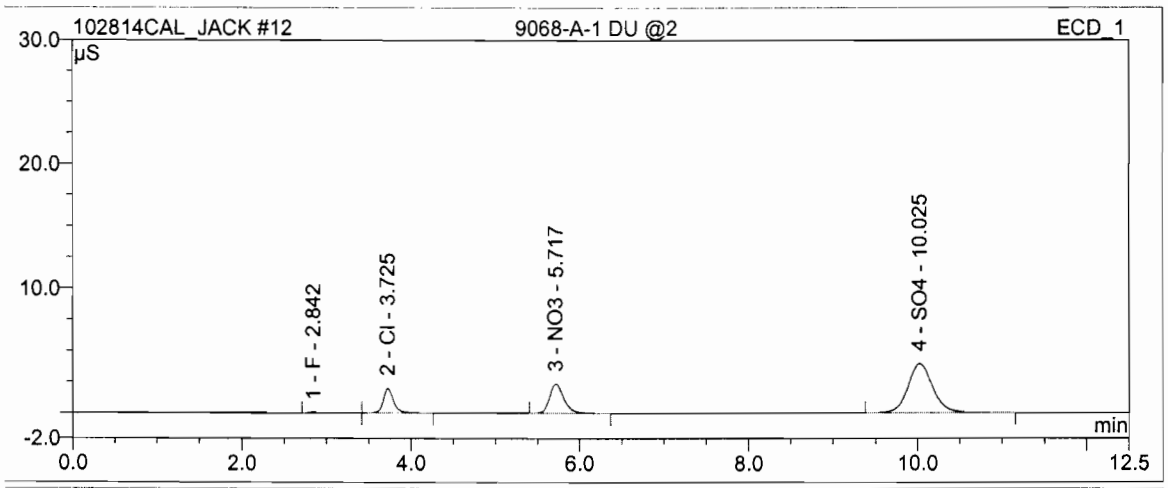


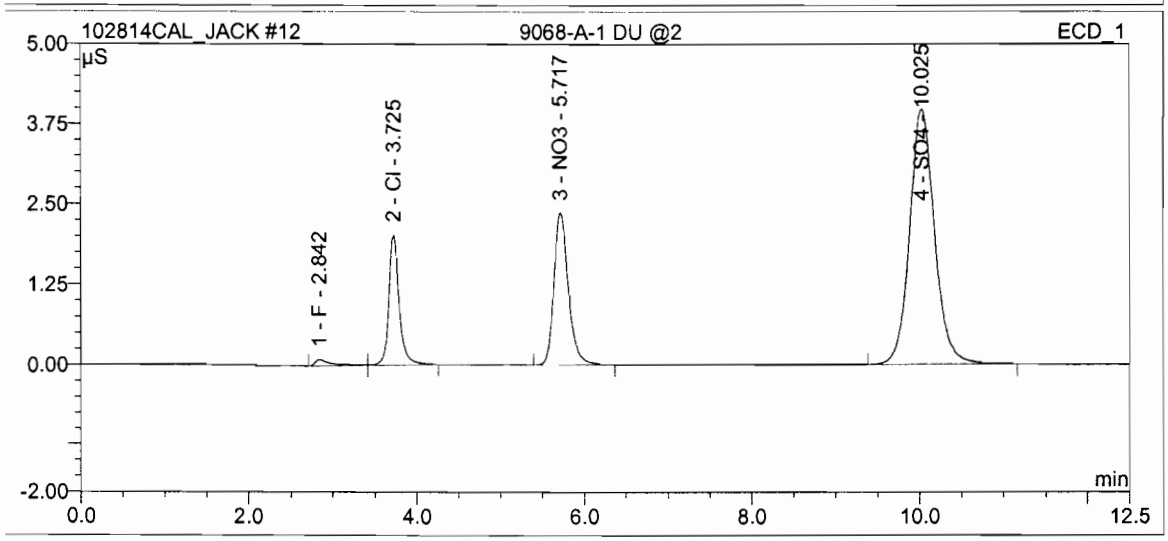


Integration Report - ECD_1

Sample Name:	**9068-A-1 DU @2**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**28.10.14 19:41**	*Run Time:*	**12.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.84	F	BM	0.024	0.100	60.0488
2	3.73	Cl	MB	0.289	2.025	907.2234
3	5.72	NO3	BMB	0.474	2.360	705.0253
4	10.03	SO4	BMB	1.369	3.973	6140.0060
		TOTAL:		2.16	8.46	7812.30

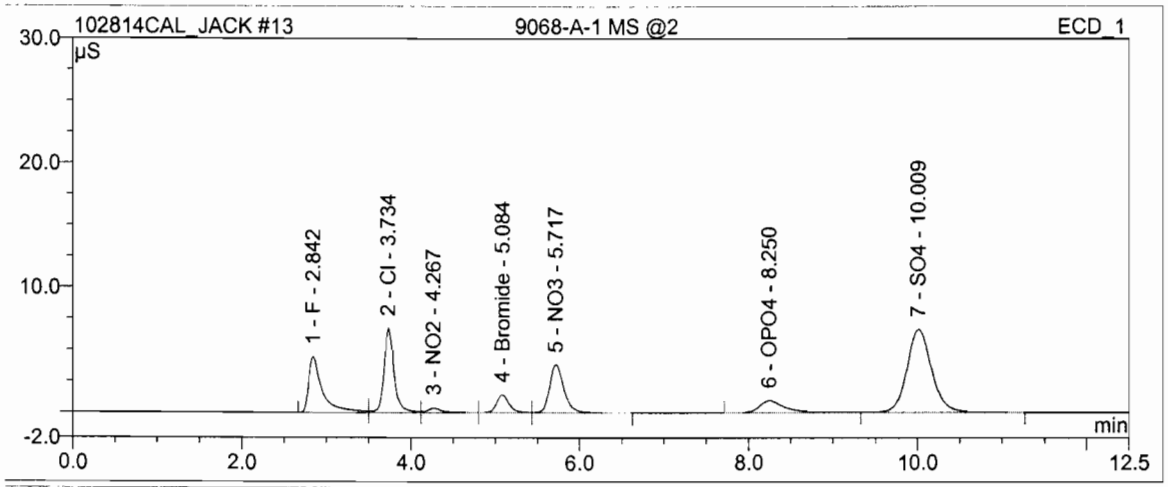


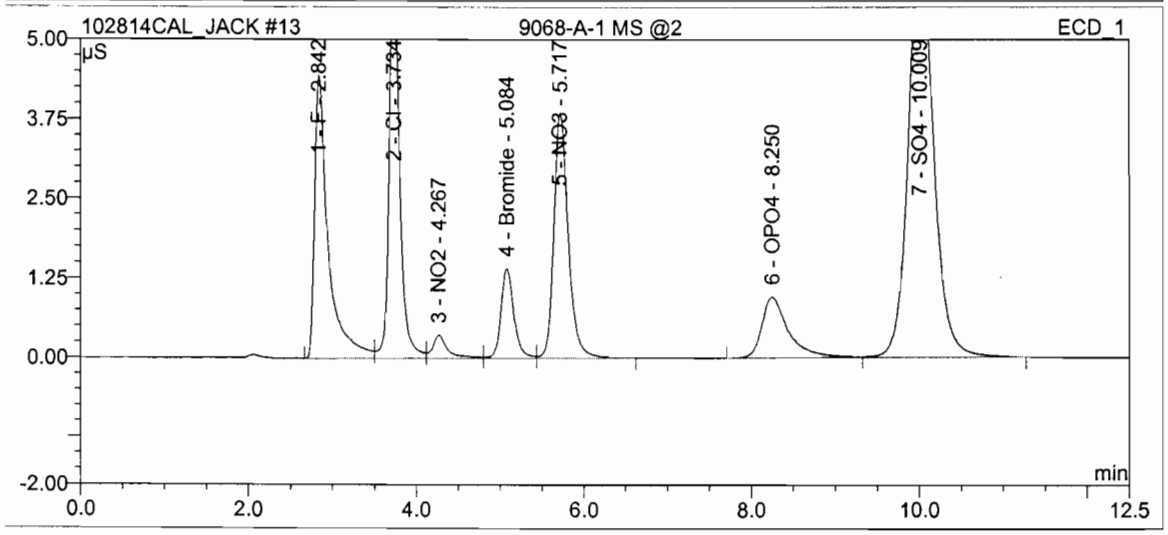


Integration Report - ECD_1

Sample Name:	**9068-A-1 MS @2**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**28.10.14 19:56**	*Run Time:*	**12.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.84	F	BM	0.836	4.445	2108.6727
2	3.73	Cl	M	0.926	6.745	2905.6809
3	4.27	NO2	M	0.076	0.364	163.3592
4	5.08	Bromide	M	0.252	1.409	2063.7361
5	5.72	NO3	MB	0.768	3.848	1144.0450
6	8.25	OPO4	Ru	0.346	0.952	4341.8892
7	10.01	SO4	BMB	2.293	6.655	10281.2461
		TOTAL:		5.50	24.42	23008.63





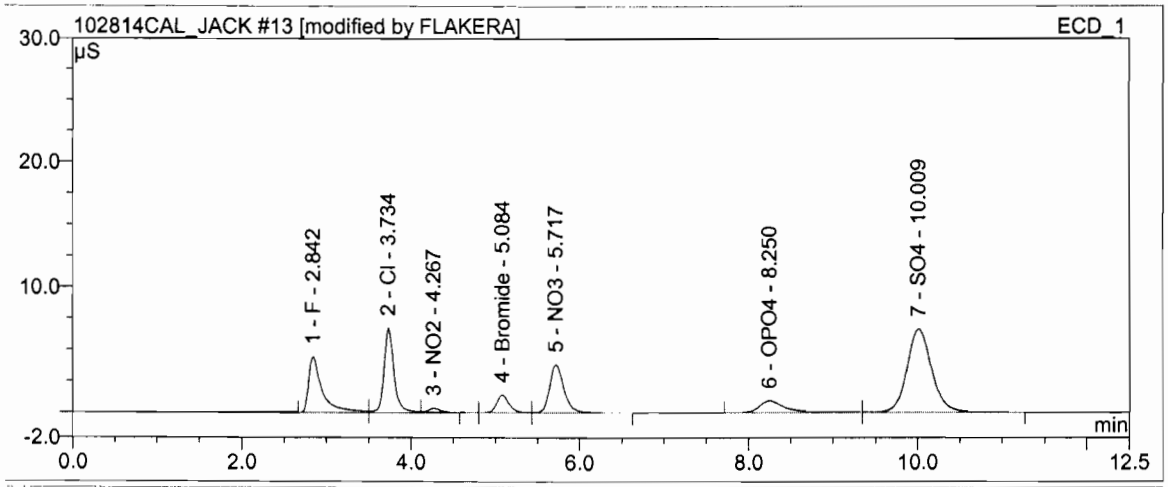
MI
AF 11-13-14

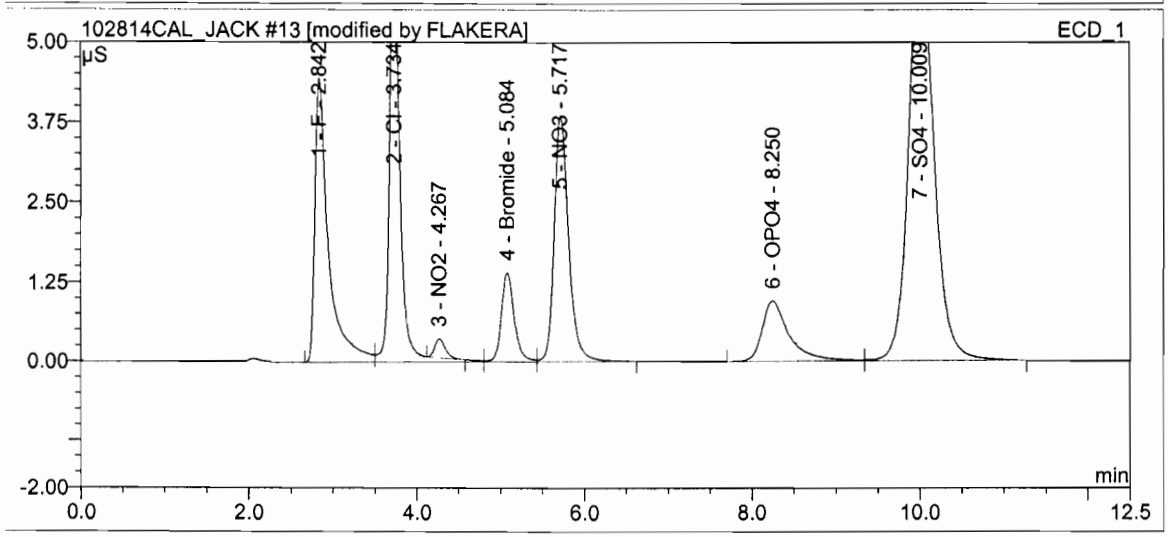
8 SO4, OPO4, Cl, NO2, SO4

Integration Report - ECD_1

Sample Name:	**9068-A-1 MS @2**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**28.10.14 19:56**	*Run Time:*	**12.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.84	F	BM	0.836	4.445	2108.6727
2	3.73	Cl	M *	0.959	6.745	3008.1146
3	4.27	NO2	Rd*	0.043	0.296	93.0128
4	5.08	Bromide	M	0.252	1.409	2063.7361
5	5.72	NO3	MB	0.768	3.848	1144.0450
6	8.25	OPO4	BM *	0.359	0.957	4504.2065
7	10.01	SO4	MB*	2.280	6.655	10223.3168
		TOTAL:		5.50	24.36	23145.10

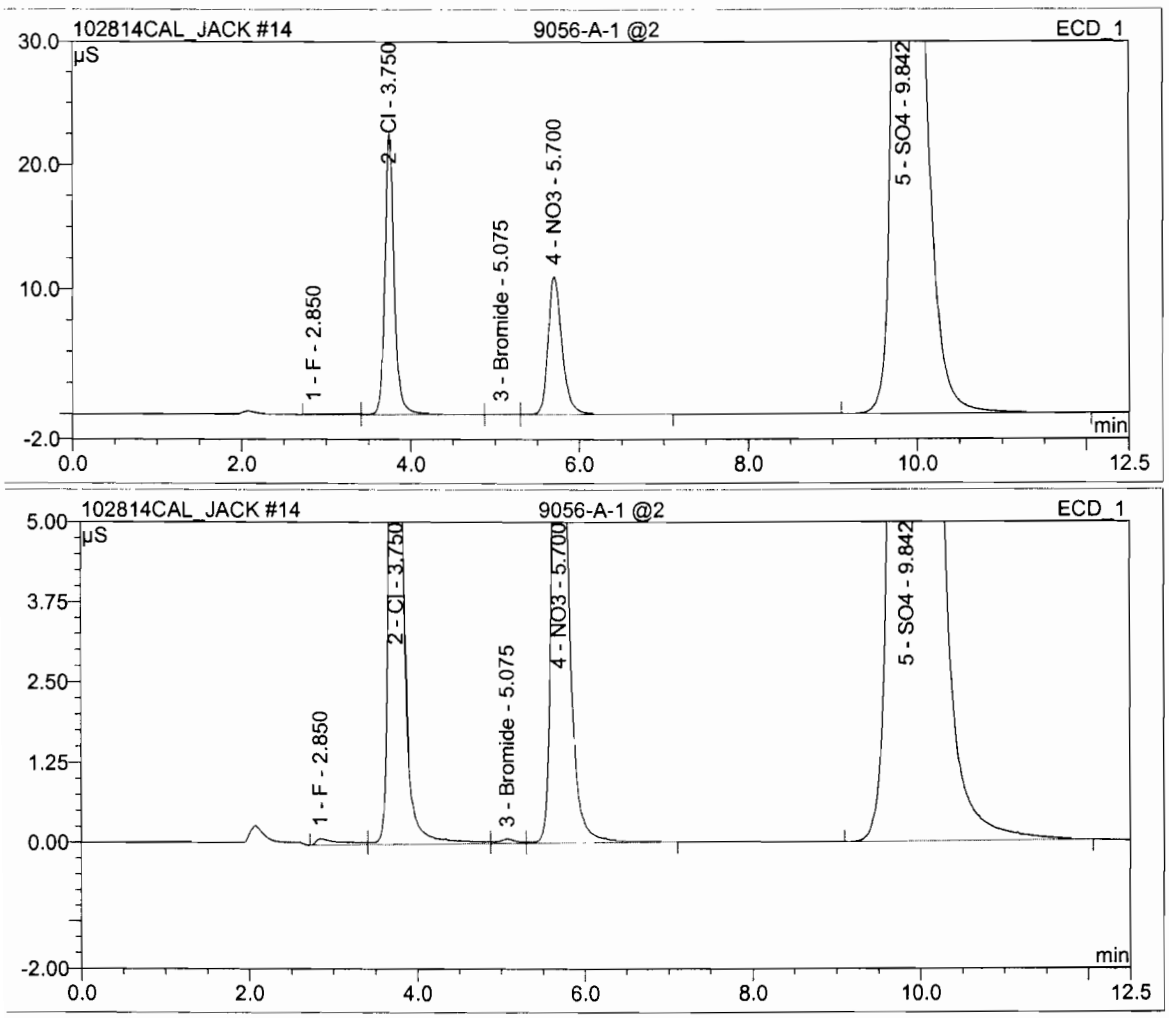




Integration Report - ECD_1

Sample Name:	9065 ~~9056-A-1 @2~~ AP 11-13-14	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**28.10.14 20:11**	*Run Time:*	**12.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.85	F	BM	0.036	0.103	91.6648
2	3.75	Cl	M	2.920	22.561	9162.2463
3	5.08	Bromide	M	0.018	0.073	149.5961
4	5.70	NO3	MB	2.152	11.052	3204.9310
5	9.84	SO4	BMB	31.346	89.402	140559.2879
		TOTAL:		36.47	123.19	153167.73



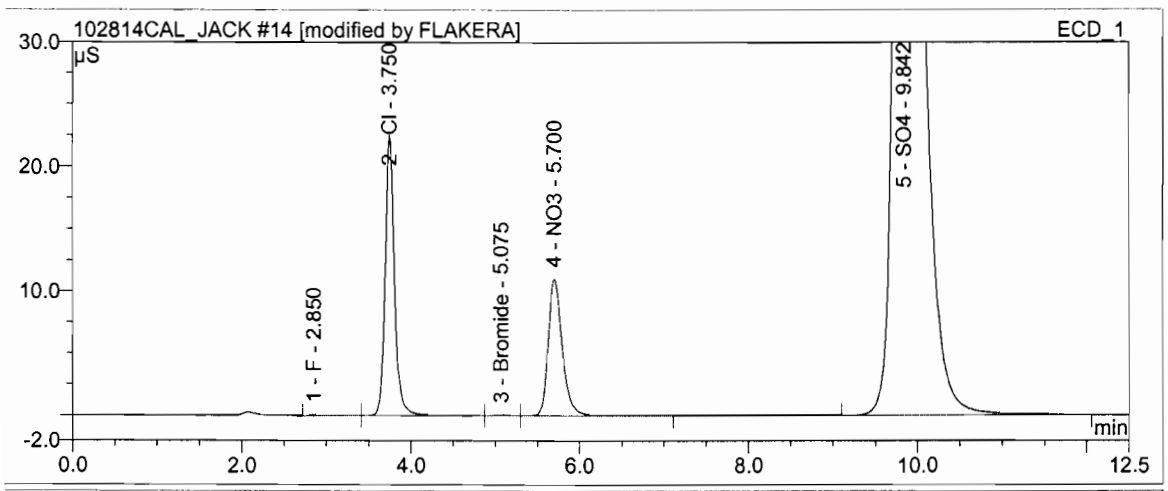
MT AP 11-13-14

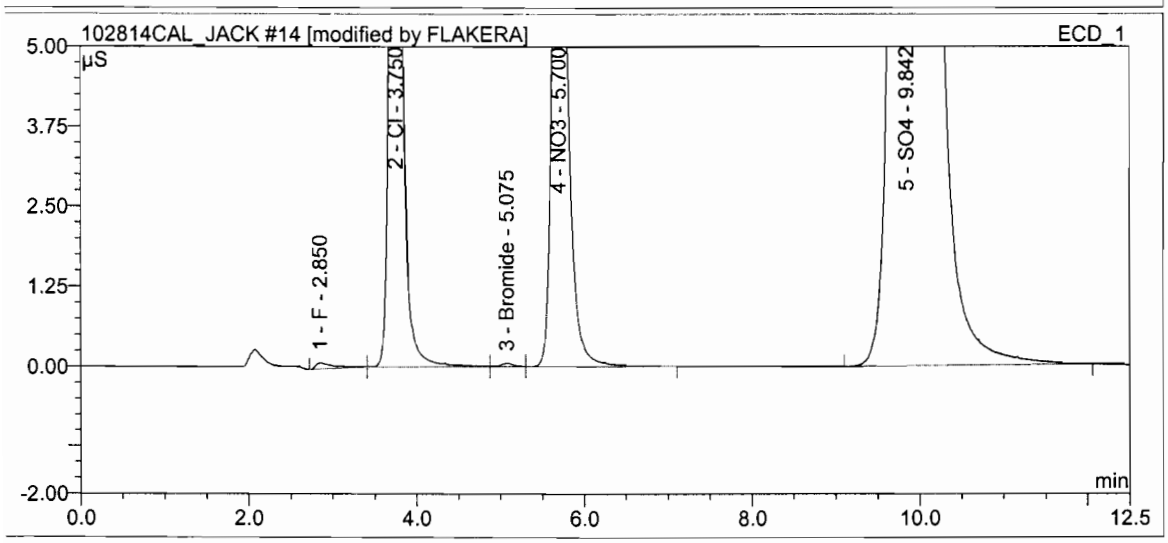
F, Cl, NO3, Br

Integration Report - ECD_1

Sample Name:	~~9056~~ 9065 ~~-A-1~~ @2	*Inj. Vol.:*	**50.0**
Sample Type:	AS 11-12-14 **unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**28.10.14 20:11**	*Run Time:*	**12.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.85	F	BMb*	0.024	0.096	59.6340
2	3.75	Cl	bM *	2.877	22.528	9026.7579
3	5.08	Bromide	M *	0.010	0.053	79.7874
4	5.70	NO3	MB*	2.136	11.038	3180.7658
5	9.84	SO4	BMB	31.346	89.402	140559.2879
		TOTAL:		36.39	123.12	152906.23

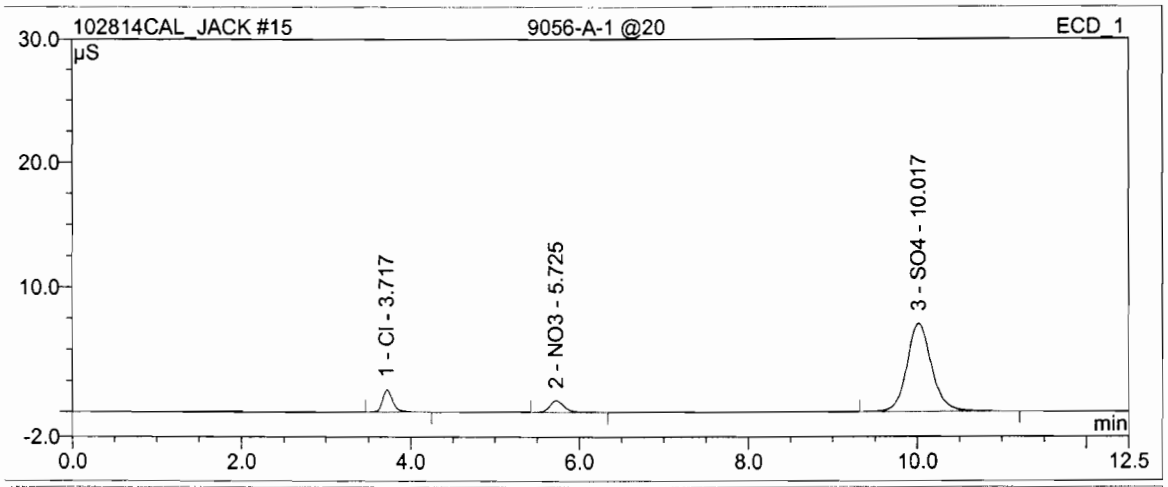


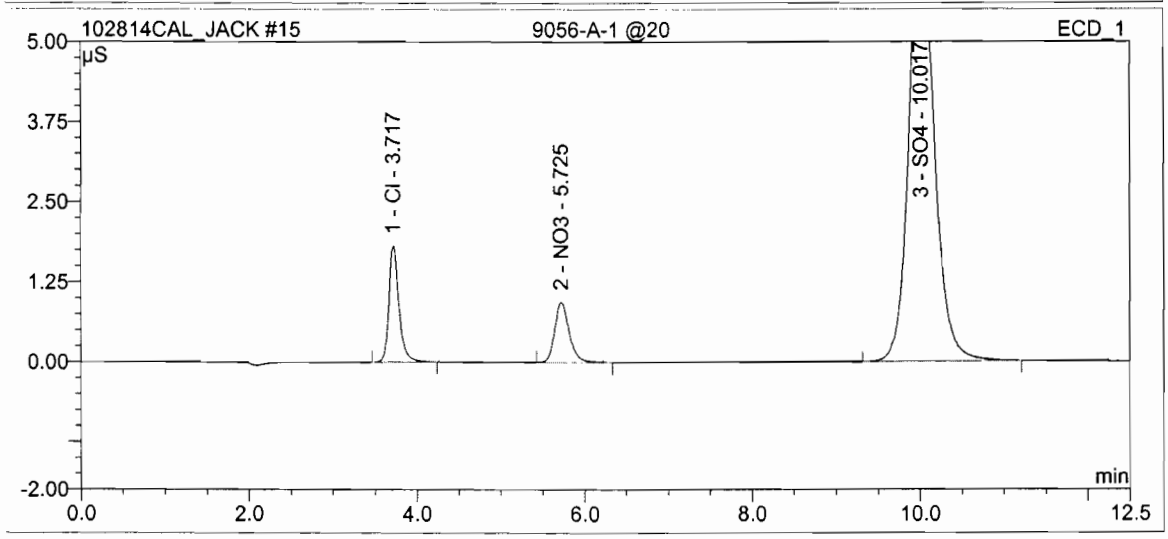


Integration Report - ECD_1

Sample Name:	9065 ~~9056~~-A-1 @20 AE 11-13-14	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**28.10.14 20:26**	*Run Time:*	**12.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	3.72	Cl	BMB	0.254	1.812	798.2441
2	5.73	NO3	BMB	0.191	0.943	284.9813
3	10.02	SO4	BMB	2.408	7.062	10796.8903
		TOTAL:		2.85	9.82	11880.12

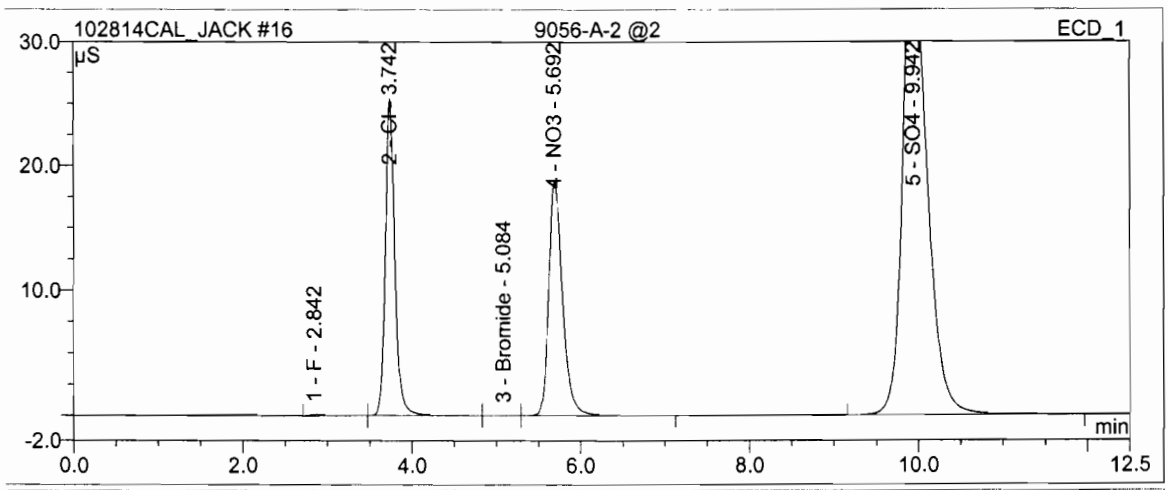


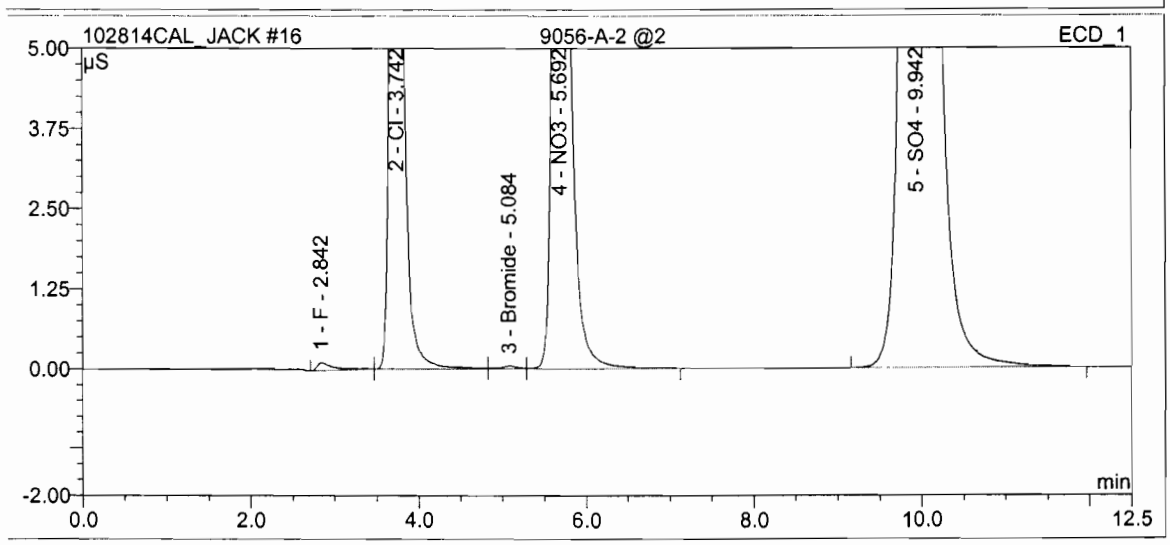


Integration Report - ECD_1

Sample Name:	9065 ~~9056~~-A-2 @2 AF 11-13-14	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**28.10.14 20:41**	*Run Time:*	**12.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.84	F	BMB	0.029	0.125	72.6990
2	3.74	Cl	bM	3.295	25.412	10336.4124
3	5.08	Bromide	M	0.010	0.043	81.1772
4	5.69	NO3	MB	3.577	18.730	5325.4895
5	9.94	SO4	BMB	12.727	38.377	57067.1206
		TOTAL:		19.64	82.69	72882.90

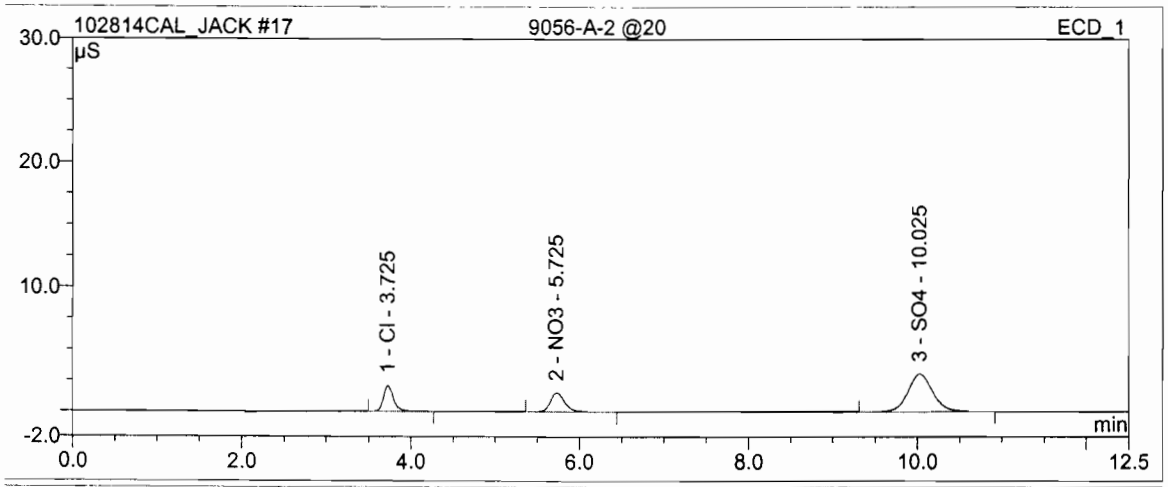


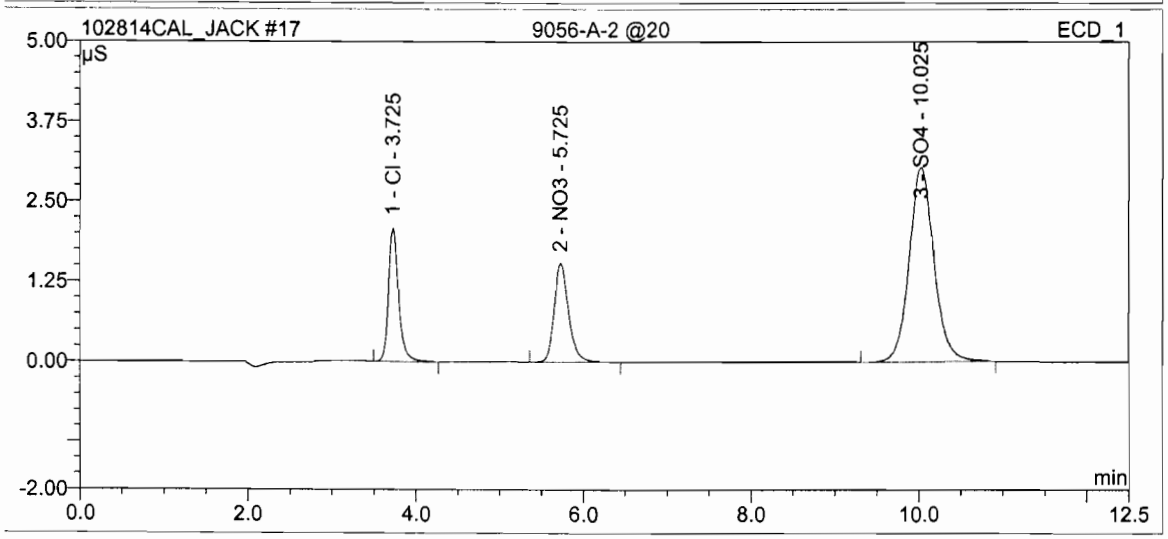


Integration Report - ECD_1

Sample Name:	9065 ~~9056~~-A-2 @20 AF 11-13-14	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**28.10.14 20:56**	*Run Time:*	**12.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	3.73	Cl	BMB	0.291	2.082	911.5667
2	5.73	NO3	BMB	0.309	1.536	460.1768
3	10.03	SO4	BMB	1.048	3.032	4700.7926
		TOTAL:		1.65	6.65	6072.54

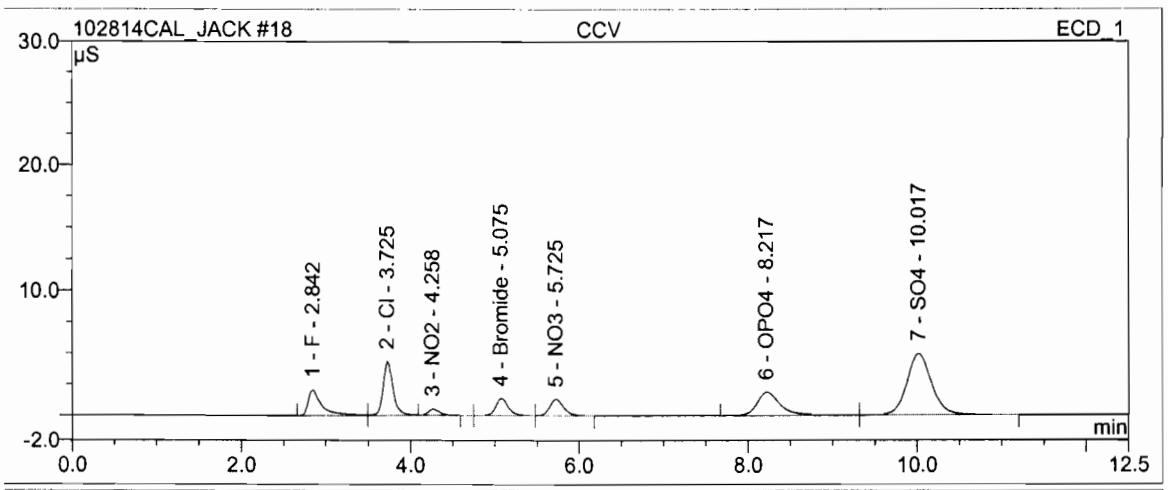


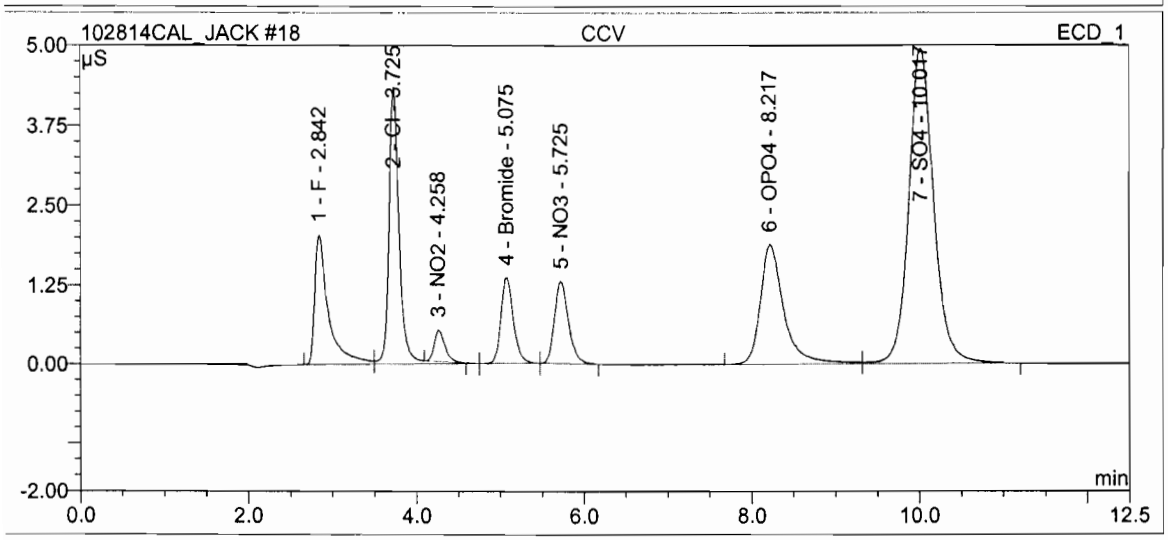


Integration Report - ECD_1

Sample Name:	**CCV**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**28.10.14 21:11**	*Run Time:*	**12.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.84	F	BM	0.391	2.048	986.0363
2	3.73	Cl	Mb	0.615	4.341	1930.9693
3	4.26	NO2	Rd	0.074	0.510	159.9479
4	5.08	Bromide	bMb	0.235	1.362	1928.2724
5	5.73	NO3	bMB	0.254	1.302	377.7504
6	8.22	OPO4	BM	0.620	1.897	7784.5882
7	10.02	SO4	MB	1.708	4.935	7657.3973
		TOTAL:		3.90	16.40	20824.96

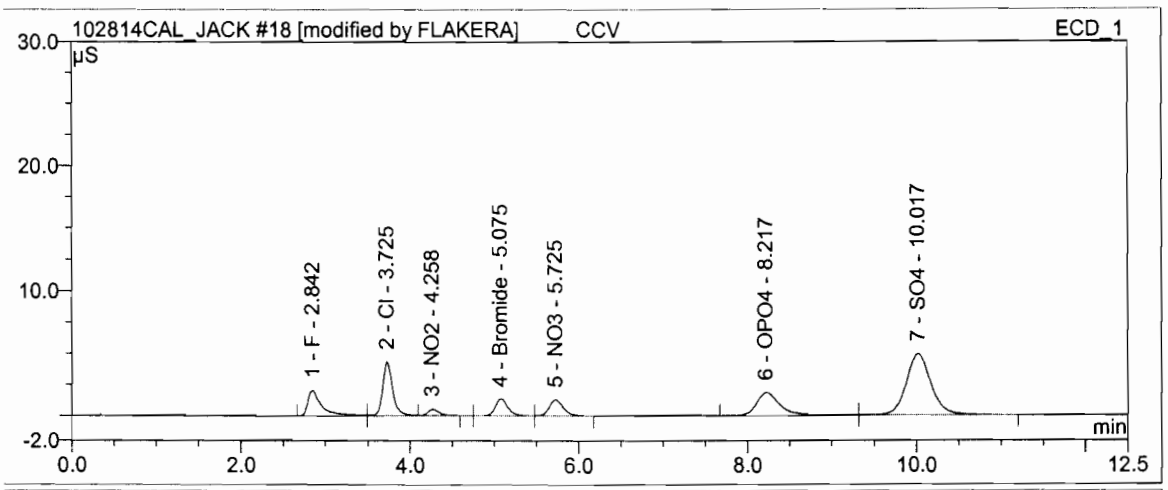


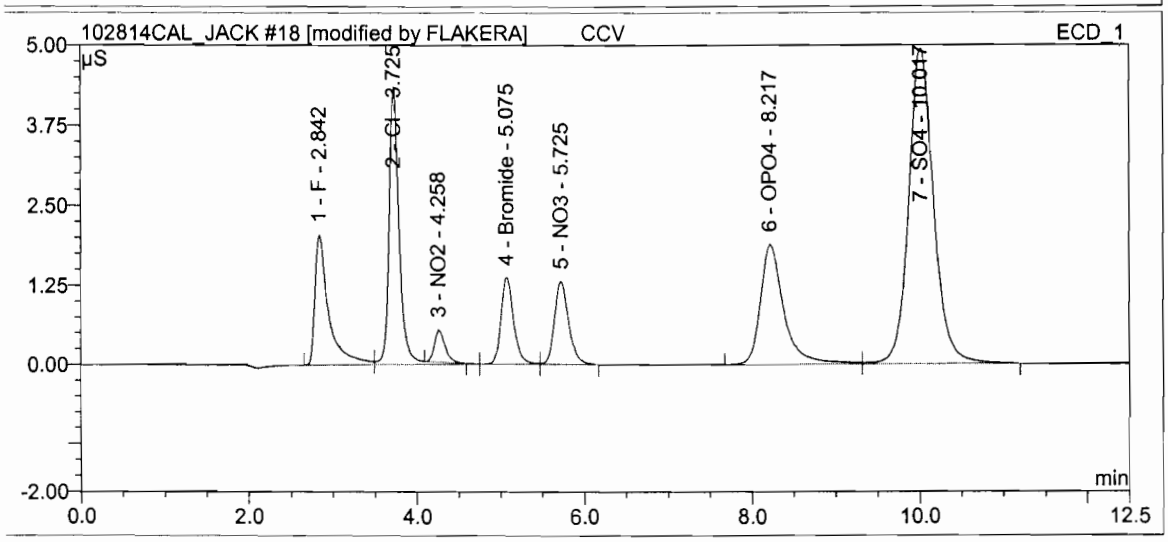


Integration Report - ECD_1

Sample Name:	**CCV**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**28.10.14 21:11**	*Run Time:*	**12.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.84	F	BM	0.391	2.048	986.0363
2	3.73	Cl	Mb	0.615	4.341	1930.9693
3	4.26	NO2	Rd	0.074	0.510	159.9479
4	5.08	Bromide	bM *	0.240	1.368	1964.9890
5	5.73	NO3	MB*	0.258	1.310	384.1957
6	8.22	OPO4	BM	0.620	1.897	7784.5882
7	10.02	SO4	MB	1.708	4.935	7657.3973
		TOTAL:		3.91	16.41	20868.12

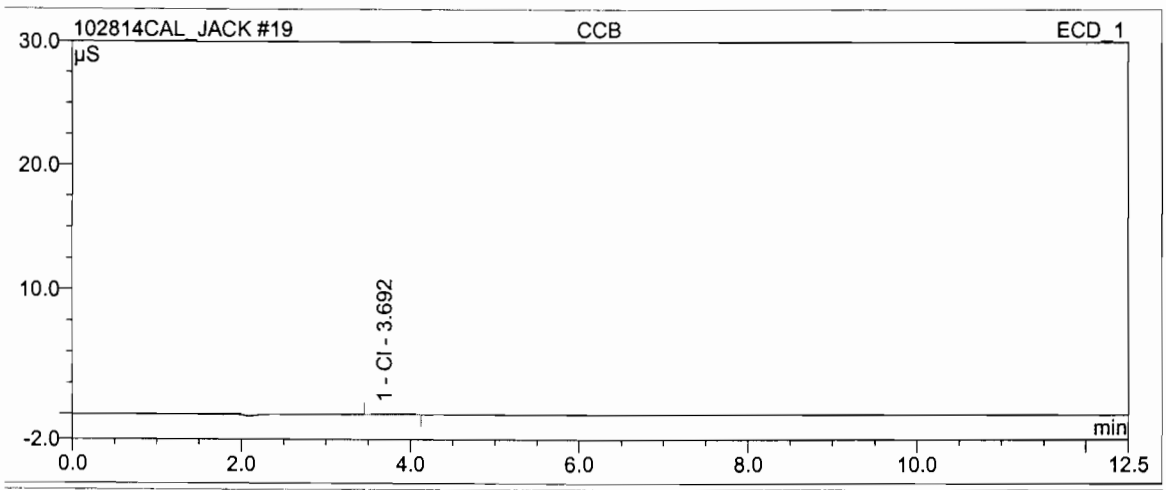


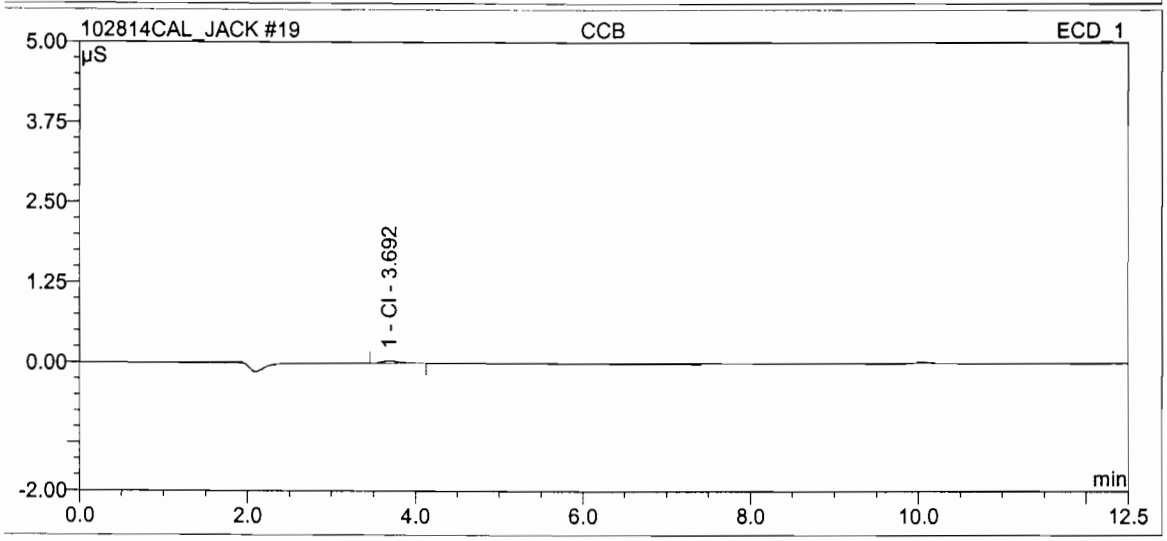


Integration Report - ECD_1

Sample Name:	**CCB**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**28.10.14 21:26**	*Run Time:*	**12.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	3.69	Cl	BMB	0.010	0.038	31.9638
		TOTAL:		0.01	0.04	31.96

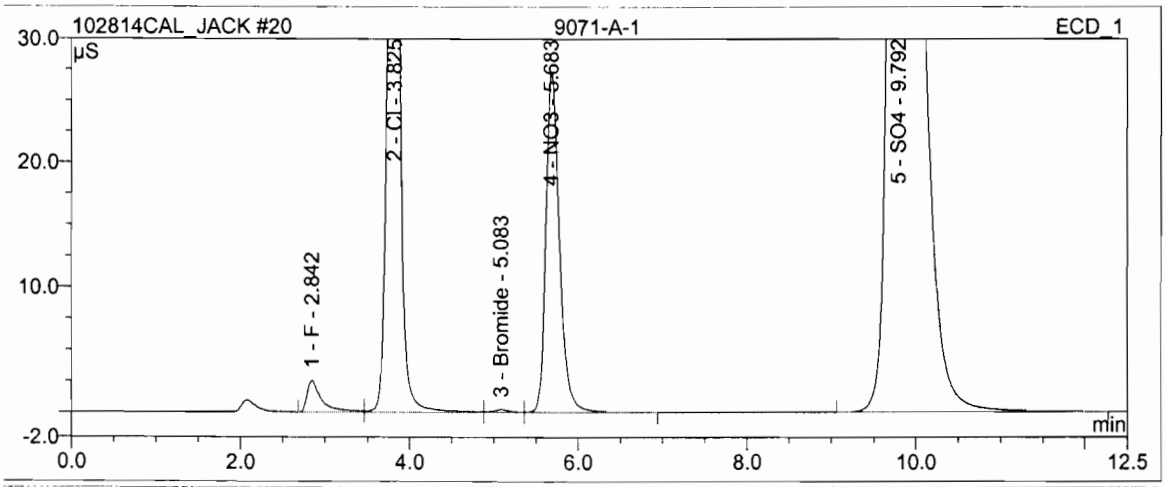


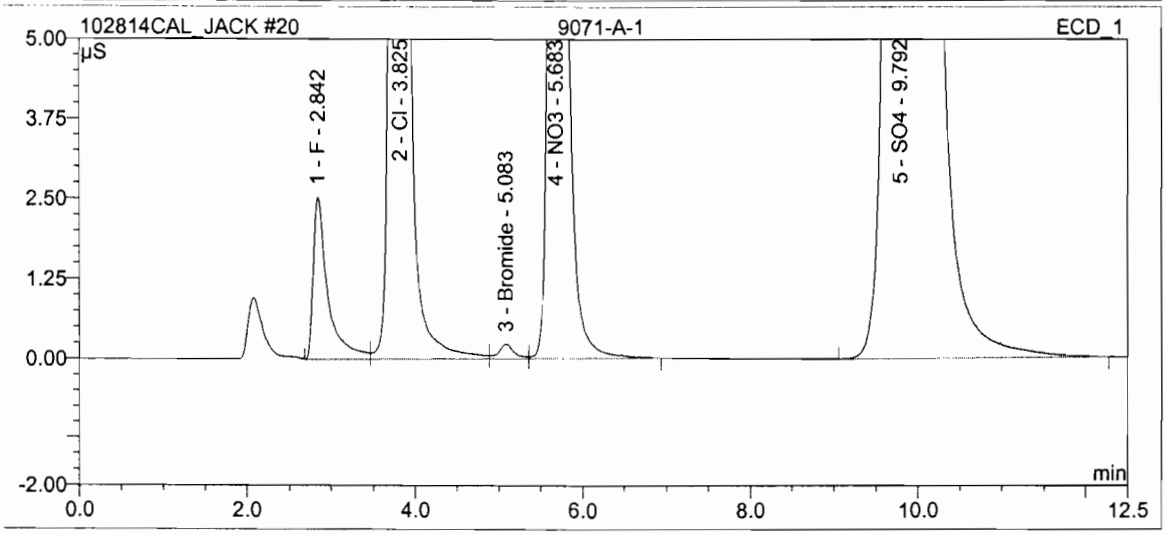


Integration Report - ECD_1

Sample Name:	**9071-A-1**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**28.10.14 21:41**	*Run Time:*	**12.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.84	F	BM	0.516	2.527	1302.2771
2	3.83	Cl	M	12.431	94.637	39002.1610
3	5.08	Bromide	M	0.048	0.229	394.8230
4	5.68	NO3	MB	5.102	27.371	7597.2155
5	9.79	SO4	BMB	42.628	116.701	191145.0042
		TOTAL:		60.73	241.46	239441.48

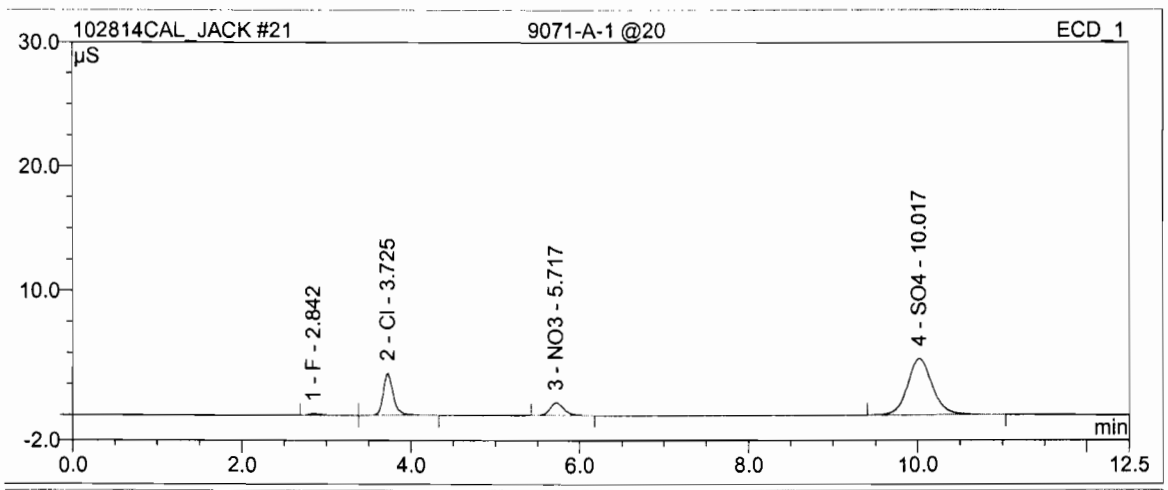


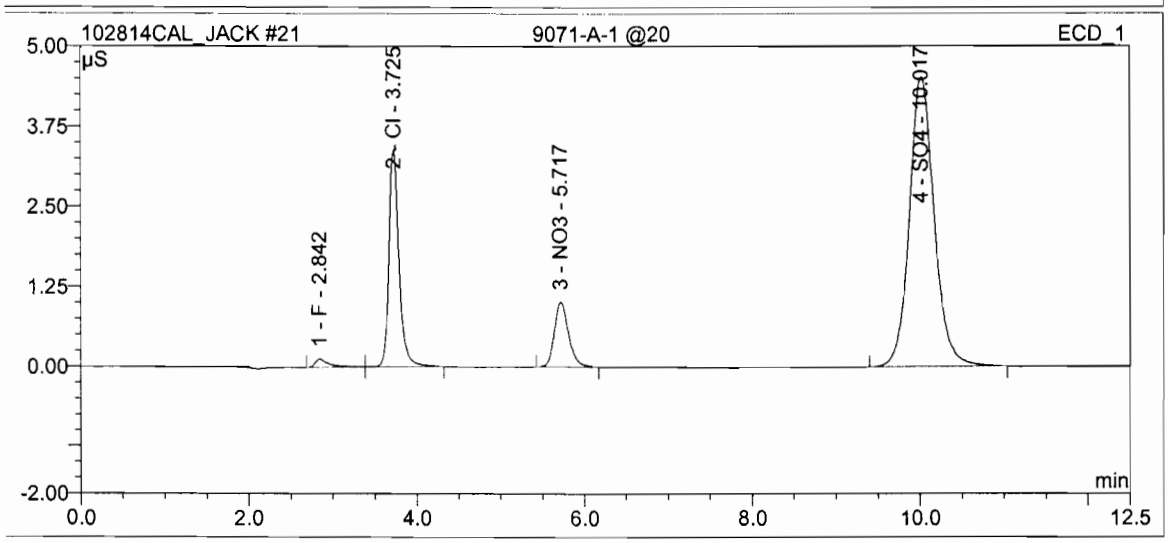


Integration Report - ECD_1

Sample Name:	**9071-A-1 @20**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**28.10.14 21:56**	*Run Time:*	**12.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.84	F	BM	0.024	0.127	61.1623
2	3.73	Cl	MB	0.467	3.392	1466.2305
3	5.72	NO3	BMB	0.199	1.011	296.7360
4	10.02	SO4	BMB	1.552	4.518	6959.0341
		TOTAL:		2.24	9.05	8783.16

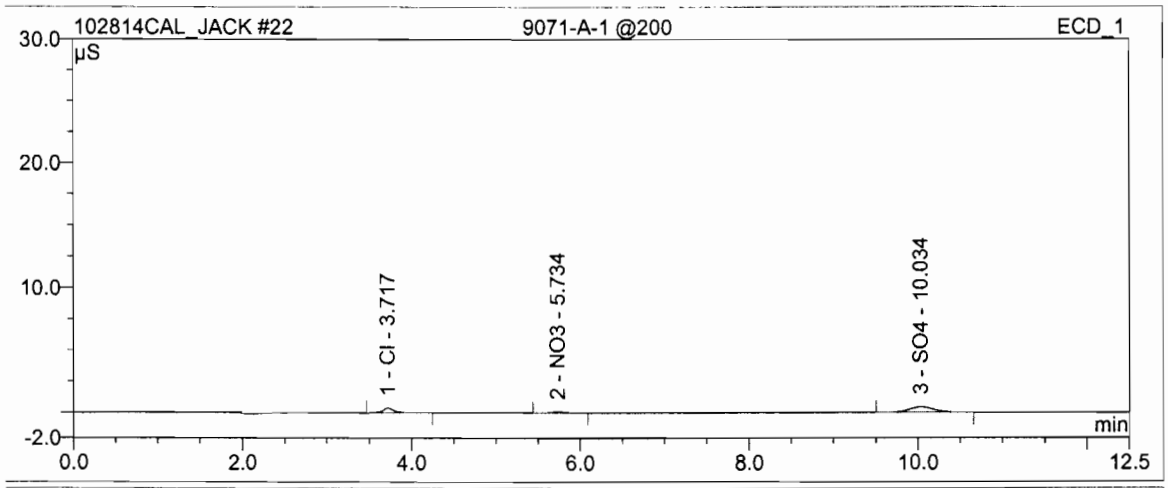


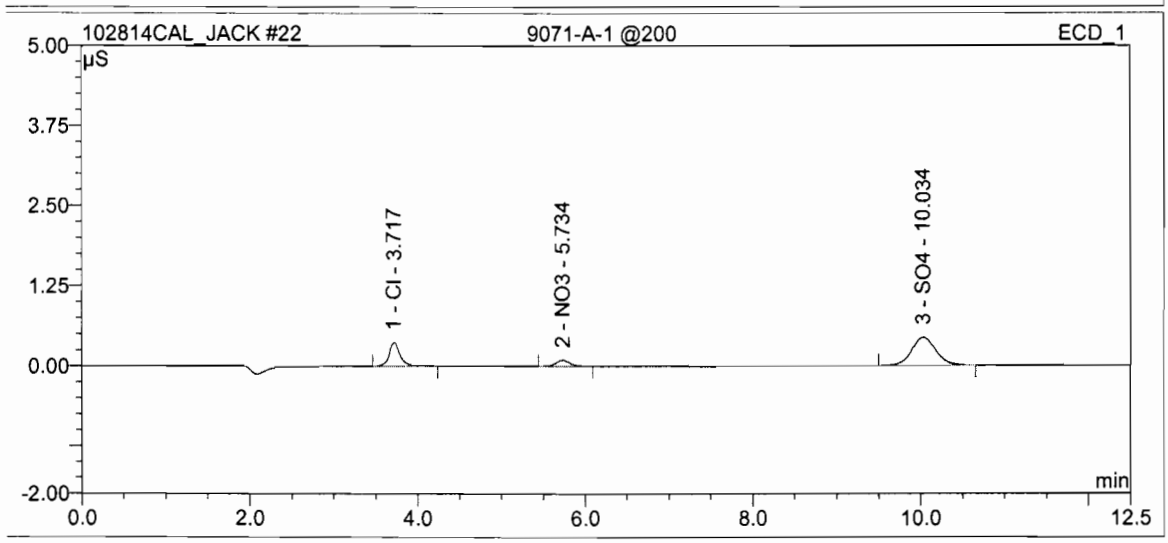


Integration Report - ECD_1

Sample Name:	**9071-A-1 @200**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**28.10.14 22:11**	*Run Time:*	**12.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	3.72	Cl	BMB	0.059	0.371	184.8571
2	5.73	NO3	BMB	0.019	0.097	27.9098
3	10.03	SO4	BMB	0.150	0.440	672.7512
		TOTAL:		0.23	0.91	885.52

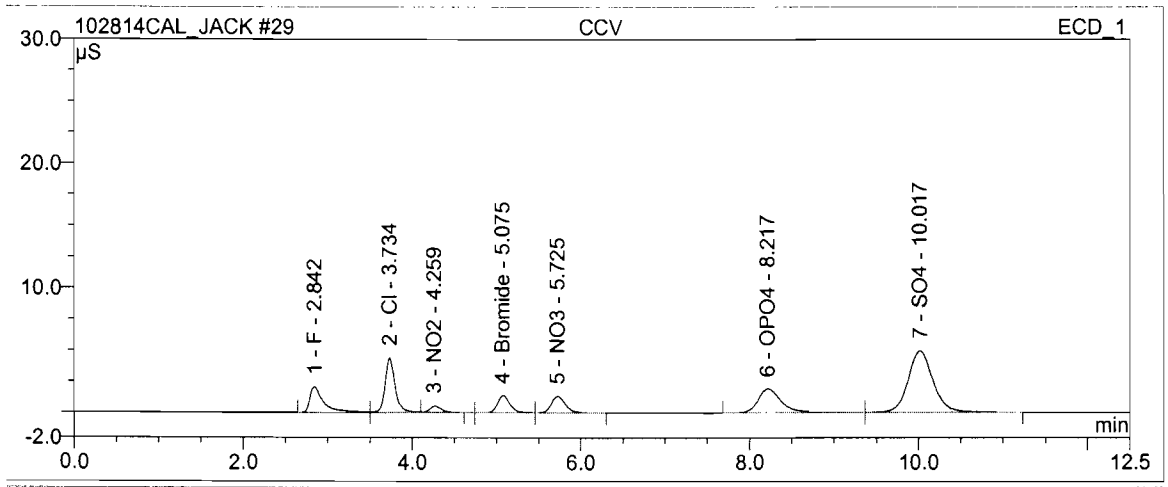


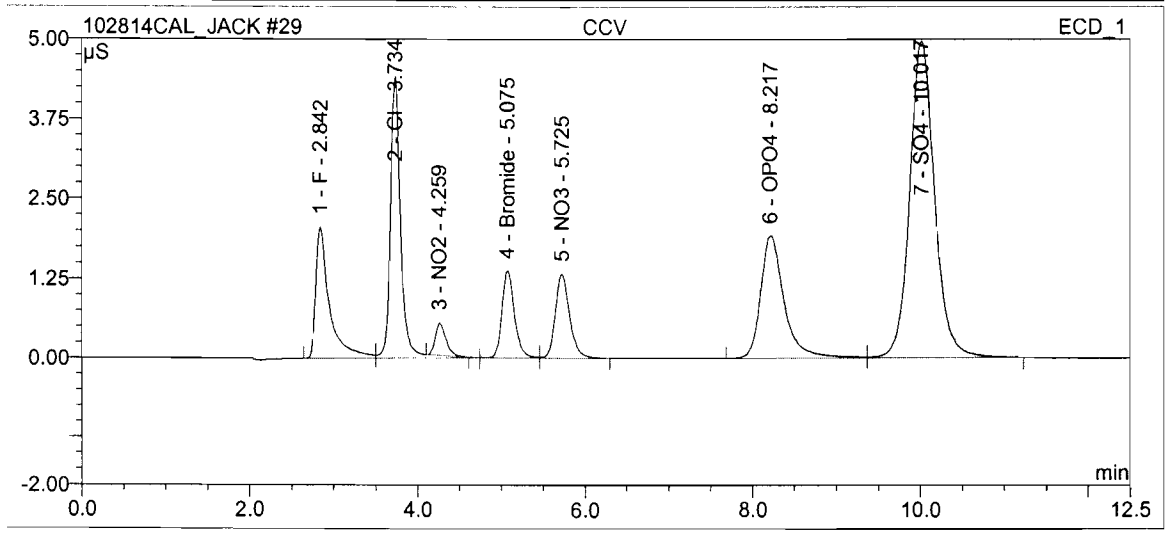


Integration Report - ECD_1

Sample Name:	**CCV**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**28.10.14 23:55**	*Run Time:*	**12.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.84	F	BM	0.391	2.058	985.3492
2	3.73	Cl	Mb	0.623	4.410	1954.2814
3	4.26	NO2	Rd	0.075	0.514	162.2207
4	5.08	Bromide	bM	0.239	1.370	1953.3228
5	5.73	NO3	MB	0.263	1.323	392.0728
6	8.22	OPO4	BM	0.629	1.923	7900.7307
7	10.02	SO4	MB	1.708	4.955	7660.9895
		TOTAL:		3.93	16.55	21008.97

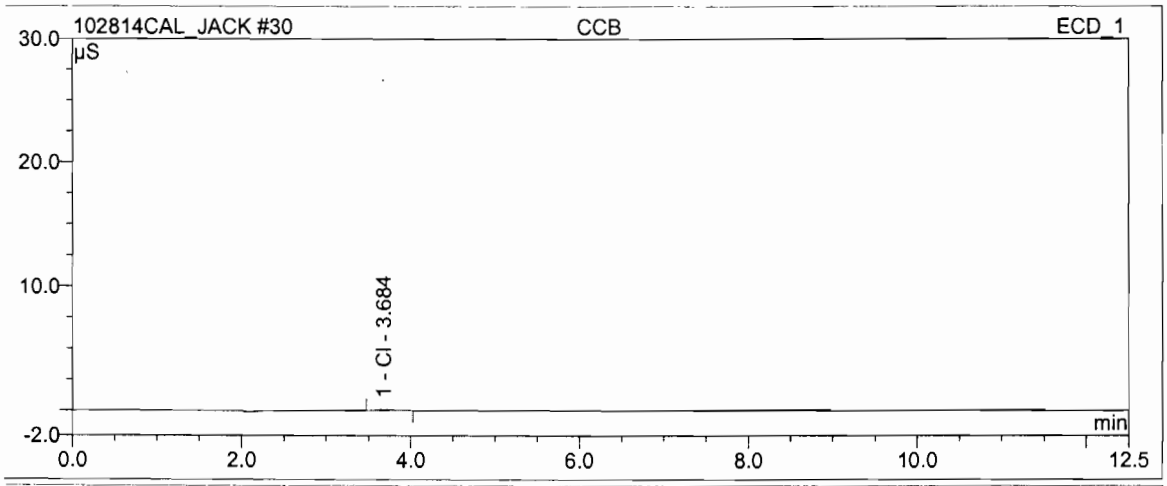


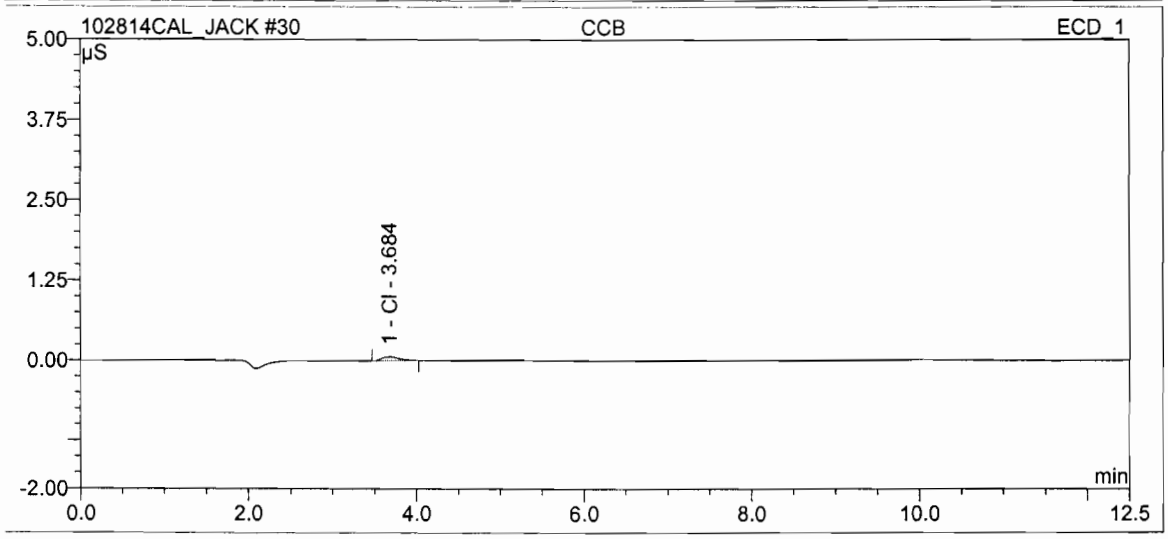


Integration Report - ECD_1

Sample Name:	**CCB**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**29.10.14 00:10**	*Run Time:*	**12.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	3.68	Cl	BMB	0.015	0.060	46.3441
		TOTAL:		0.01	0.06	46.34





GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Batch Number: 153305 Batch Start Date: 11/04/14 07:00 Batch Analyst: Trickle, Brittany A

Batch Method: 310.1 Batch End Date: 11/04/14 10:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	Initial pH	BuretStart1	BuretStop1	TitrantVolume1	BuretStart2
MB 160-153305/1		310.1		200 mL	7.98 SU	0 mL	0 mL	0 mL	0 mL
LCS 160-153305/2		310.1		50 mL	9.92 SU	0 mL	0 mL	0 mL	0 mL
HLCS 160-153305/3		310.1		50 mL	10.09 SU	0 mL	0 mL	0 mL	0 mL
160-9071-A-1	SMC-09-20141027-21	310.1	T	50 mL	7.86 SU	0 mL	0 mL	0 mL	0 mL

Lab Sample ID	Client Sample ID	Method Chain	Basis	BuretStop2	TitrantVolume2	CalcMsg	carb	hydr	bCarb
MB 160-153305/1		310.1		.5 mL	0.5 mL	Case 1	0 mg/L	0 mg/L	10 mg/L
LCS 160-153305/2		310.1		9.1 mL	9.1 mL	Case 1	0 mg/L	0 mg/L	182 mg/L
HLCS 160-153305/3		310.1		18.5 mL	18.5 mL	Case 1	0 mg/L	0 mg/L	370 mg/L
160-9071-A-1	SMC-09-20141027-21	310.1	T	8.9 mL	8.9 mL	Case 1	0 mg/L	0 mg/L	178 mg/L

Lab Sample ID	Client Sample ID	Method Chain	Basis	pAlk	tAlk	FinalAmount	Alk Int. 00009		
MB 160-153305/1		310.1		0 mg/L	10 mg/L	50 mL			
LCS 160-153305/2		310.1		0 mg/L	182 mg/L	50 mL	10 mL		
HLCS 160-153305/3		310.1		0 mg/L	370 mg/L	50 mL	20 mL		
160-9071-A-1	SMC-09-20141027-21	310.1	T	0 mg/L	178 mg/L	50 mL			

Batch Notes	
pH Buffer 1 ID	455799
pH Buffer 2 ID	455802
pH Buffer 3 ID	455801
First End time	11/04/14 10:00
Nominal Amount Used	50 mL
Probe ID	5 Star #4
First Start time	11/04/14 07:00
Normality of first Titrant	.02 N

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Batch Number: 153305 Batch Start Date: 11/04/14 07:00 Batch Analyst: Trickle, Brittany A

Batch Method: 310.1 Batch End Date: 11/04/14 10:00

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Batch Number: 152486 Batch Start Date: 10/29/14 06:00 Batch Analyst: Mcnutt, Joe W

Batch Method: 150.1 Batch End Date: 10/29/14 08:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	FinalAmount	SampleTemp	pHRead1	TempRead1	pHRead2	TempRead2
ICV 160-152486/4		150.1		20 mL	21.0 Celsius	7.06 SU	21.0 Celsius	7.05 SU	21.0 Celsius
LCS 160-152486/5		150.1		20 mL	21.0 Celsius	7.06 SU	21.0 Celsius	7.05 SU	21.0 Celsius
160-9071-A-1	SMC-09-20141027-21	150.1	T	20 mL	21.0 Celsius	7.81 SU	21.0 Celsius	7.83 SU	21.0 Celsius
CCV 160-152486/10		150.1		20 mL	21.0 Celsius	7.06 SU	21.0 Celsius	7.05 SU	21.0 Celsius

Lab Sample ID	Client Sample ID	Method Chain	Basis	CalcMsg	PH Buffer 7 00048				
ICV 160-152486/4		150.1		Read 2 Pass	20 mL				
LCS 160-152486/5		150.1		Read 2 Pass	20 mL				
160-9071-A-1	SMC-09-20141027-21	150.1	T	Read 2 Pass					
CCV 160-152486/10		150.1		Read 2 Pass	20 mL				

Batch Notes	
pH Buffer 1 ID	442694
pH Buffer 2 ID	442695
pH Buffer 3 ID	442693
pH Buffer 4 ID	358781
Calibration Date and Time	10/29/14 6:00
Electronic Slope	100.6
Instrument ID	A111
Pipette ID	TCLP #5
Sufficient volume for sample dup	YES
ID number of the thermometer	0801024473

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Batch Number: 154285 Batch Start Date: 11/03/14 10:20 Batch Analyst: Trickle, Brittany A

Batch Method: 160.1 Batch End Date: 11/05/14 16:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	TareWeight	Weight1	Weight2	Weight3	WeightOne%Diff
MB 160-154285/1		160.1		100 mL	92.0724 g	92.0724 g	92.0723 g	0 g	PASS_D
LCS 160-154285/2		160.1		100 mL	63.9699 g	64.0239 g	64.0242 g	0 g	PASS_D
160-9071-C-1	SMC-09-20141027-21	160.1	T	100 mL	82.3275 g	82.3803 g	82.3804 g	0 g	PASS_D

Lab Sample ID	Client Sample ID	Method Chain	Basis	Residue	Residue2	FinalAmount	TDS LCS 00036		
MB 160-154285/1		160.1		0.00000 g	-0.00010 g	100 mL			
LCS 160-154285/2		160.1		0.05400 g	0.05430 g	100 mL	100 mL		
160-9071-C-1	SMC-09-20141027-21	160.1	T	0.05280 g	0.05290 g	100 mL			

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Batch Number: 154285 Batch Start Date: 11/03/14 10:20 Batch Analyst: Trickle, Brittany A

Batch Method: 160.1 Batch End Date: 11/05/14 16:00

Batch Notes	
Balance ID	1123051741
Constant Weight (WT2) Date/Time in Oven	11/5/14 15:00
Constant Weight (WT2) Date/Time Out	11/5/14 16:00
Constant Weight (WT2) Temp In	183 Celsius
Constant Weight (WT2) Temp Out	183 Celsius
Uncorrected CW (Wt2) Temp In	183 Celsius
Uncorrected CW (Wt2) Temp Out	183 Celsius
Corrected Temperature in Oven	103 Celsius
Corrected Temperature out of Oven	103 Celsius
Date/Time Samples placed in Oven	11/3/14 11:30
Date/Time Samples removed from Oven	11/4/14 10:30
Nominal Amount Used	100 mL
Oven ID	4; 1
Oven Temperature Verification	103 Celsius
ID number of the thermometer	0817; 0666
Uncorrected In Temperature	103 Celsius
Uncorrected Out Temperature	103 Celsius
Weight(WT1) Start Date/Time	11/4/14 10:30
Weight(WT1) Date/Time Out	11/5/14 11:00
Weight(WT1) Start Temp	183 Celsius
Weight(WT1) Temp Out	183 Celsius
Uncorrected Weight(WT1) Start Temp	183 Celsius
Uncorrected Weight(WT1) Temp Out	183 Celsius

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Batch Number: 153094 Batch Start Date: 10/28/14 16:57 Batch Analyst: Flaker, Alicia M

Batch Method: 300.0 Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	IC 2nd Source 00006	IC Cal High 00030		
ICV 160-153094/7		300.0		5 mL	5 mL	2 mL			
ICB 160-153094/8		300.0		5 mL	5 mL				
MB 160-153094/9		300.0		5 mL	5 mL				
LCS 160-153094/10		300.0		5 mL	5 mL		2 mL		
CCV 160-153094/18		300.0		5 mL	5 mL		2 mL		
CCB 160-153094/19		300.0		5 mL	5 mL				
160-9071-A-1	SMC-09-20141027-21	300.0	T	5 mL	5 mL				
160-9071-A-1 ^20	SMC-09-20141027-21	300.0	T	5 mL	5 mL				
CCV 160-153094/29		300.0		5 mL	5 mL		2 mL		
CCB 160-153094/30		300.0		5 mL	5 mL				

Batch Notes	
Balance ID	1123051741
Eluent 1 Lot	475672
Pipette ID	IC-3, IC-5, WC001

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

ALPHA SPECTROSCOPY

Method A-01-R Th

Isotopic Thorium (Alpha Spectrometry) by Method A-01-R

Prep Batch: 154805

Preparation, Extraction Chromatography Resin Actinide Separation

Alpha Spectroscopy Analysis Detail Report
Prep Batch: 154805

Lab ID: MB 160-154805/1-A
Client ID:
Sigma: 2
Analyzed: 11/07/14 17:41
Detector: AV116
Dil Fac: 1
Decay Corrected: No
Yield Truncated: No
Ts: 400

Analyte	MB Result	Count Unc	Total Unc	Qualifier	Unit	RL	MDC	Anly Batch
Thorium-228	-0.006669	0.0133	0.0133	U	pCi/L	1.00	0.0885	154876
Thorium-230	0.2242	0.120	0.121		pCi/L	1.00	0.0480	154876
Thorium-232	0.02523	0.0470	0.0470	U	pCi/L	1.00	0.0881	154876
Thorium-227	-0.006653	0.0133	0.0133	U	pCi/L	1.00	0.0883	154876

Tracer	MB Result	Count Unc	Total Unc	Qualifier	Unit	MDC	Spike Added	% Rec	% Rec Limits
Thorium-229	6.318	0.460	0.702		pCi/L	0.0251	12.1	52.2	30 - 110

Lab ID: LCS 160-154805/2-A
Client ID:
Sigma: 2
Analyzed: 11/07/14 17:41
Detector: AV117
Dil Fac: 1
Decay Corrected: No
Yield Truncated: No
Ts: 400

Analyte	LCS Result	Count Unc	Total Unc	Qualifier	Unit	RL	MDC	Anly Batch
Thorium-230	15.27	1.00	1.63	*	pCi/L	1.00	0.0908	154877

Tracer	LCS Result	Count Unc	Total Unc	Qualifier	Unit	MDC	Spike Added	% Rec	% Rec Limits
Thorium-229	6.444	0.475	0.720		pCi/L	0.0575	12.1	53.2	30 - 110

Lab ID: LCSD 160-154805/3-A
Client ID:
Sigma: 2
Analyzed: 11/07/14 17:41
Detector: AV118
Dil Fac: 1
Decay Corrected: No
Yield Truncated: No
Ts: 400

Analyte	LCSD Result	Count Unc	Total Unc	Qualifier	Unit	RL	MDC	Anly Batch
Thorium-230	14.84	0.963	1.58	*	pCi/L	1.00	0.0468	154878

Tracer	LCSD Result	Count Unc	Total Unc	Qualifier	Unit	MDC	Spike Added	% Rec	% Rec Limits
Thorium-229	6.785	0.487	0.750		pCi/L	0.0484	12.1	56.0	30 - 110

Lab ID: 160-9071-1
Client ID: SMC-09-20141027-21
Sigma: 2
Analyzed: 11/07/14 17:41
Detector: AV56
Dil Fac: 1
Decay Corrected: No
Yield Truncated: No
Ts: 400

Analyte	Result	Count Unc	Total Unc	Qualifier	Unit	RL	MDC	Anly Batch
Thorium-228	0.0708	0.152	0.152	U	pCi/L	1.00	0.298	154917
Thorium-230	0.111	0.172	0.172	U *	pCi/L	1.00	0.299	154917
Thorium-232	0.0470	0.123	0.123	U	pCi/L	1.00	0.265	154917
Thorium-227	-0.0706	0.152	0.152	U	pCi/L	1.00	0.427	154917

Alpha Spectroscopy Analysis Detail Report
Prep Batch: 154805

Lab ID:	160-9071-1	Analyzed:	11/07/14 17:41	Decay Corrected:	No
Client ID:	SMC-09-20141027-21	Detector:	AV56	Yield Truncated:	No
Sigma:	2	Dil Fac:	1	Ts:	400

Tracer	Result	Count Unc	Total Unc	Qualifier	Unit	MDC	Spike Added	% Rec	% Rec Limits
Thorium-229	10.4	0.850	1.22		pCi/L	0.140	24.2	42.8	30 - 110

Quality Control Summary

Method Blank ID:	Analyte	Parent Result	Spike Added	MB Result	Qualifier	Unit	% Rec	% Rec Limits	RPD	RER	DER	RER Limit	Z Factor
MB 160-154805/1-A	Thorium-228			-0.006669	U	pCi/L							
MB 160-154805/1-A	Thorium-230			0.2242		pCi/L							
MB 160-154805/1-A	Thorium-232			0.02523	U	pCi/L							
MB 160-154805/1-A	Thorium-227			-0.006653	U	pCi/L							

Lab Control Sample ID:	Analyte	Parent Result	Spike Added	LCS Result	Qualifier	Unit	% Rec	% Rec Limits	RPD	RER	DER	RER Limit	Z Factor
LCS 160-154805/2-A	Thorium-230		8.64	15.27	*	pCi/L	177	81 - 125	3				

Lab Control Sample Duplicate ID:	Analyte	Parent Result	Spike Added	LCSD Result	Qualifier	Unit	% Rec	% Rec Limits	RPD	RER	DER	RER Limit	Z Factor
LCSD 160-154805/3-A	Thorium-230		8.64	14.84	*	pCi/L	172	81 - 125	3	0.13	0.37	1	

Glossary:

Ts = Count Duration, Sample

ALPHA SPECTROSCOPY BATCH WORKSHEET

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Batch Number: 154805 Batch Start Date: 11/07/14 09:02 Batch Analyst: Bernsen, Sarah C

Batch Method: ExtChrom Batch End Date: 11/07/14 15:14

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	Th-229 00018	Th-230 00023			
MB 160-154805/1		ExtChrom, A-01-R		500 mL	0.2 mL				
LCS 160-154805/2		ExtChrom, A-01-R		500 mL	0.2 mL	0.2 mL			
LCSD 160-154805/3		ExtChrom, A-01-R		500 mL	0.2 mL	0.2 mL			
160-9071-H-1	SMC-09-20141027-21	ExtChrom, A-01-R	T	249.92 mL	0.2 mL				

Batch Notes	
Balance ID	1125353055
Column Analyst	scb
Column Date	11/7/14
CoPrecipitation Analyst	scb
CoPrecipitation Date	11/7/14
Person's name who witnessed reagent drop	nmn per scb
Analyst who added reagent	scb
SOP Number	ST-RC-0100, ST-RC-0242

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
10:57:34AM 11/10/2014

Sample

Sample Name: MB 160-154805/1-A
SampleType: Blank
: MB 160-154805/1-A
Sample Collection Date: 11/7/2014 3:14:00PM

Spectrum #1 Analysis #1
Sample Volume : 0.5000L
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: 154805
AnalysisID: 625950

Analyst: 60040

Tracer

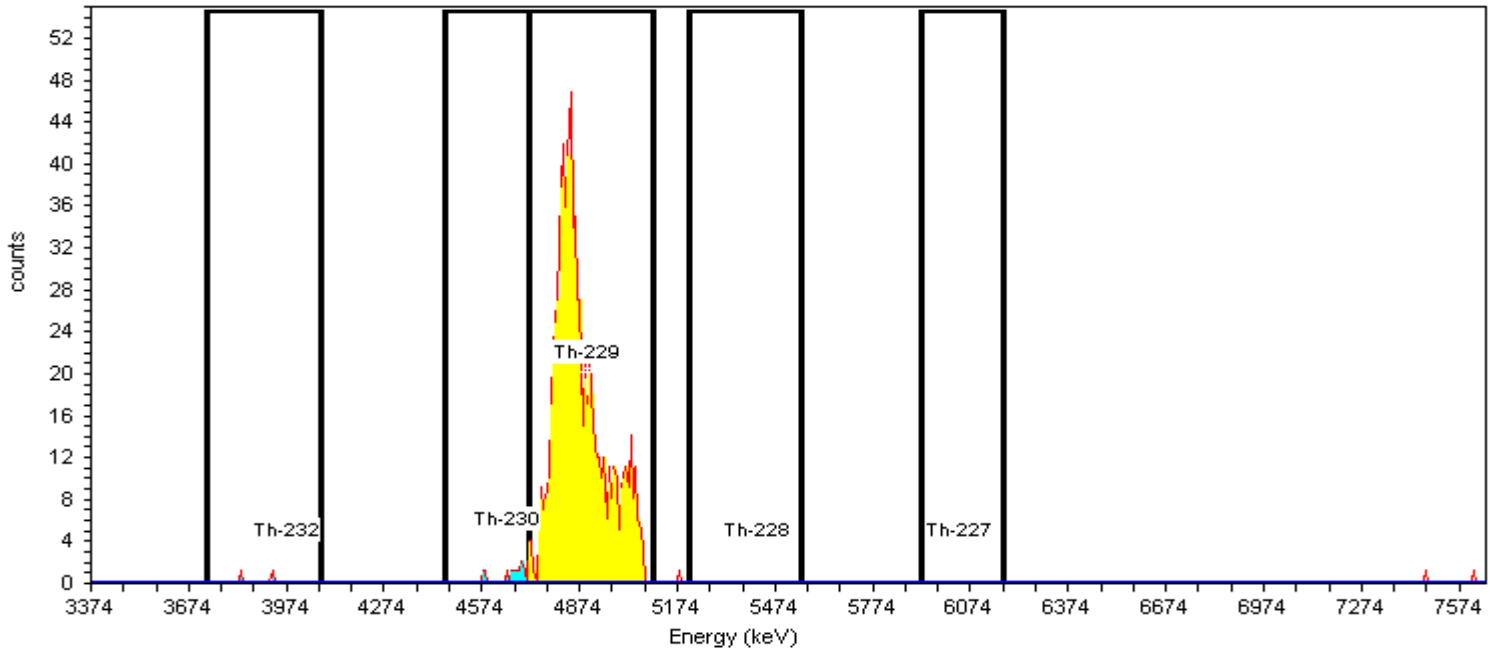
Tracer Name: Th-229_00018
Tracer Activity: 67.23 DPM/mL x (Vol.)0.20 mL = 13.45 DPM
Tracer Ref. Date: 8/6/2014 11:00:41AM

Tracer Nuclide: Th-229
Tracer Recovery: 52.16%

Acquisition

Detector: AV116
Serial Number: 49-034G1
Acquisition Start Date: 11/7/2014 5:41:42PM
Live Time: 400.00 min.
Real Time: 400.01 min.
Background Date: 10/24/2014 1:12:44AM
Background Info: Sample: ICB;AV116; Det: AV116; Spectrum #1; Oct-24-2014 01:12

Calibration Name: IC-9792;AV116-20140430
Calibration Date: 5/1/2014 1:16:57PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 27.04% +/- 0.31% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = Thorium ROI_Th227
Decay Correction: 11/7/2014 5:40:05PM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Thorium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
Th-232	3971.0	4,010.0	-39.0	3724.9	4075.4	44.5	100.2	2	0.4167	1.58	0.025	pCi/L
Th-230	4649.7	4,687.5	-37.8	4455.8	4716.8	.4	99.7	14	0.0000	14.00	0.224	pCi/L
Th-229	4895.8	4,845.3	50.5	4716.8	5097.1	95.9	99.6	756	0.0000	756.00	6.318	pCi/L
Th-228	5417.8	5,423.3	-5.5	5209.0	5552.0	.0	99.8	0	0.4167	-0.42	-0.007	pCi/L

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
10:57:13AM 11/10/2014

Sample

Sample Name: LCS 160-154805/2-A
SampleType: Control
: LCS 160-154805/2-A
Sample Collection Date: 11/7/2014 3:14:00PM

Spectrum #1 Analysis #1
Sample Volume : 0.5000L
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: 154805
AnalysisID: 625948

Analyst: 60040

Tracer

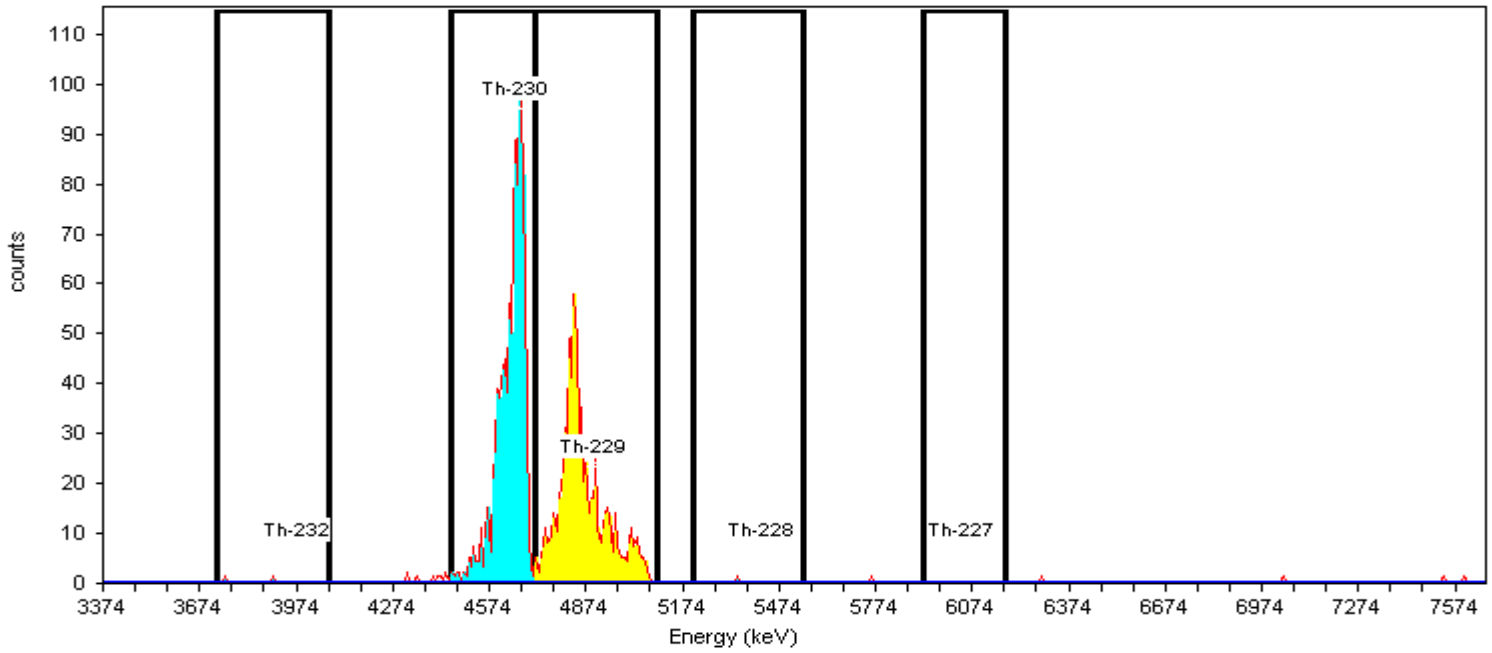
Tracer Name: Th-229_00018
Tracer Activity: 67.23 DPM/mL x (Vol.)0.20 mL = 13.45 DPM
Tracer Ref. Date: 8/6/2014 11:00:41AM

Tracer Nuclide: Th-229
Tracer Recovery: 53.20%

Acquisition

Detector: AV117
Serial Number: 49-037X4
Acquisition Start Date: 11/7/2014 5:41:43PM
Live Time: 400.00 min.
Real Time: 400.01 min.
Background Date: 10/24/2014 1:12:45AM
Background Info: Sample: ICB;AV117; Det: AV117; Spectrum #1; Oct-24-2014 01:12

Calibration Name: IC-9793;AV117-20140430
Calibration Date: 5/1/2014 1:17:04PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 25.86% +/- 0.32% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = Thorium ROI_Th227
Decay Correction: 11/7/2014 5:40:04PM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Thorium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
Th-232	3971.0	4,010.0	-39.0	3724.9	4075.4	28.5	100.2	2	0.8333	1.17	0.019	pCi/L
Th-230	4649.7	4,687.5	-37.8	4455.8	4716.8	40.5	99.7	930	0.4167	929.58	15.267	pCi/L
Th-229	4895.8	4,845.3	50.5	4716.8	5097.1	67.8	99.6	738	0.8333	737.17	6.444	pCi/L
Th-228	5417.8	5,423.3	-5.5	5209.0	5552.0	44.5	99.8	1	0.4167	0.58	0.010	pCi/L

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
10:57:24AM 11/10/2014

Sample

Sample Name: LCSD 160-154805/3-A
SampleType: Control
: LCSD 160-154805/3-A
Sample Collection Date: 11/7/2014 3:14:00PM

Spectrum #1 Analysis #1
Sample Volume : 0.5000L
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: 154805
AnalysisID: 625949

Analyst: 60040

Tracer

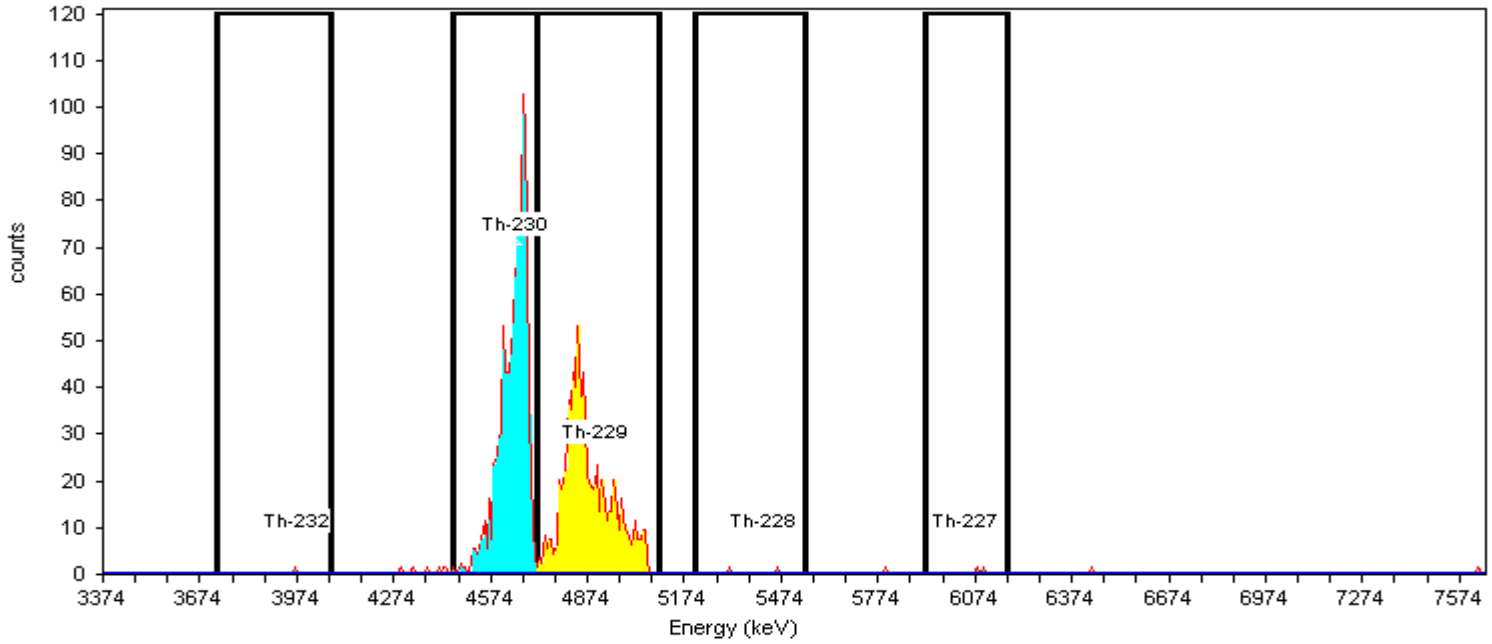
Tracer Name: Th-229_00018
Tracer Activity: 67.23 DPM/mL x (Vol.)0.20 mL = 13.45 DPM
Tracer Ref. Date: 8/6/2014 11:00:41AM

Tracer Nuclide: Th-229
Tracer Recovery: 56.01%

Acquisition

Detector: AV118
Serial Number: 49-037F4
Acquisition Start Date: 11/7/2014 5:41:44PM
Live Time: 400.00 min.
Real Time: 400.01 min.
Background Date: 10/24/2014 1:12:47AM
Background Info: Sample: ICB;AV118; Det: AV118; Spectrum #1; Oct-24-2014 01:12

Calibration Name: IC-9794;AV118-20140430
Calibration Date: 5/1/2014 1:17:10PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 25.84% +/- 0.32% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = Thorium ROI_Th227
Decay Correction: 11/7/2014 5:40:05PM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Thorium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
Th-232	3971.0	4,010.0	-39.0	3724.9	4075.4	44.5	100.2	1	0.4167	0.58	0.009	pCi/L
Th-230	4649.7	4,687.5	-37.8	4455.8	4716.8	20.4	99.7	951	0.0000	951.00	14.845	pCi/L
Th-229	4895.8	4,845.3	50.5	4716.8	5097.1	79.7	99.6	776	0.4167	775.58	6.785	pCi/L
Th-228	5417.8	5,423.3	-5.5	5209.0	5552.0	44.5	99.8	2	1.2500	0.75	0.012	pCi/L

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
10:56:51AM 11/10/2014

Sample

Sample Name: 160-9071-H-1-C
SampleType: Sample
: 160-9071-H-1-C
Sample Collection Date: 10/27/2014 10:55:00AM

Spectrum #1 Analysis #1
Sample Volume : 0.2499L
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: 154805
AnalysisID: 625946

Analyst: 60040

Tracer

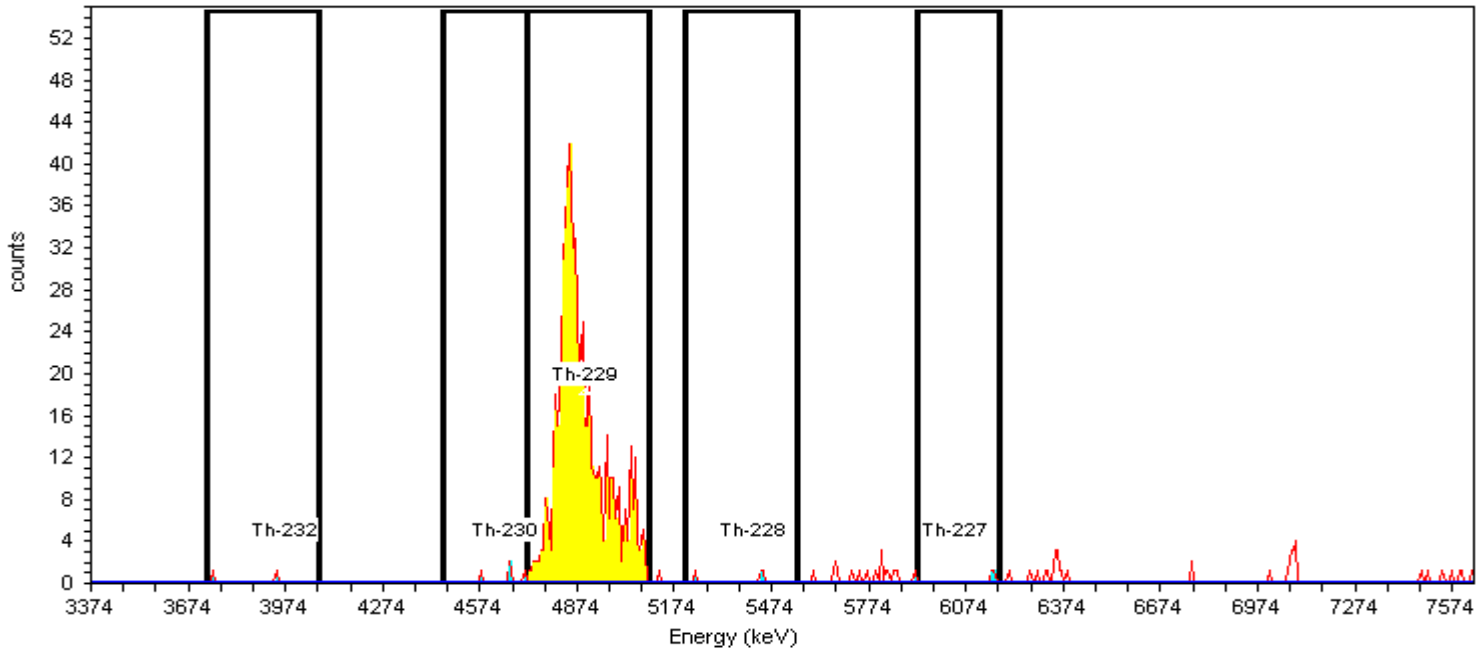
Tracer Name: Th-229_00018
Tracer Activity: 67.23 DPM/mL x (Vol.)0.20 mL = 13.45 DPM
Tracer Ref. Date: 8/6/2014 11:00:41AM

Tracer Nuclide: Th-229
Tracer Recovery: 42.80%

Acquisition

Detector: AV56
Serial Number: 52-059EE5
Acquisition Start Date: 11/7/2014 5:41:53PM
Live Time: 400.00 min.
Real Time: 400.00 min.
Background Date: 10/24/2014 1:11:03AM
Background Info: Sample: ICB;AV56; Det: AV56; Spectrum #1; Oct-24-2014 01:11

Calibration Name: IC-9792;AV56-20140504
Calibration Date: 5/5/2014 6:53:34PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 26.09% +/- 0.30% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = Thorium ROI_Th227
Decay Correction: 11/7/2014 5:40:04PM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Thorium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
Th-232	3971.0	4,010.0	-39.0	3724.9	4075.4	28.5	100.2	2	0.8333	1.17	0.047	pCi/L
Th-230	4649.7	4,687.5	-37.8	4455.8	4716.8	10.8	99.7	4	1.2500	2.75	0.111	pCi/L
Th-229	4895.8	4,845.3	50.5	4716.8	5097.1	82.7	99.6	600	1.6667	598.33	10.372	pCi/L
Th-228	5417.8	5,423.3	-5.5	5209.0	5552.0	238.0	99.8	3	1.2500	1.75	0.071	pCi/L

Method A-01-R U

Isotopic Uranium (Alpha Spectrometry) by Method A-01-R

Prep Batch: 153826

, Extraction Chromatography Resin Actinide

Alpha Spectroscopy Analysis Detail Report
Prep Batch: 153826

Lab ID: MB 160-153826/1-A
Client ID:
Sigma: 2
Analyzed: 11/04/14 21:14
Detector: AV47
Dil Fac: 1
Decay Corrected: No
Yield Truncated: No
Ts: 240

Analyte	MB Result	Count Unc	Total Unc	Qualifier	Unit	RL	MDC	Anly Batch
Uranium-233/234	0.08781	0.110	0.110	U	pCi/L	1.00	0.178	154409
Uranium-235/236	0.005751	0.0501	0.0501	U	pCi/L	1.00	0.142	154409
Uranium-238	0.01845	0.0553	0.0554	U	pCi/L	1.00	0.123	154409

Tracer	MB Result	Count Unc	Total Unc	Qualifier	Unit	MDC	Spike Added	% Rec	% Rec Limits
Uranium-232	11.29	0.810	1.25		pCi/L	0.109	14.8	78.6	30 - 110

Lab ID: LCS 160-153826/2-A
Client ID:
Sigma: 2
Analyzed: 11/04/14 21:14
Detector: AV49
Dil Fac: 1
Decay Corrected: No
Yield Truncated: No
Ts: 240

Analyte	LCS Result	Count Unc	Total Unc	Qualifier	Unit	RL	MDC	Anly Batch
Uranium-233/234	12.78	0.932	1.42		pCi/L	1.00	0.159	154411
Uranium-238	13.55	0.958	1.49		pCi/L	1.00	0.139	154411

Tracer	LCS Result	Count Unc	Total Unc	Qualifier	Unit	MDC	Spike Added	% Rec	% Rec Limits
Uranium-232	12.04	0.827	1.31		pCi/L	0.140	14.8	83.8	30 - 110

Lab ID: LCSD 160-153826/3-A
Client ID:
Sigma: 2
Analyzed: 11/04/14 21:14
Detector: AV50
Dil Fac: 1
Decay Corrected: No
Yield Truncated: No
Ts: 240

Analyte	LCSD Result	Count Unc	Total Unc	Qualifier	Unit	RL	MDC	Anly Batch
Uranium-233/234	13.24	0.958	1.47		pCi/L	1.00	0.142	154412
Uranium-238	13.64	0.970	1.50		pCi/L	1.00	0.107	154412

Tracer	LCSD Result	Count Unc	Total Unc	Qualifier	Unit	MDC	Spike Added	% Rec	% Rec Limits
Uranium-232	11.62	0.806	1.27		pCi/L	0.123	14.8	80.9	30 - 110

Lab ID: 160-9071-1
Client ID: SMC-09-20141027-21
Sigma: 2
Analyzed: 11/04/14 21:14
Detector: AV51
Dil Fac: 1
Decay Corrected: No
Yield Truncated: No
Ts: 240

Analyte	Result	Count Unc	Total Unc	Qualifier	Unit	RL	MDC	Anly Batch
Uranium-233/234	6.79	1.03	1.18		pCi/L	1.00	0.218	154413
Uranium-235/236	0.278	0.238	0.240		pCi/L	1.00	0.234	154413
Uranium-238	6.67	1.02	1.17		pCi/L	1.00	0.276	154413

Alpha Spectroscopy Analysis Detail Report
Prep Batch: 153826

Lab ID:	160-9071-1	Analyzed:	11/04/14 21:14	Decay Corrected:	No
Client ID:	SMC-09-20141027-21	Detector:	AV51	Yield Truncated:	No
Sigma:	2	Dil Fac:	1	Ts:	240

Tracer	Result	Count Unc	Total Unc	Qualifier	Unit	MDC	Spike Added	% Rec	% Rec Limits
Uranium-232	21.1	1.55	2.36		pCi/L	0.176	29.6	73.5	30 - 110

Quality Control Summary

Method Blank ID:	Analyte	Parent Result	Spike Added	MB Result	Qualifier	Unit	% Rec	% Rec Limits	RPD	RER	DER	RER Limit	Z Factor
MB 160-153826/1-A	Uranium-233/234			0.08781	U	pCi/L							
MB 160-153826/1-A	Uranium-235/236			0.005751	U	pCi/L							
MB 160-153826/1-A	Uranium-238			0.01845	U	pCi/L							

Lab Control Sample ID:	Analyte	Parent Result	Spike Added	LCS Result	Qualifier	Unit	% Rec	% Rec Limits	RPD	RER	DER	RER Limit	Z Factor
LCS 160-153826/2-A	Uranium-233/234		12.7	12.78		pCi/L	100	84 - 120	4				
LCS 160-153826/2-A	Uranium-238		13.0	13.55		pCi/L	104	83 - 121	1				

Lab Control Sample Duplicate ID:	Analyte	Parent Result	Spike Added	LCSD Result	Qualifier	Unit	% Rec	% Rec Limits	RPD	RER	DER	RER Limit	Z Factor
LCSD 160-153826/3-A	Uranium-233/234		12.7	13.24		pCi/L	104	84 - 120	4	0.16	0.46	1	
LCSD 160-153826/3-A	Uranium-238		13.0	13.64		pCi/L	105	83 - 121	1	0.03	0.09	1	

Glossary:

Ts = Count Duration, Sample

ALPHA SPECTROSCOPY BATCH WORKSHEET

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Batch Number: 153826 Batch Start Date: 11/03/14 11:05 Batch Analyst: Bernsen, Sarah C

Batch Method: ExtChrom Batch End Date: 11/04/14 12:45

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	U-232 00028	UNAT Spike 00001			
MB 160-153826/1		ExtChrom, A-01-R		500 mL	0.2 mL				
LCS 160-153826/2		ExtChrom, A-01-R		500 mL	0.2 mL	0.2 mL			
LCSD 160-153826/3		ExtChrom, A-01-R		500 mL	0.2 mL	0.2 mL			
160-9071-H-1	SMC-09-20141027-21	ExtChrom, A-01-R	T	250.48 mL	0.2 mL				

Batch Notes	
Balance ID	1125353055
Column Analyst	nmn per scb
Column Date	11/4/14
CoPrecipitation Analyst	scb
CoPrecipitation Date	11/4/14
Person's name who witnessed reagent drop	nmn per scb
Analyst who added reagent	scb
SOP Number	ST-RC-0100, ST-RC-0242

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
9:22:56AM 11/6/2014

Sample

Sample Name: MB 160-153826/1-A
SampleType: Blank
: MB 160-153826/1-A
Sample Collection Date: 11/3/2014 11:08:00AM

Spectrum #1 Analysis #1
Sample Volume : 0.5000L
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: 153826
AnalysisID: 625319

Analyst: 60040

Tracer

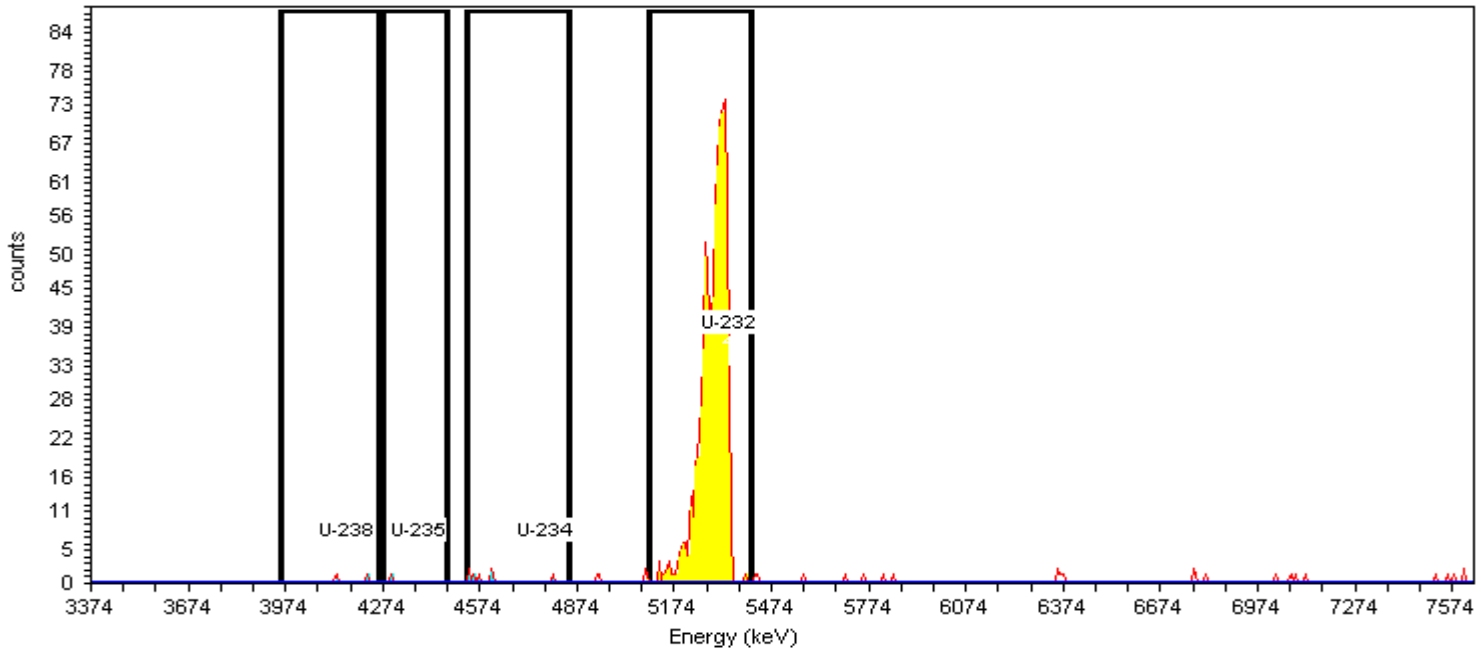
Tracer Name: U-232_00028
Tracer Activity: 82.25 DPM/mL x (Vol.)0.20 mL = 16.45 DPM
Tracer Ref. Date: 8/25/2011 11:00:06AM

Tracer Nuclide: U-232
Tracer Recovery: 78.58%

Acquisition

Detector: AV47
Serial Number: 49-155N5
Acquisition Start Date: 11/4/2014 9:14:39PM
Live Time: 240.00 min.
Real Time: 240.01 min.
Background Date: 10/24/2014 1:10:48AM
Background Info: Sample: ICB;AV47; Det: AV47; Spectrum #1; Oct-24-2014 01:10

Calibration Name: IC-9885;AV47-20140505
Calibration Date: 5/5/2014 10:10:15PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 25.89% +/- 0.38% TPU(2 sigma)



General Analysis

Analysis Method: ROI Analysis, Set Name = UROI
Decay Correction: 11/4/2014 9:12:51PM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Uranium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
U-238	4157.5	4,196.0	-38.5	3956.1	4261.9	9.7	100.0	2	1.0000	1.00	0.018	pCi/L
U-235	4381.2	4,396.0	-14.8	4269.3	4470.7	18.3	80.2	1	0.7500	0.25	0.006	pCi/L
U-234	4776.4	4,775.8	0.6	4530.3	4851.0	30.0	99.8	8	3.2500	4.75	0.088	pCi/L
U-232	5343.2	5,320.3	22.9	5097.1	5410.3	81.1	100.1	781	1.5000	779.50	11.644	pCi/L

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
9:23:16AM 11/6/2014

Sample

Sample Name: LCS 160-153826/2-A
SampleType: Control
: LCS 160-153826/2-A
Sample Collection Date: 11/3/2014 11:08:00AM

Spectrum #1 Analysis #1
Sample Volume : 0.5000L
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: 153826
AnalysisID: 625317

Analyst: 60040

Tracer

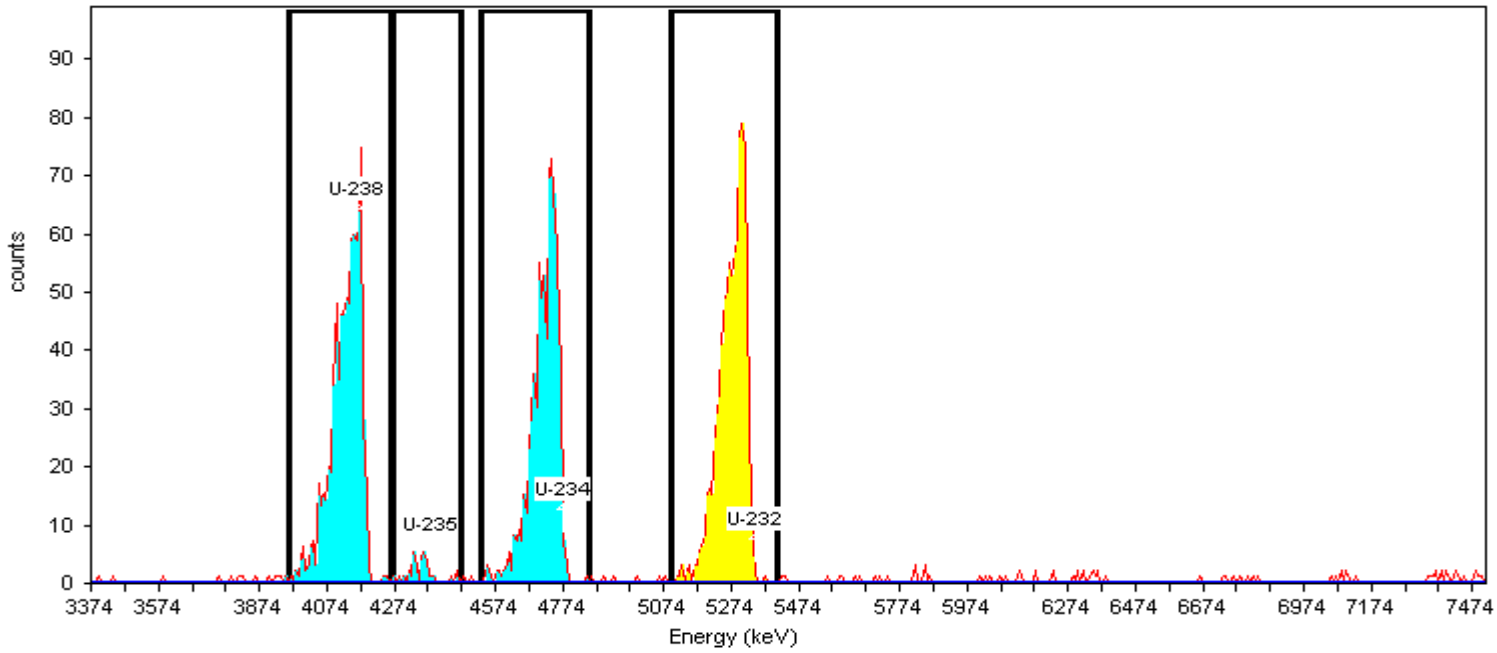
Tracer Name: U-232_00028
Tracer Activity: 82.25 DPM/mL x (Vol.)0.20 mL = 16.45 DPM
Tracer Ref. Date: 8/25/2011 11:00:06AM

Tracer Nuclide: U-232
Tracer Recovery: 83.78%

Acquisition

Detector: AV49
Serial Number: 47-043hh4
Acquisition Start Date: 11/4/2014 9:14:40PM
Live Time: 240.00 min.
Real Time: 240.01 min.
Background Date: 10/24/2014 1:10:51AM
Background Info: Sample: ICB;AV49; Det: AV49; Spectrum #1; Oct-24-2014 01:10

Calibration Name: IC-7107;AV49-20140504
Calibration Date: 5/5/2014 6:52:38PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 26.53% +/- 0.30% TPU(2 sigma)



General Analysis

Analysis Method: ROI Analysis, Set Name = UROI
Decay Correction: 11/4/2014 9:12:50PM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Uranium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
U-238	4157.5	4,196.0	-38.5	3956.1	4261.9	91.8	100.0	804	2.0000	802.00	13.545	pCi/L
U-235	4381.2	4,396.0	-14.8	4269.3	4470.7	48.7	80.2	33	1.5000	31.50	0.663	pCi/L
U-234	4776.4	4,775.8	0.6	4530.3	4851.0	83.9	99.8	758	3.0000	755.00	12.777	pCi/L
U-232	5343.2	5,320.3	22.9	5097.1	5410.3	88.1	100.1	855	3.5000	851.50	12.415	pCi/L

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
9:23:07AM 11/6/2014

Sample

Sample Name: LCSD 160-153826/3-A
SampleType: Control
: LCSD 160-153826/3-A
Sample Collection Date: 11/3/2014 11:08:00AM

Spectrum #1 Analysis #1
Sample Volume : 0.5000L
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: 153826
AnalysisID: 625318

Analyst: 60040

Tracer

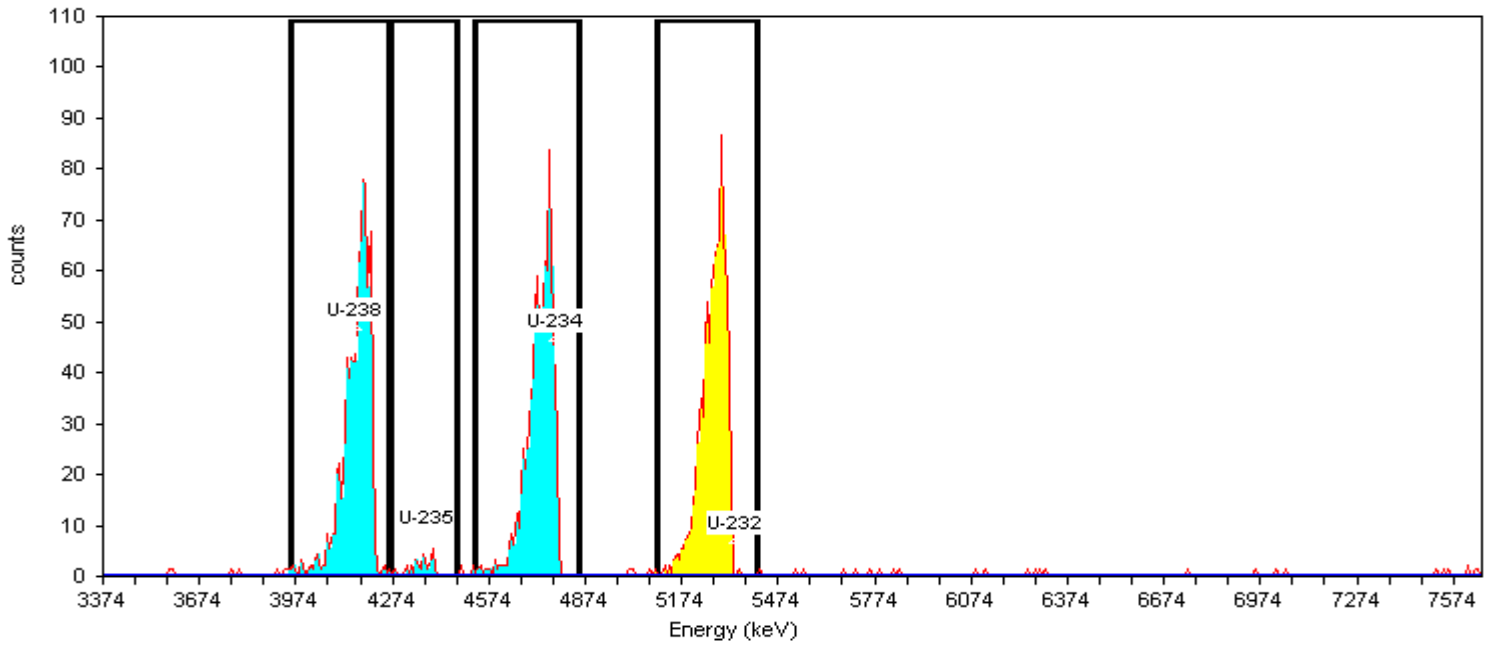
Tracer Name: U-232_00028
Tracer Activity: 82.25 DPM/mL x (Vol.)0.20 mL = 16.45 DPM
Tracer Ref. Date: 8/25/2011 11:00:06AM

Tracer Nuclide: U-232
Tracer Recovery: 80.89%

Acquisition

Detector: AV50
Serial Number: 50-060W2
Acquisition Start Date: 11/4/2014 9:14:42PM
Live Time: 240.00 min.
Real Time: 240.01 min.
Background Date: 10/24/2014 1:10:53AM
Background Info: Sample: ICB;AV50; Det: AV50; Spectrum #1; Oct-24-2014 01:10

Calibration Name: IC-8874;AV50-20140504
Calibration Date: 5/5/2014 6:52:48PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 26.93% +/- 0.38% TPU(2 sigma)



General Analysis

Analysis Method: ROI Analysis, Set Name = UROI
Decay Correction: 11/4/2014 9:12:51PM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Uranium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
U-238	4157.5	4,196.0	-38.5	3956.1	4261.9	73.7	100.0	792	0.7500	791.25	13.636	pCi/L
U-235	4381.2	4,396.0	-14.8	4269.3	4470.7	59.0	80.2	28	0.2500	27.75	0.596	pCi/L
U-234	4776.4	4,775.8	0.6	4530.3	4851.0	84.0	99.8	769	2.0000	767.00	13.245	pCi/L
U-232	5343.2	5,320.3	22.9	5097.1	5410.3	84.0	100.1	837	2.5000	834.50	11.987	pCi/L

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
9:23:36AM 11/6/2014

Sample

Sample Name: 160-9071-H-1-B
SampleType: Sample
: 160-9071-H-1-B
Sample Collection Date: 10/27/2014 10:55:00AM

Spectrum #1 Analysis #1
Sample Volume : 0.2505L
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: 153826
AnalysisID: 625315

Analyst: 60040

Tracer

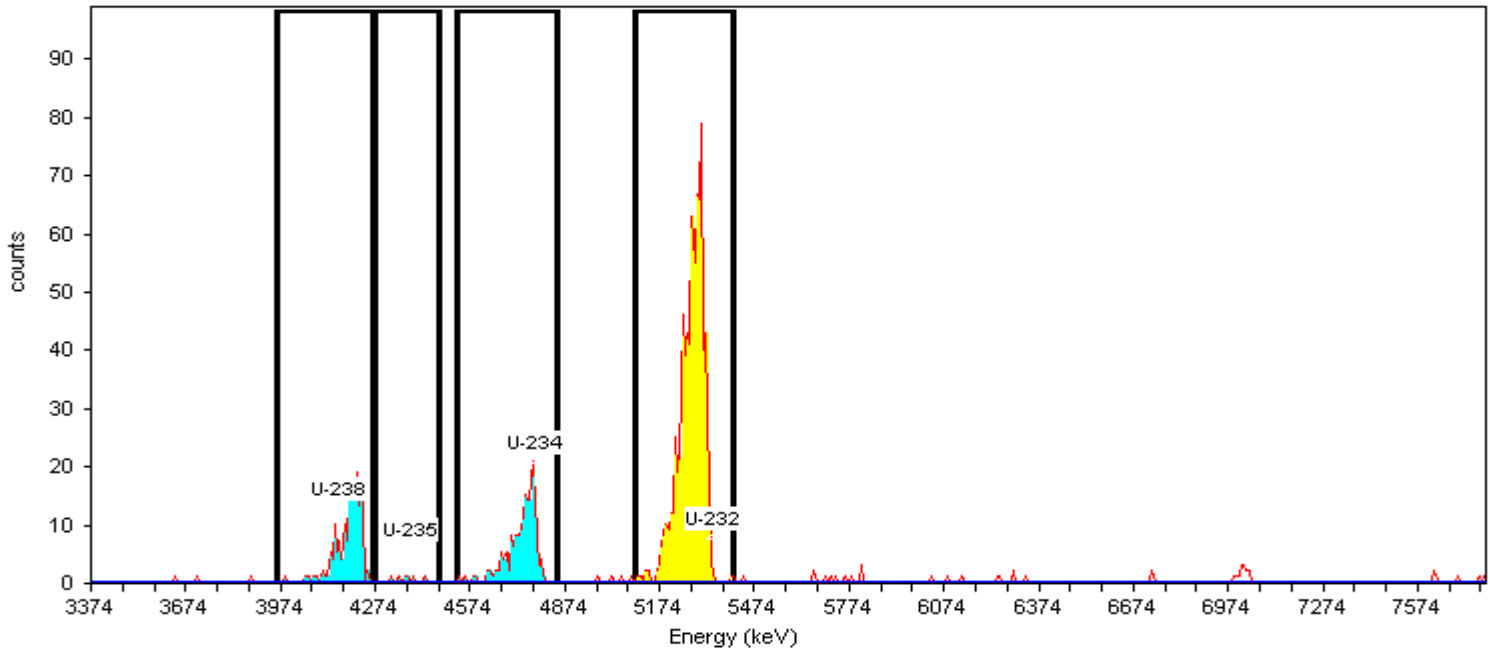
Tracer Name: U-232_00028
Tracer Activity: 82.25 DPM/mL x (Vol.)0.20 mL = 16.45 DPM
Tracer Ref. Date: 8/25/2011 11:00:06AM

Tracer Nuclide: U-232
Tracer Recovery: 73.52%

Acquisition

Detector: AV51
Serial Number: 48-109I1
Acquisition Start Date: 11/4/2014 9:14:44PM
Live Time: 240.00 min.
Real Time: 240.01 min.
Background Date: 10/26/2014 3:01:23PM
Background Info: Sample: ICB;AV51; Det: AV51; Spectrum #1; Oct-26-2014 15:01

Calibration Name: IC-8875;AV51-20140504
Calibration Date: 5/5/2014 6:52:53PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 26.24% +/- 0.36% TPU(2 sigma)



General Analysis

Analysis Method: ROI Analysis, Set Name = UROI
Decay Correction: 11/4/2014 9:12:50PM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Uranium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
U-238	4157.5	4,196.0	-38.5	3956.1	4261.9	42.1	100.0	173	1.2500	171.75	6.670	pCi/L
U-235	4381.2	4,396.0	-14.8	4269.3	4470.7	70.3	80.2	6	0.2500	5.75	0.278	pCi/L
U-234	4776.4	4,775.8	0.6	4530.3	4851.0	68.9	99.8	175	0.5000	174.50	6.790	pCi/L
U-232	5343.2	5,320.3	22.9	5097.1	5410.3	77.3	100.1	740	0.7500	739.25	21.749	pCi/L

ALPHA SPECTROSCOPY BATCH WORKSHEET

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Batch Number: 153826 Batch Start Date: 11/03/14 11:05 Batch Analyst: Bernsen, Sarah C

Batch Method: ExtChrom Batch End Date: 11/04/14 12:45

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	U-232 00028	UNAT Spike 00001			
MB 160-153826/1		ExtChrom, A-01-R		500 mL	0.2 mL				
LCS 160-153826/2		ExtChrom, A-01-R		500 mL	0.2 mL	0.2 mL			
LCSD 160-153826/3		ExtChrom, A-01-R		500 mL	0.2 mL	0.2 mL			
160-9071-H-1	SMC-09-20141027-21	ExtChrom, A-01-R	T	250.48 mL	0.2 mL				

Batch Notes	
Balance ID	1125353055
Column Analyst	nmn per scb
Column Date	11/4/14
CoPrecipitation Analyst	scb
CoPrecipitation Date	11/4/14
Person's name who witnessed reagent drop	nmn per scb
Analyst who added reagent	scb
SOP Number	ST-RC-0100, ST-RC-0242

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

ALPHA SPECTROSCOPY BATCH WORKSHEET

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Batch Number: 153826 Batch Start Date: 11/03/14 11:05 Batch Analyst: Bernsen, Sarah C

Batch Method: ExtChrom Batch End Date: 11/04/14 12:45

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	U-232 00028	UNAT Spike 00001			
MB 160-153826/1		ExtChrom, A-01-R		500 mL	0.2 mL				
LCS 160-153826/2		ExtChrom, A-01-R		500 mL	0.2 mL	0.2 mL			
LCSD 160-153826/3		ExtChrom, A-01-R		500 mL	0.2 mL	0.2 mL			
160-9071-H-1	SMC-09-20141027-21	ExtChrom, A-01-R	T	250.48 mL	0.2 mL				

Batch Notes	
Balance ID	1125353055
Column Analyst	nmn per scb
Column Date	11/4/14
CoPrecipitation Analyst	scb
CoPrecipitation Date	11/4/14
Person's name who witnessed reagent drop	nmn per scb
Analyst who added reagent	scb
SOP Number	ST-RC-0100, ST-RC-0242

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

ALPHA SPECTROSCOPY BATCH WORKSHEET

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Batch Number: 153826 Batch Start Date: 11/03/14 11:05 Batch Analyst: Bernsen, Sarah C

Batch Method: ExtChrom Batch End Date: 11/04/14 12:45

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	U-232 00028	UNAT Spike 00001			
MB 160-153826/1		ExtChrom, A-01-R		500 mL	0.2 mL				
LCS 160-153826/2		ExtChrom, A-01-R		500 mL	0.2 mL	0.2 mL			
LCSD 160-153826/3		ExtChrom, A-01-R		500 mL	0.2 mL	0.2 mL			
160-9071-H-1	SMC-09-20141027-21	ExtChrom, A-01-R	T	250.48 mL	0.2 mL				

Batch Notes	
Balance ID	1125353055
Column Analyst	nmn per scb
Column Date	11/4/14
CoPrecipitation Analyst	scb
CoPrecipitation Date	11/4/14
Person's name who witnessed reagent drop	nmn per scb
Analyst who added reagent	scb
SOP Number	ST-RC-0100, ST-RC-0242

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

ALPHA SPECTROSCOPY BATCH WORKSHEET

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Batch Number: 153826 Batch Start Date: 11/03/14 11:05 Batch Analyst: Bernsen, Sarah C

Batch Method: ExtChrom Batch End Date: 11/04/14 12:45

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	U-232 00028	UNAT Spike 00001			
MB 160-153826/1		ExtChrom, A-01-R		500 mL	0.2 mL				
LCS 160-153826/2		ExtChrom, A-01-R		500 mL	0.2 mL	0.2 mL			
LCSD 160-153826/3		ExtChrom, A-01-R		500 mL	0.2 mL	0.2 mL			
160-9071-H-1	SMC-09-20141027-21	ExtChrom, A-01-R	T	250.48 mL	0.2 mL				

Batch Notes	
Balance ID	1125353055
Column Analyst	nmn per scb
Column Date	11/4/14
CoPrecipitation Analyst	scb
CoPrecipitation Date	11/4/14
Person's name who witnessed reagent drop	nmn per scb
Analyst who added reagent	scb
SOP Number	ST-RC-0100, ST-RC-0242

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

ALPHA SPECTROSCOPY BATCH WORKSHEET

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Batch Number: 153826 Batch Start Date: 11/03/14 11:05 Batch Analyst: Bernsen, Sarah C

Batch Method: ExtChrom Batch End Date: 11/04/14 12:45

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	U-232 00028	UNAT Spike 00001			
MB 160-153826/1		ExtChrom, A-01-R		500 mL	0.2 mL				
LCS 160-153826/2		ExtChrom, A-01-R		500 mL	0.2 mL	0.2 mL			
LCSD 160-153826/3		ExtChrom, A-01-R		500 mL	0.2 mL	0.2 mL			
160-9071-H-1	SMC-09-20141027-21	ExtChrom, A-01-R	T	250.48 mL	0.2 mL				

Batch Notes	
Balance ID	1125353055
Column Analyst	nmn per scb
Column Date	11/4/14
CoPrecipitation Analyst	scb
CoPrecipitation Date	11/4/14
Person's name who witnessed reagent drop	nmn per scb
Analyst who added reagent	scb
SOP Number	ST-RC-0100, ST-RC-0242

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

ALPHA SPECTROSCOPY BATCH WORKSHEET

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Batch Number: 153826 Batch Start Date: 11/03/14 11:05 Batch Analyst: Bernsen, Sarah C

Batch Method: ExtChrom Batch End Date: 11/04/14 12:45

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	U-232 00028	UNAT Spike 00001			
MB 160-153826/1		ExtChrom, A-01-R		500 mL	0.2 mL				
LCS 160-153826/2		ExtChrom, A-01-R		500 mL	0.2 mL	0.2 mL			
LCSD 160-153826/3		ExtChrom, A-01-R		500 mL	0.2 mL	0.2 mL			
160-9071-H-1	SMC-09-20141027-21	ExtChrom, A-01-R	T	250.48 mL	0.2 mL				

Batch Notes	
Balance ID	1125353055
Column Analyst	nmn per scb
Column Date	11/4/14
CoPrecipitation Analyst	scb
CoPrecipitation Date	11/4/14
Person's name who witnessed reagent drop	nmn per scb
Analyst who added reagent	scb
SOP Number	ST-RC-0100, ST-RC-0242

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

Daily Checks

Alpha Spectroscopy Daily Pulser Check

Analysis Date: 11/04/14

		Gross Counts			FWHM (keV)			Pulser Center			Energy (keV)		
Detector	Analysis Date	Result	Criteria	P/F	Result	Criteria	P/F	Result	Criteria	P/F	Result	Criteria	P/F
AV47	11/04/14 14:22	7393	7260.6 - 8024.9	Pass	12.7	10 - 20	Pass	223.0	217.9 - 227.9	Pass	5030	4989.2 - 5069.2	Pass
AV49	11/04/14 14:22	7619	7226.6 - 7987.3	Pass	15.8	10 - 20	Pass	219.8	215.0 - 225.0	Pass	5006	4967.4 - 5047.4	Pass
AV50	11/04/14 14:22	7432	7169.4 - 7924.1	Pass	13.2	10 - 20	Pass	223.1	218.0 - 228.0	Pass	5030	4990.3 - 5070.3	Pass
AV51	11/04/14 14:22	7307	6922.8 - 7651.5	Pass	17.8	10 - 20	Pass	221.0	217.1 - 227.1	Pass	5015	4983.5 - 5063.5	Pass

Analysis Date: 11/07/14

		Gross Counts			FWHM (keV)			Pulser Center			Energy (keV)		
Detector	Analysis Date	Result	Criteria	P/F	Result	Criteria	P/F	Result	Criteria	P/F	Result	Criteria	P/F
AV56	11/07/14 05:03	7292	6868.1 - 7591.0	Pass	13.6	10 - 20	Pass	221.9	218.0 - 228.0	Pass	5022	5004.9 - 5069.9	Pass
AV116	11/07/14 08:24	7597	7295.5 - 8063.4	Pass	14.3	10 - 20	Pass	221.1	216.0 - 226.0	Pass	5016	4975.1 - 5055.1	Pass
AV117	11/07/14 08:24	7596	7268.9 - 8034.0	Pass	13.8	10 - 20	Pass	222.0	217.1 - 227.1	Pass	5022	4983.2 - 5063.2	Pass
AV118	11/07/14 05:03	7680	7290.8 - 8058.2	Pass	14.6	10 - 20	Pass	221.9	218.0 - 228.0	Pass	5022	4990.2 - 5070.2	Pass

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Pulser Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
2:58:04PM 11/4/2014

Sample

Sample Name: Pulser;AV47 Spectrum #3 Analysis #1
Comment:

Batch

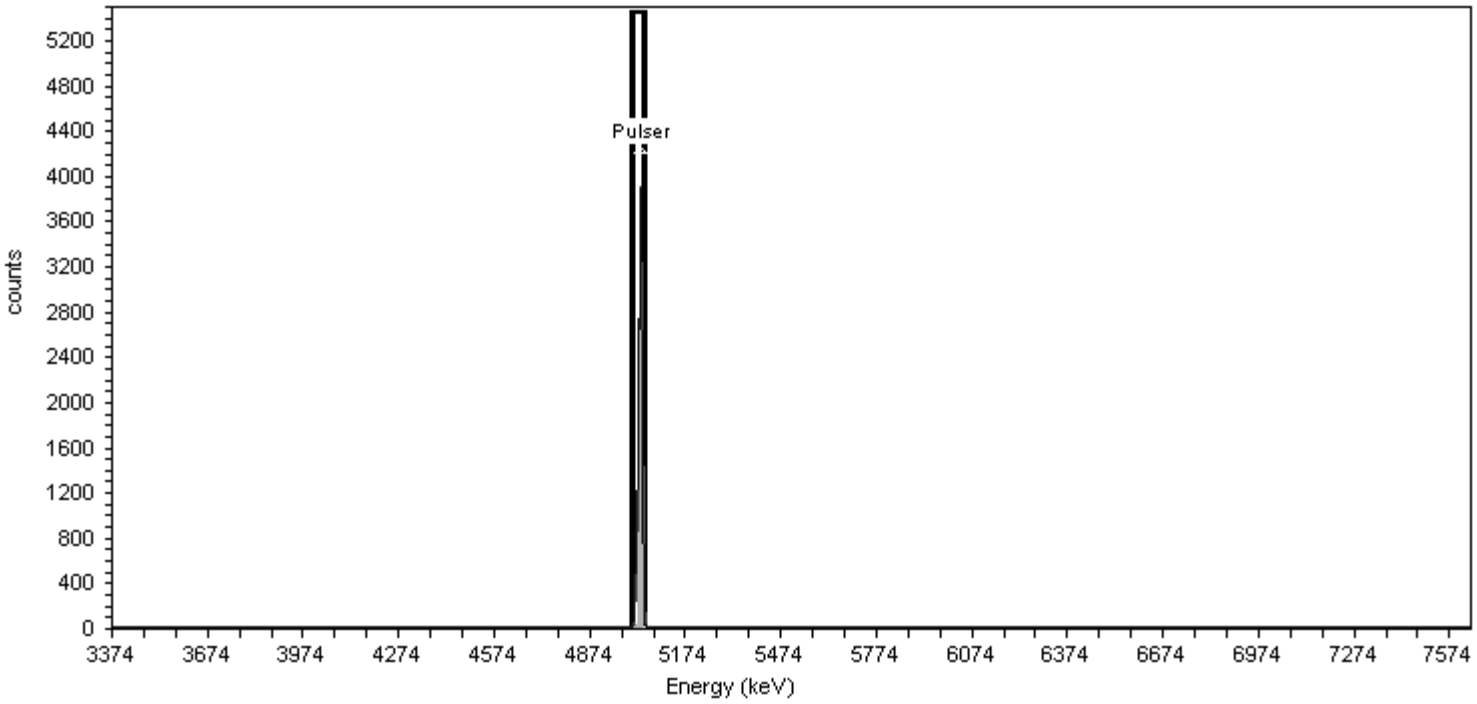
Batch Name: October2014b Analyst: 60040
Description:

Acquisition

Detector: AV47 , SN: 49-155N5
Acquisition Start Date: 11/4/2014 2:22:05PM
Live Time: 1.00 min.
Real Time: 1.02 min.
Calibration Name: IC-9885;AV47-20140505
Calibration Date: 5/5/2014 10:10:15PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 25.89% +/- 0.38% TPU(2 sigma)



General Analysis

Analysis Method: Peak Fit Analysis

Nuclide Summary (Peak Search)

Nuclide	Peak Energy keV	Start Energy keV	End Energy keV	FWHM keV	Fit Area	Gross Counts
Pulser	5029.729	5008.164	5051.293	12.67	7,080.48	7,393.21

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Pulser Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
2:58:22PM 11/4/2014

Sample

Sample Name: Pulser;AV49
Comment:

Spectrum #3 Analysis #1

Batch

Batch Name: October2014b
Description:

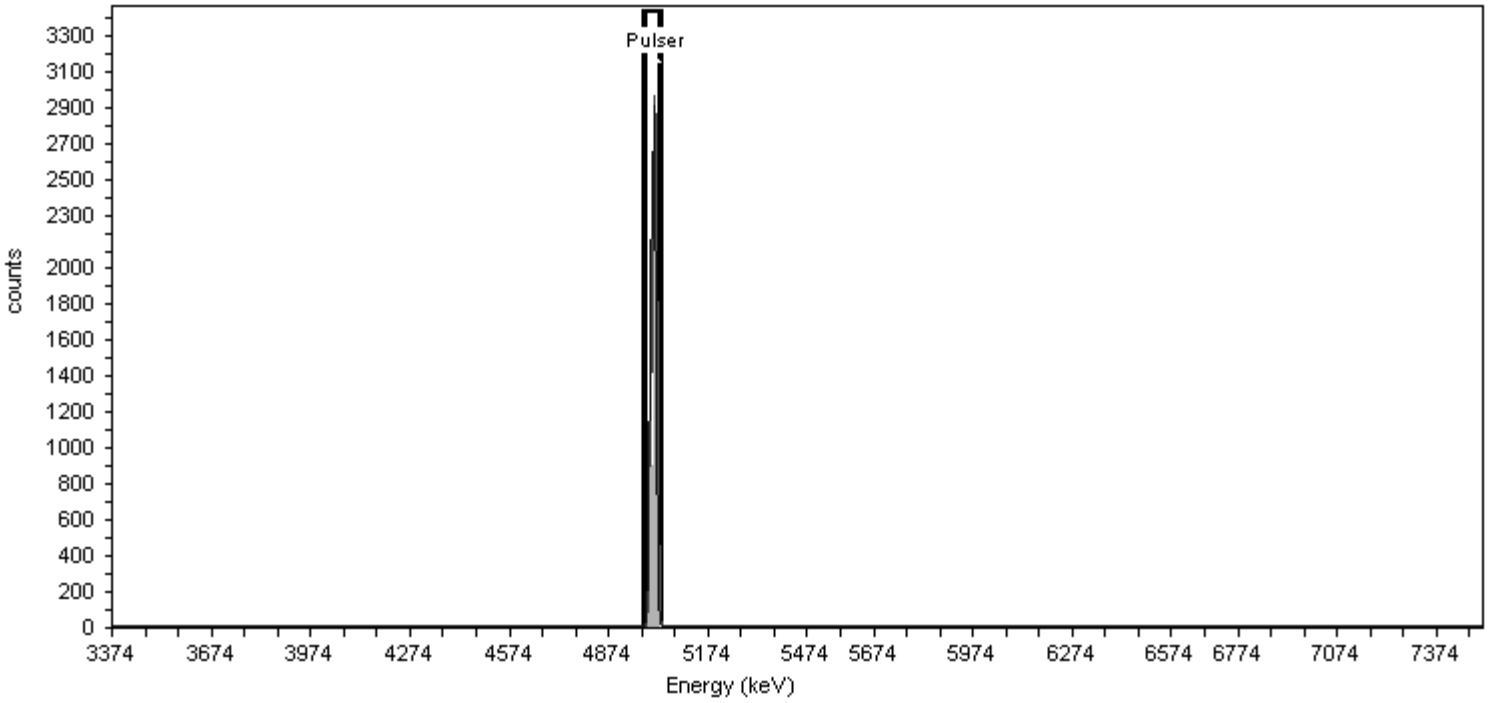
Analyst: 60040

Acquisition

Detector: AV49 , SN: 47-043hh4
Acquisition Start Date: 11/4/2014 2:22:07PM
Live Time: 1.00 min.
Real Time: 1.02 min.
Calibration Name: IC-7107;AV49-20140504
Calibration Date: 5/5/2014 6:52:38PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 26.53% +/- 0.30% TPU(2 sigma)



General Analysis

Analysis Method: Peak Fit Analysis

Nuclide Summary (Peak Search)

Nuclide	Peak Energy keV	Start Energy keV	End Energy keV	FWHM keV	Fit Area	Gross Counts
Pulser	5006.421	4979.534	5033.307	15.80	6,699.93	7,618.84

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Pulser Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
2:58:31PM 11/4/2014

Sample

Sample Name: Pulser;AV50 Spectrum #3 Analysis #1
Comment:

Batch

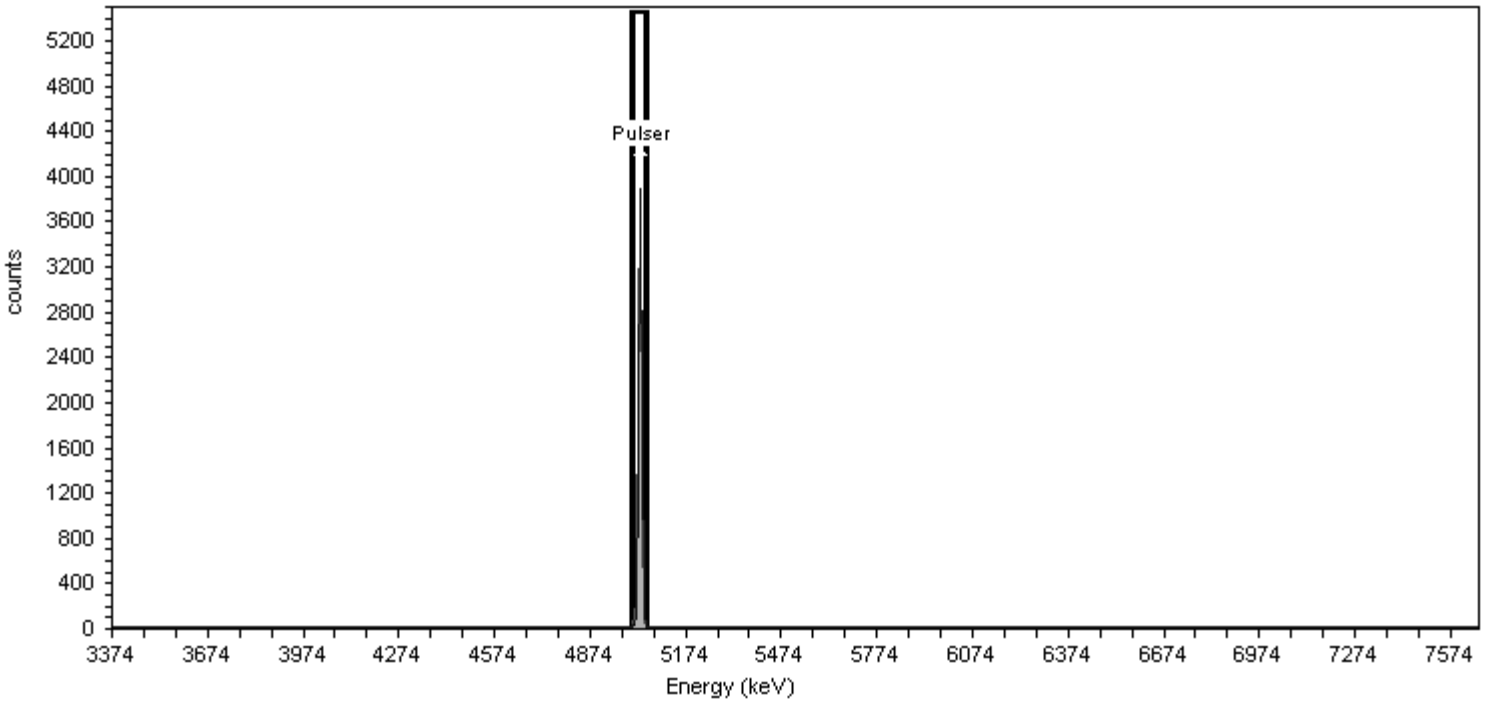
Batch Name: October2014b Analyst: 60040
Description:

Acquisition

Detector: AV50 , SN: 50-060W2
Acquisition Start Date: 11/4/2014 2:22:08PM
Live Time: 1.00 min.
Real Time: 1.02 min.
Calibration Name: IC-8874;AV50-20140504
Calibration Date: 5/5/2014 6:52:48PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 26.93% +/- 0.38% TPU(2 sigma)



General Analysis

Analysis Method: Peak Fit Analysis

Nuclide Summary (Peak Search)

Nuclide	Peak Energy keV	Start Energy keV	End Energy keV	FWHM keV	Fit Area	Gross Counts
Pulser	5030.367	5007.901	5052.832	13.20	7,366.80	7,431.52

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Pulser Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
2:58:40PM 11/4/2014

Sample

Sample Name: Pulser;AV51 Spectrum #3 Analysis #1
Comment:

Batch

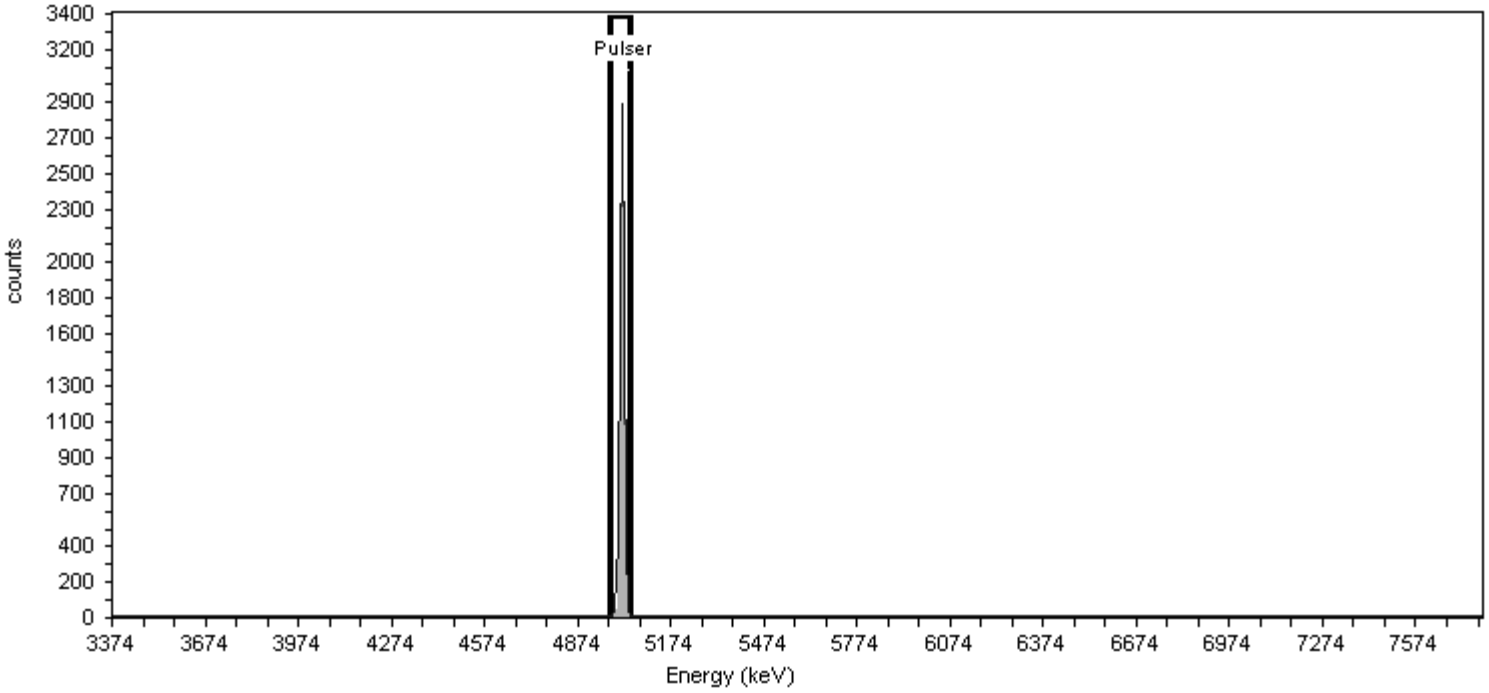
Batch Name: October2014b Analyst: 60040
Description:

Acquisition

Detector: AV51 , SN: 48-109I1
Acquisition Start Date: 11/4/2014 2:22:09PM
Live Time: 1.00 min.
Real Time: 1.02 min.
Calibration Name: IC-8875;AV51-20140504
Calibration Date: 5/5/2014 6:52:53PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 26.24% +/- 0.36% TPU(2 sigma)



General Analysis

Analysis Method: Peak Fit Analysis

Nuclide Summary (Peak Search)

Nuclide	Peak Energy keV	Start Energy keV	End Energy keV	FWHM keV	Fit Area	Gross Counts
Pulser	5015.125	4984.759	5045.489	17.84	7,398.41	7,306.86

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Pulser Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
5:17:37AM 11/7/2014

Sample

Sample Name: Pulser;AV56 Spectrum #6 Analysis #1
Comment:

Batch

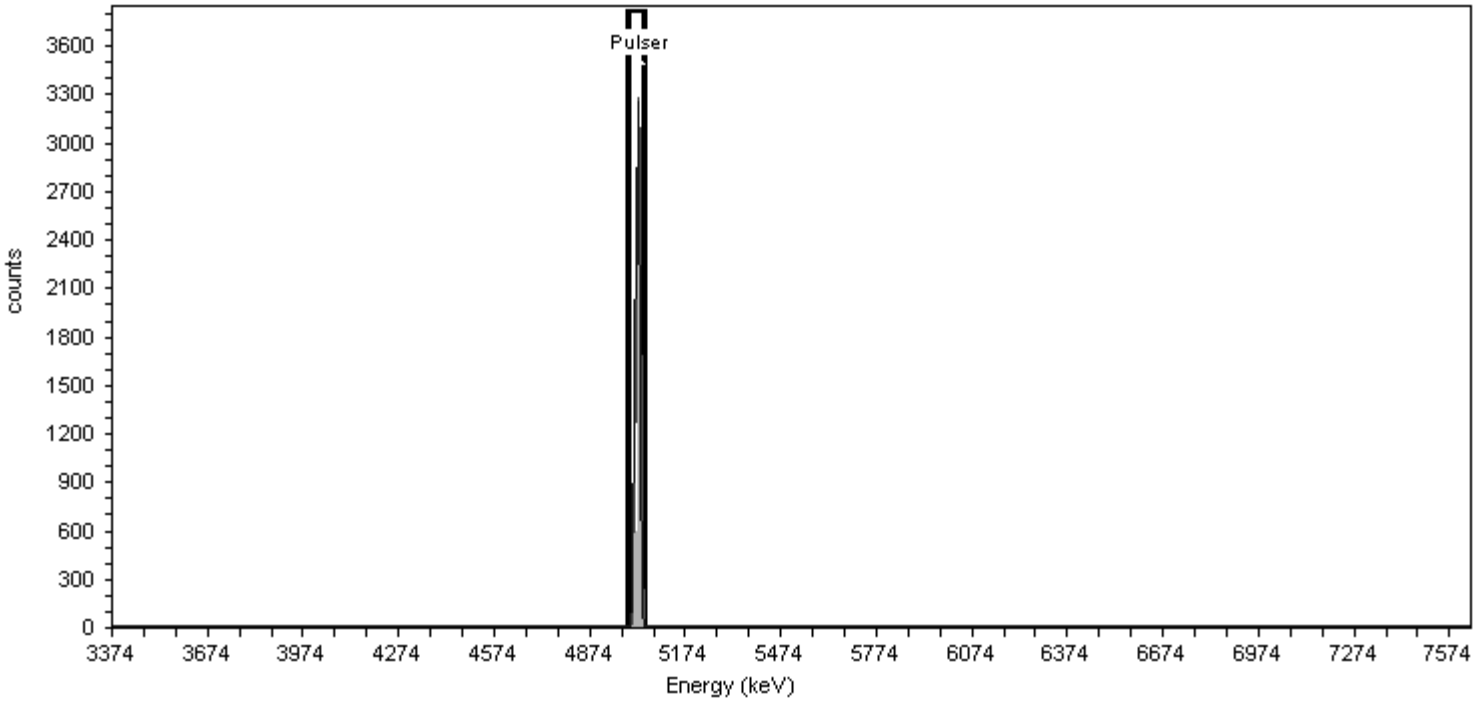
Batch Name: October2014b Analyst: 60040
Description:

Acquisition

Detector: AV56 , SN: 52-059EE5
Acquisition Start Date: 11/7/2014 5:03:30AM
Live Time: 1.00 min.
Real Time: 1.02 min.
Calibration Name: IC-9792;AV56-20140504
Calibration Date: 5/5/2014 6:53:34PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 26.09% +/- 0.30% TPU(2 sigma)



General Analysis

Analysis Method: Peak Fit Analysis

Nuclide Summary (Peak Search)

Nuclide	Peak Energy keV	Start Energy keV	End Energy keV	FWHM keV	Fit Area	Gross Counts
Pulser	5021.888	4998.784	5044.992	13.57	6,382.37	7,291.92

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Pulser Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
8:31:26AM 11/7/2014

Sample

Sample Name: Pulser;AV116
Comment:

Spectrum #3 Analysis #1

Batch

Batch Name: October2014
Description:

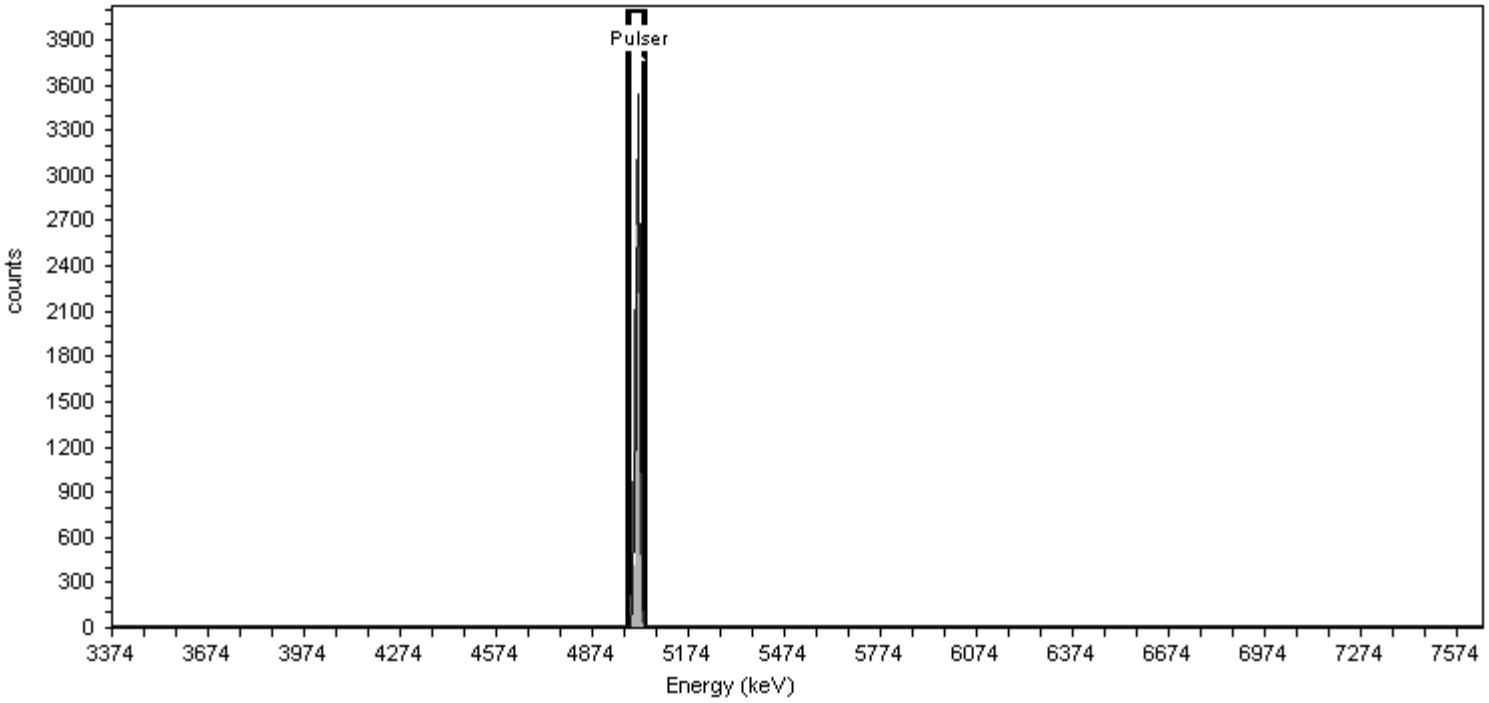
Analyst: 60040

Acquisition

Detector: AV116 , SN: 49-034G1
Acquisition Start Date: 11/7/2014 8:24:47AM
Live Time: 1.00 min.
Real Time: 1.01 min.
Calibration Name: IC-9792;AV116-20140430
Calibration Date: 5/1/2014 1:16:57PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 27.04% +/- 0.31% TPU(2 sigma)



General Analysis

Analysis Method: Peak Fit Analysis

Nuclide Summary (Peak Search)

Nuclide	Peak Energy keV	Start Energy keV	End Energy keV	FWHM keV	Fit Area	Gross Counts
Pulser	5015.567	4991.268	5039.867	14.28	7,253.66	7,597.12

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Pulser Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
8:31:36AM 11/7/2014

Sample

Sample Name: Pulser;AV117
Comment:

Spectrum #3 Analysis #1

Batch

Batch Name: October2014
Description:

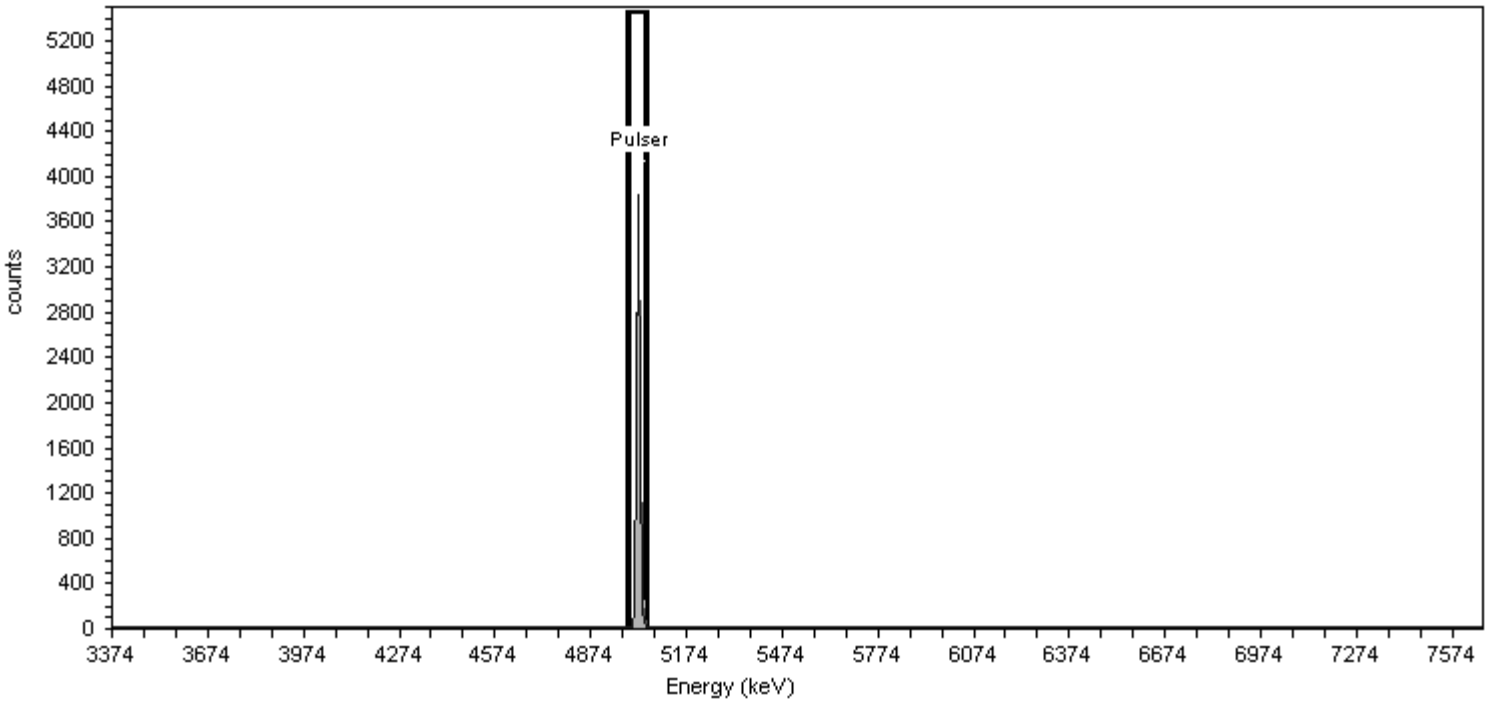
Analyst: 60040

Acquisition

Detector: AV117 , SN: 49-037X4
Acquisition Start Date: 11/7/2014 8:24:49AM
Live Time: 1.00 min.
Real Time: 1.01 min.
Calibration Name: IC-9793;AV117-20140430
Calibration Date: 5/1/2014 1:17:04PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 25.86% +/- 0.32% TPU(2 sigma)



General Analysis

Analysis Method: Peak Fit Analysis

Nuclide Summary (Peak Search)

Nuclide	Peak Energy keV	Start Energy keV	End Energy keV	FWHM keV	Fit Area	Gross Counts
Pulser	5022.435	4998.917	5045.952	13.82	7,589.30	7,596.22

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Pulser Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
5:13:45AM 11/7/2014

Sample

Sample Name: Pulser;AV118 Spectrum #3 Analysis #1
Comment:

Batch

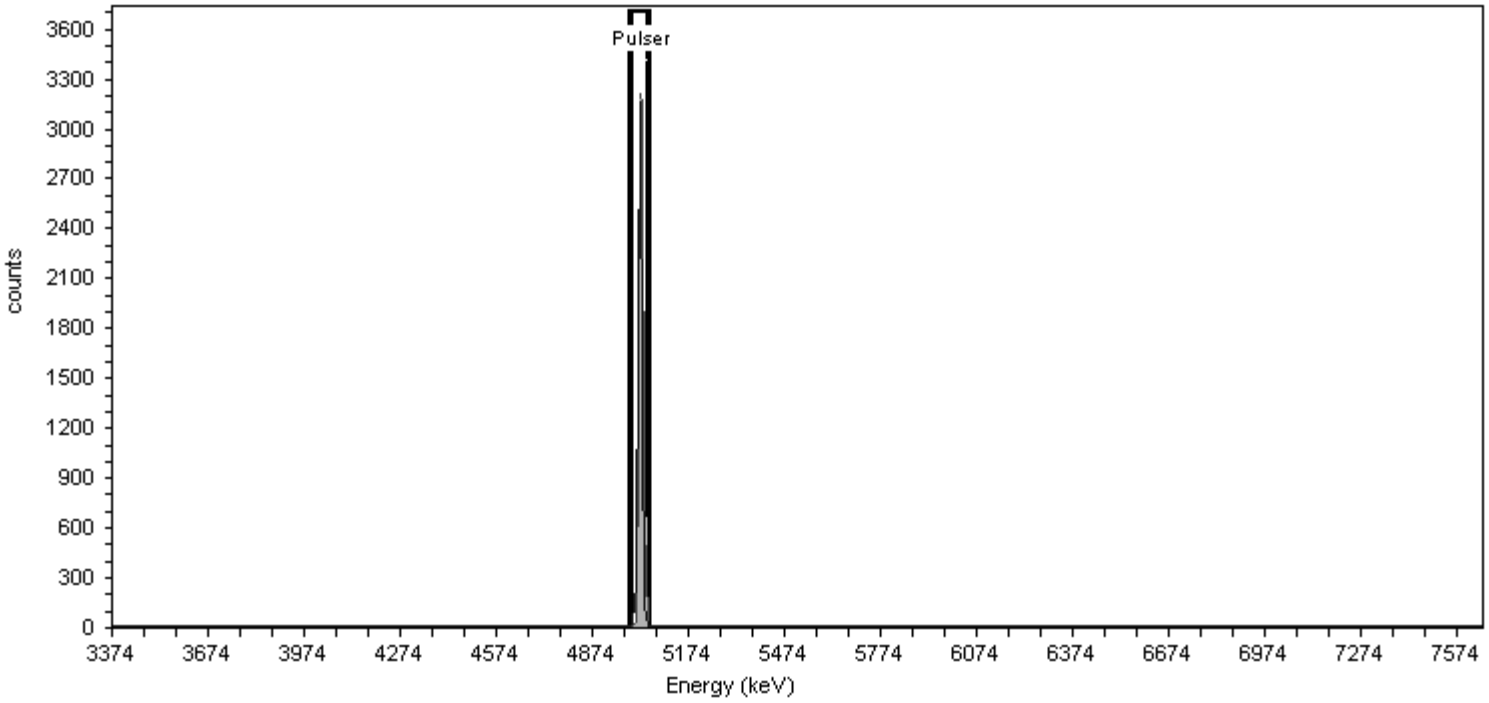
Batch Name: October2014 Analyst: 60040
Description:

Acquisition

Detector: AV118 , SN: 49-037F4
Acquisition Start Date: 11/7/2014 5:03:04AM
Live Time: 1.00 min.
Real Time: 1.02 min.
Calibration Name: IC-9794;AV118-20140430
Calibration Date: 5/1/2014 1:17:10PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 25.84% +/- 0.32% TPU(2 sigma)



General Analysis

Analysis Method: Peak Fit Analysis

Nuclide Summary (Peak Search)

Nuclide	Peak Energy keV	Start Energy keV	End Energy keV	FWHM keV	Fit Area	Gross Counts
Pulser	5021.529	4996.668	5046.391	14.61	6,713.32	7,679.81

Initial Calibrations

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
10:10:19PM 5/5/2014

Calibration

Sample Name: IC-9885;AV47-20140505
Description:
Detector: AV47

Calibration Date: 5/5/2014 10:10:15PM
Analyst: 60040

Source Info

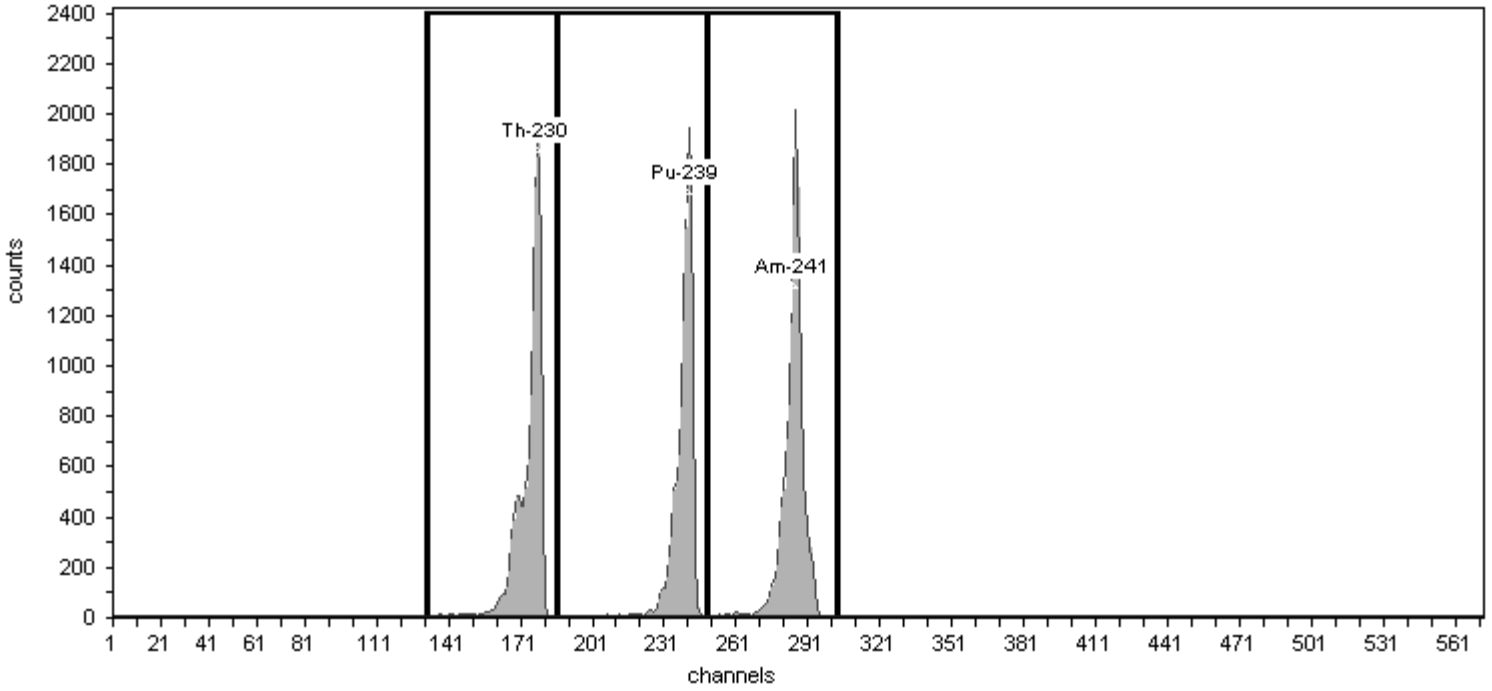
Certificate ID: 82246-334
Prepared by: Analytics

Certification Date: 6/9/2010 12:00:00PM
Description:

Acquisition

Detector: AV47 , SN: 49-155N5
Acquisition Start Date: 5/5/2014 7:31:55PM
Live Time: 140.00 min.
Real Time: 140.08 min.
Efficiency: 25.89% +/- 0.38% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	12,180.00	87.00
Pu-239	240	5.16	186	249	11,448.00	81.77
Am-241	284	5.49	249	303	13,113.00	93.66

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
6:52:45PM 5/5/2014

Calibration

Sample Name: IC-7107;AV49-20140504
Description:
Detector: AV49

Calibration Date: 5/5/2014 6:52:38PM
Analyst: 60040

Source Info

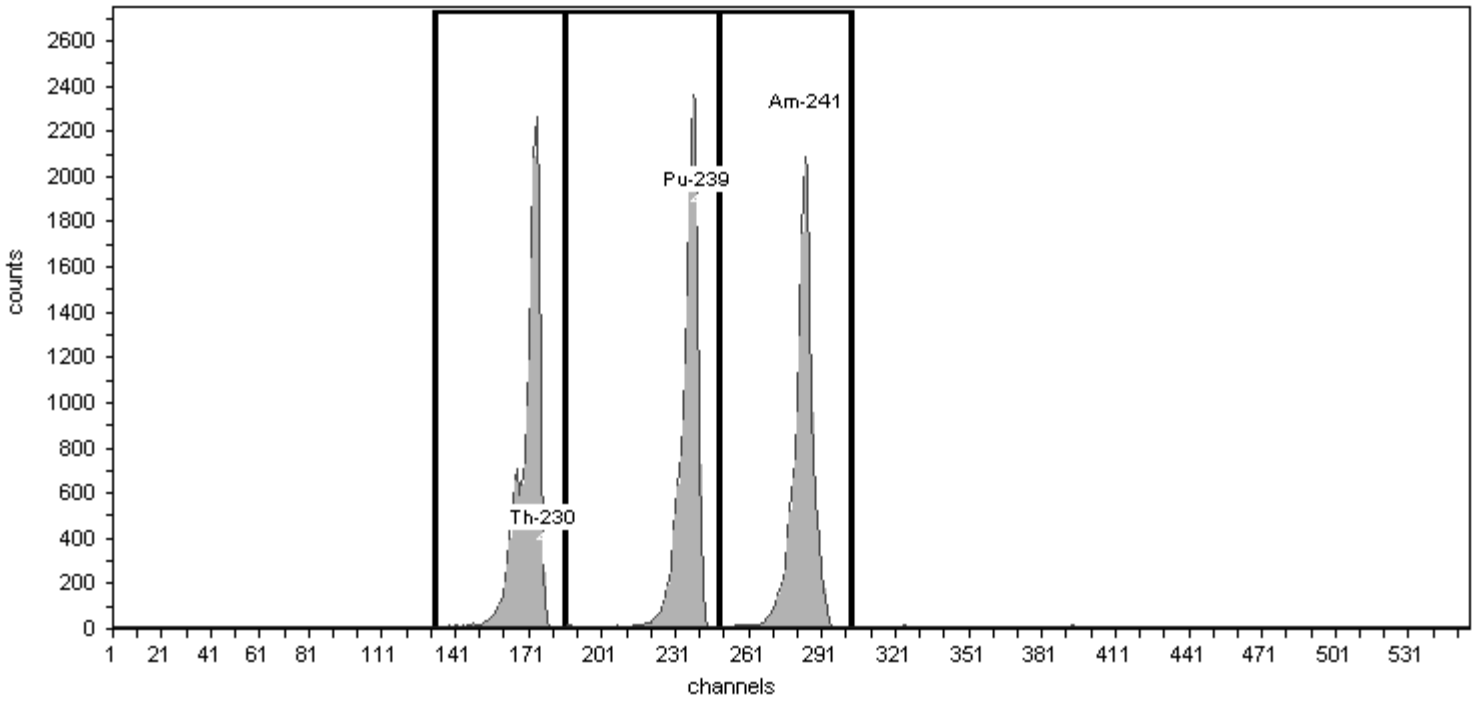
Certificate ID: 82232-334
Prepared by: Analytics

Certification Date: 6/3/2010 12:00:00PM
Description:

Acquisition

Detector: AV49 , SN: 47-043hh4
Acquisition Start Date: 5/4/2014 9:03:18PM
Live Time: 140.00 min.
Real Time: 140.03 min.
Efficiency: 26.53% +/- 0.30% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	16,670.00	119.07
Pu-239	240	5.16	186	249	16,300.00	116.43
Am-241	284	5.49	249	303	16,110.00	115.07

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
6:52:51PM 5/5/2014

Calibration

Sample Name: IC-8874;AV50-20140504
Description:
Detector: AV50

Calibration Date: 5/5/2014 6:52:48PM
Analyst: 60040

Source Info

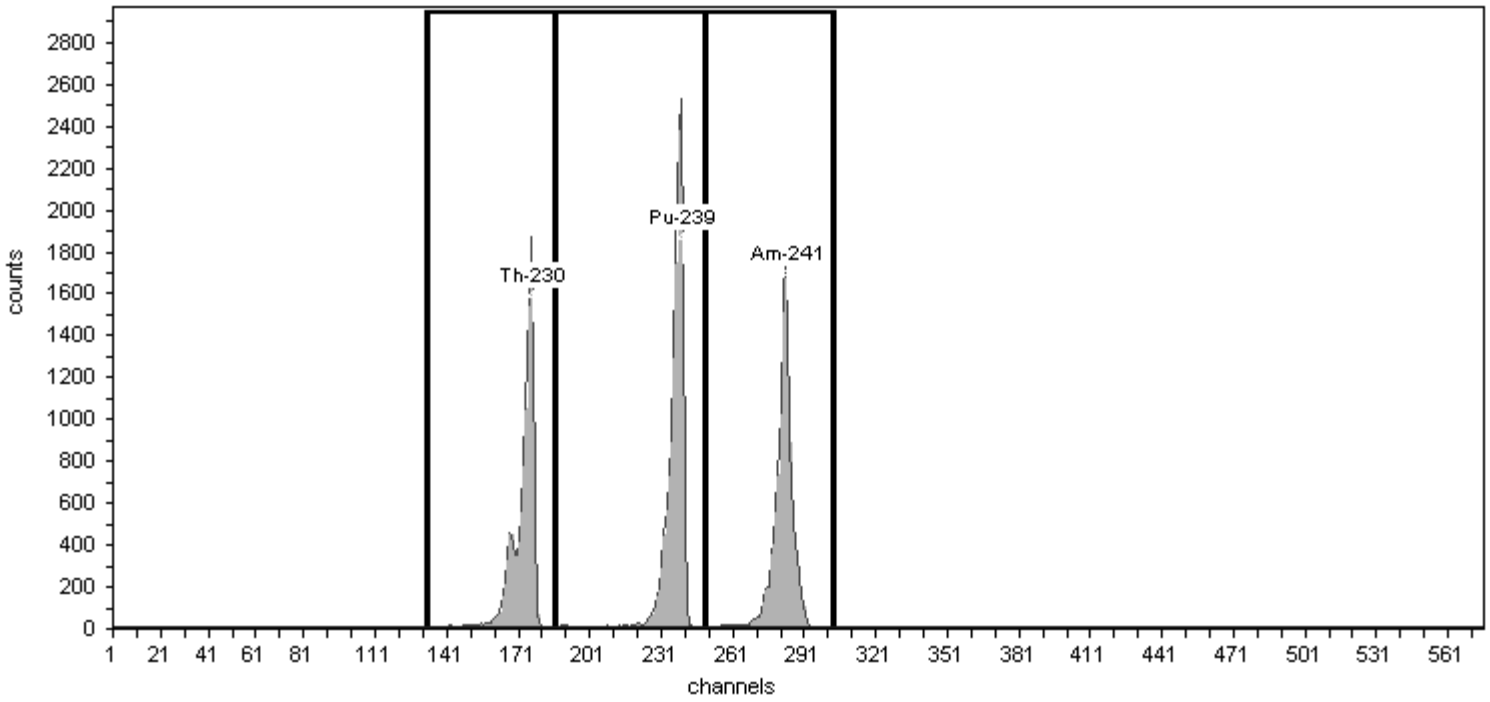
Certificate ID: 82233-334
Prepared by: Analytics

Certification Date: 6/3/2010 12:00:00PM
Description:

Acquisition

Detector: AV50 , SN: 50-060W2
Acquisition Start Date: 5/4/2014 9:03:28PM
Live Time: 140.00 min.
Real Time: 140.03 min.
Efficiency: 26.93% +/- 0.38% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	10,897.00	77.84
Pu-239	240	5.16	186	249	14,009.00	100.06
Am-241	284	5.49	249	303	11,497.00	82.12

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
6:52:57PM 5/5/2014

Calibration

Sample Name: IC-8875;AV51-20140504
Description:
Detector: AV51

Calibration Date: 5/5/2014 6:52:53PM
Analyst: 60040

Source Info

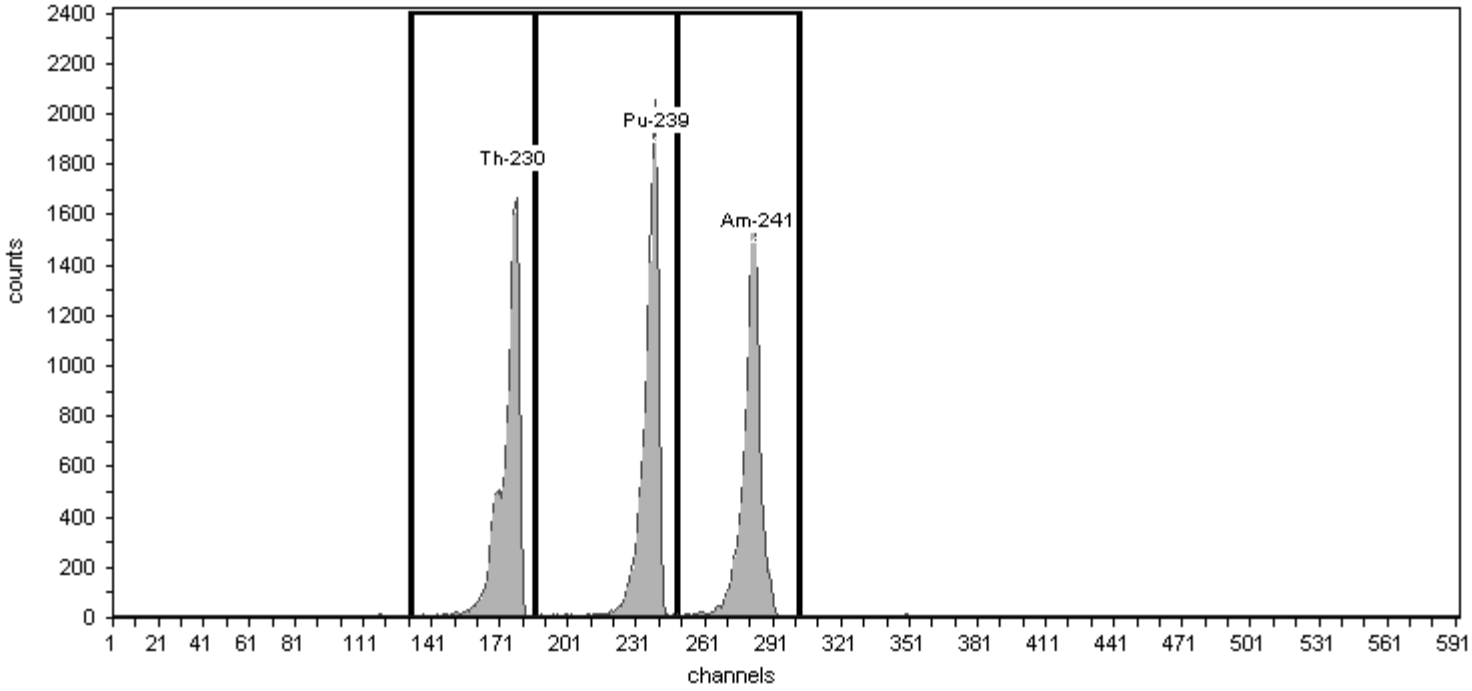
Certificate ID: 82234-334
Prepared by: Analytics

Certification Date: 6/2/2010 12:00:00PM
Description:

Acquisition

Detector: AV51 , SN: 48-109I1
Acquisition Start Date: 5/4/2014 9:03:44PM
Live Time: 140.00 min.
Real Time: 140.12 min.
Efficiency: 26.24% +/- 0.36% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	12,176.00	86.97
Pu-239	240	5.16	186	249	13,518.00	96.56
Am-241	284	5.49	249	303	12,347.00	88.19

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
6:53:38PM 5/5/2014

Calibration

Sample Name: IC-9792;AV56-20140504
Description:
Detector: AV56

Calibration Date: 5/5/2014 6:53:34PM
Analyst: 60040

Source Info

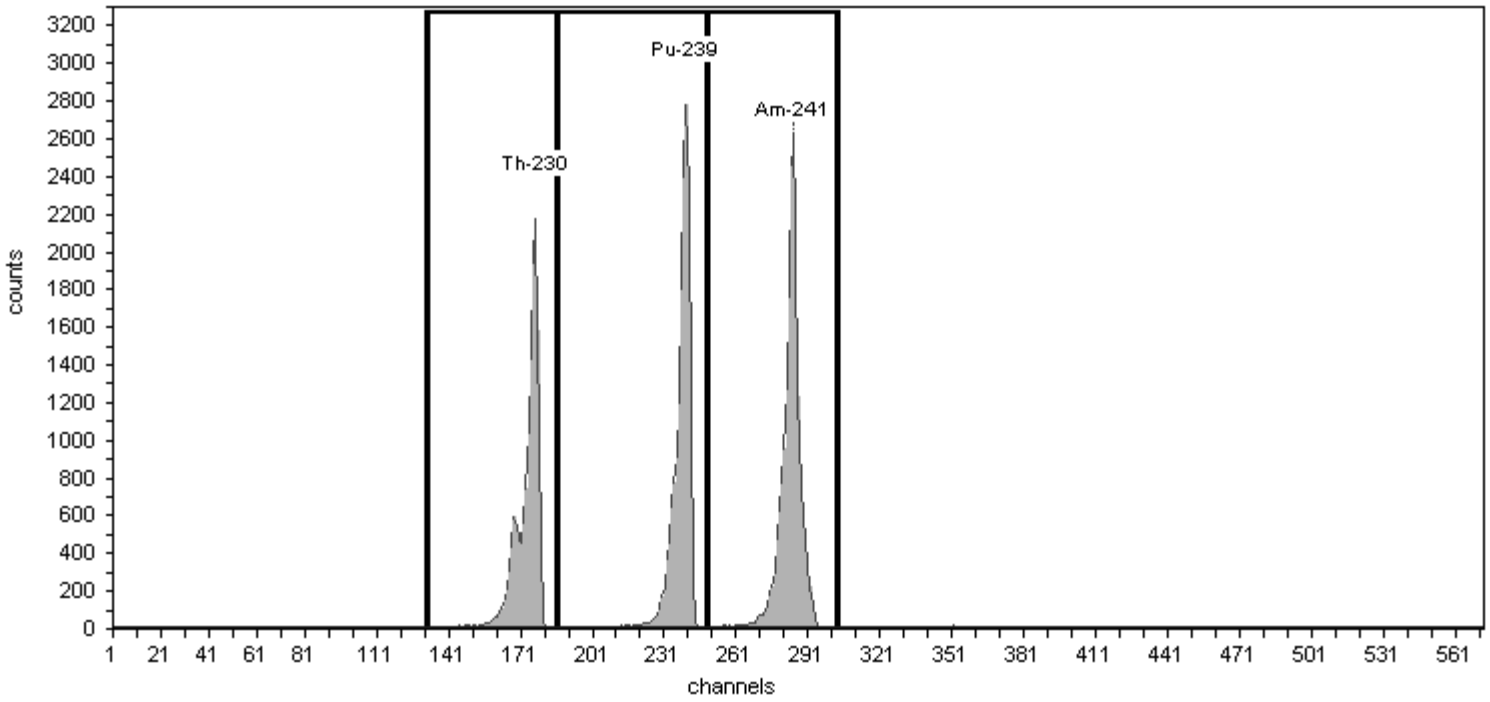
Certificate ID: 82240-334
Prepared by: Analytics

Certification Date: 6/8/2010 12:00:00PM
Description:

Acquisition

Detector: AV56 , SN: 52-059EE5
Acquisition Start Date: 5/4/2014 9:04:54PM
Live Time: 140.00 min.
Real Time: 140.12 min.
Efficiency: 26.09% +/- 0.30% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	13,567.00	96.91
Pu-239	240	5.16	186	249	15,909.00	113.64
Am-241	284	5.49	249	303	18,104.00	129.31

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:17:01PM 5/1/2014

Calibration

Sample Name: IC-9792;AV116-20140430
Description:
Detector: AV116

Calibration Date: 5/1/2014 1:16:57PM
Analyst: 60040

Source Info

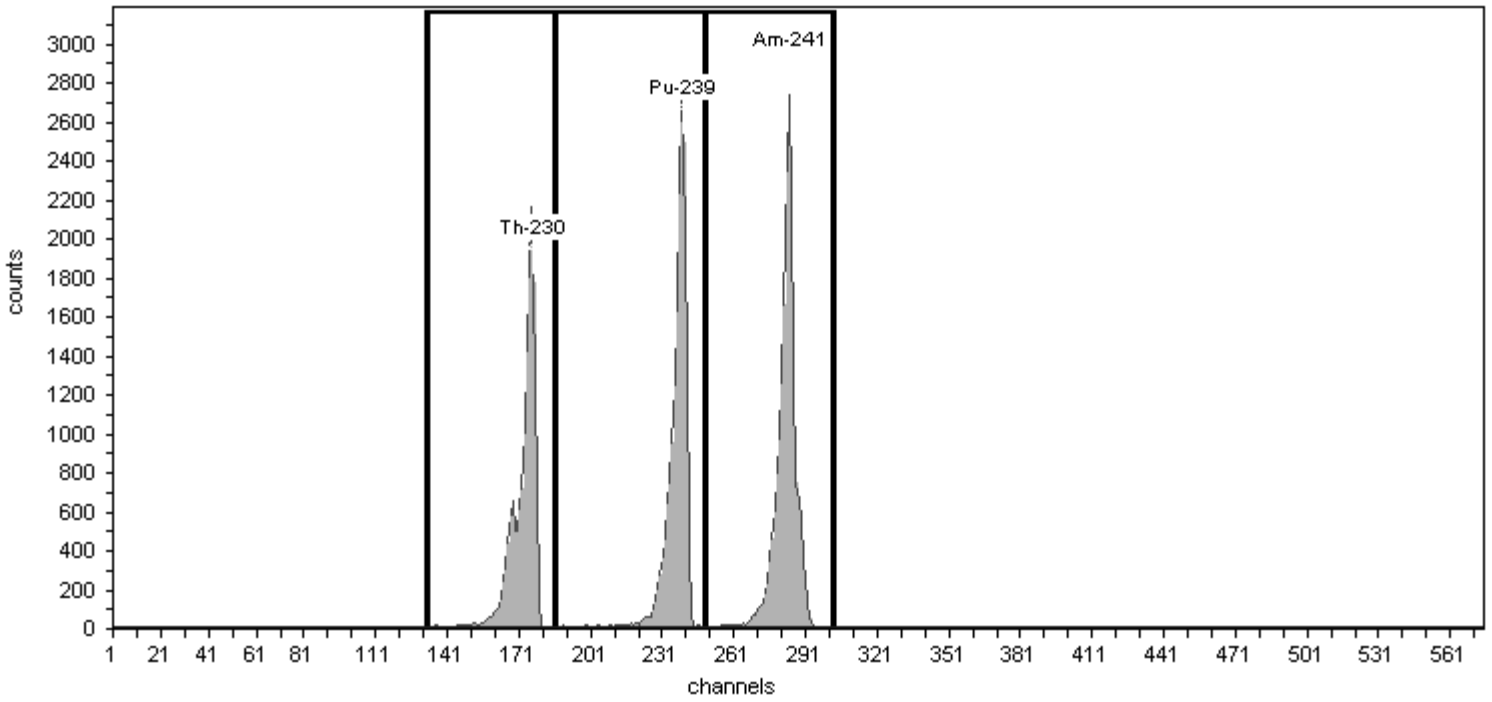
Certificate ID: 82240-334
Prepared by: Analytics

Certification Date: 6/8/2010 12:00:00PM
Description:

Acquisition

Detector: AV116 , SN: 49-034G1
Acquisition Start Date: 4/30/2014 10:55:12PM
Live Time: 140.00 min.
Real Time: 140.11 min.
Efficiency: 27.04% +/- 0.31% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	14,312.00	102.23
Pu-239	240	5.16	186	249	16,478.00	117.70
Am-241	284	5.49	249	303	18,564.00	132.60

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:17:07PM 5/1/2014

Calibration

Sample Name: IC-9793;AV117-20140430
Description:
Detector: AV117

Calibration Date: 5/1/2014 1:17:04PM
Analyst: 60040

Source Info

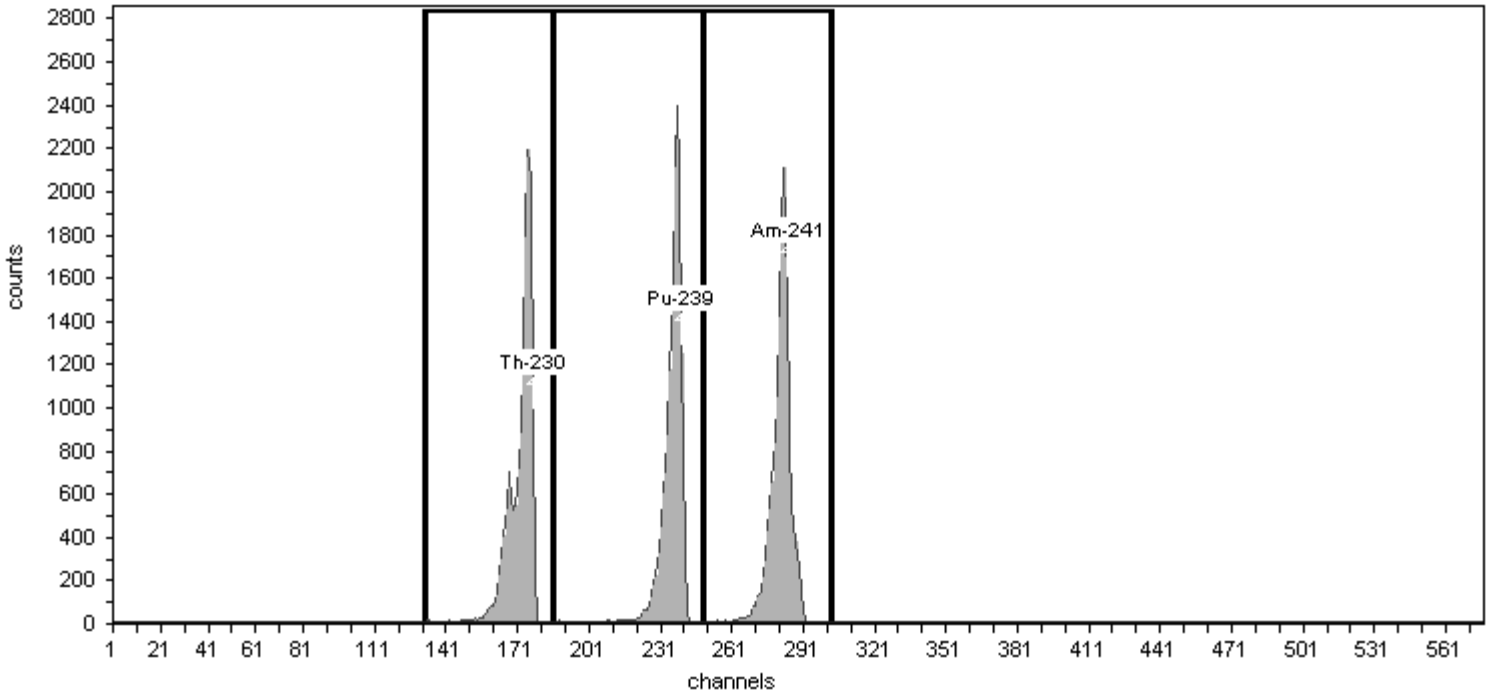
Certificate ID: 82241-334
Prepared by: Analytics

Certification Date: 6/8/2010 12:00:00PM
Description:

Acquisition

Detector: AV117 , SN: 49-037X4
Acquisition Start Date: 4/30/2014 10:55:33PM
Live Time: 140.00 min.
Real Time: 140.11 min.
Efficiency: 25.86% +/- 0.32% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	14,455.00	103.25
Pu-239	240	5.16	186	249	14,768.00	105.49
Am-241	284	5.49	249	303	14,281.00	102.01

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:17:13PM 5/1/2014

Calibration

Sample Name: IC-9794;AV118-20140430
Description:
Detector: AV118

Calibration Date: 5/1/2014 1:17:10PM
Analyst: 60040

Source Info

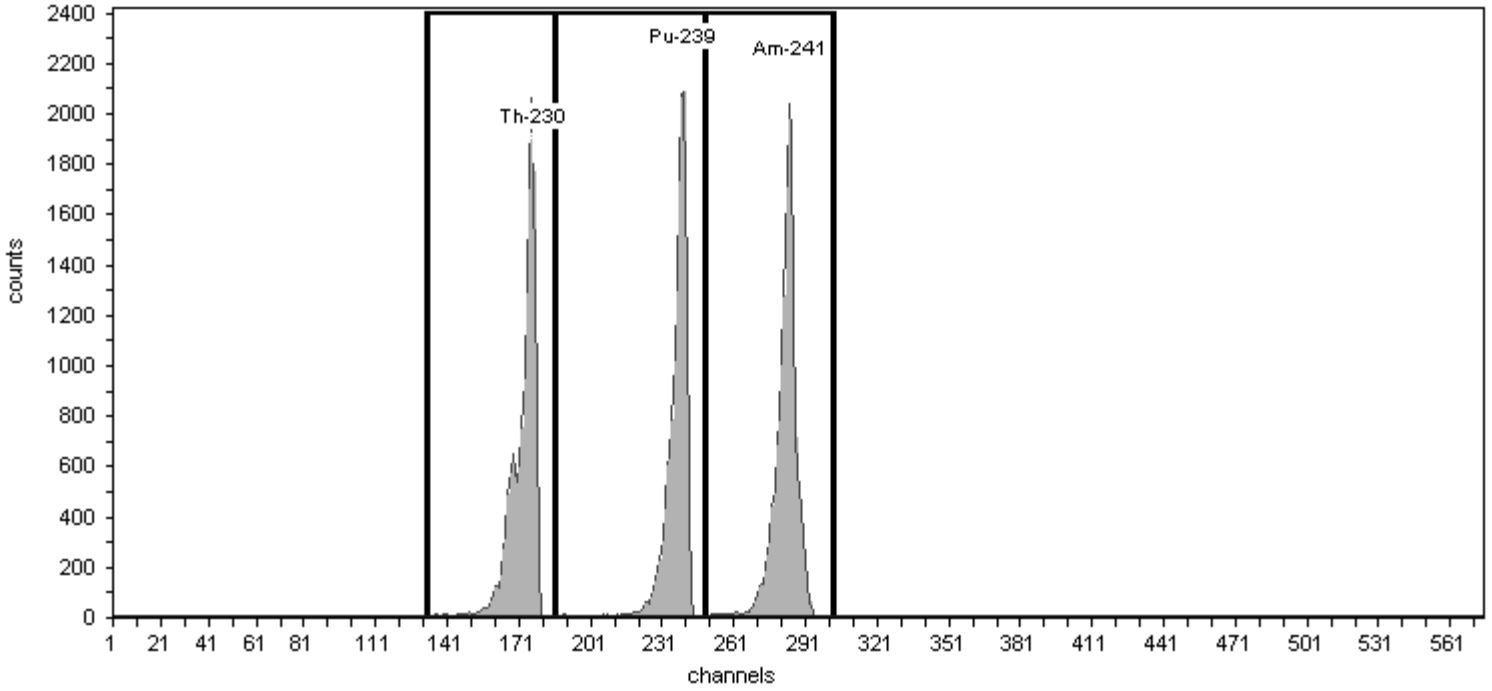
Certificate ID: 82242-334
Prepared by: Analytics

Certification Date: 6/8/2010 12:00:00PM
Description:

Acquisition

Detector: AV118 , SN: 49-037F4
Acquisition Start Date: 4/30/2014 10:55:46PM
Live Time: 140.00 min.
Real Time: 140.11 min.
Efficiency: 25.84% +/- 0.32% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	14,395.00	102.82
Pu-239	240	5.16	186	249	13,871.00	99.08
Am-241	284	5.49	249	303	15,367.00	109.76

Initial Calibration Verifications

Alpha Spectroscopy Calibration Summary

Detector: AV47

Lab Sample ID	Analysis Date	Reagent ID	Efficiency	Efficiency Limits	Efficiency Recovery	Recovery Limits
IC 160-120410/1	05/05/14 19:31	82246-334_00001	0.2589	0.20-0.32		
ICV 160-121080/1	05/08/14 00:18	82245-334_00001	0.2603	0.20-0.32	100.5	95-105
CCV 160-153196/1	10/30/14 14:14	82246-334_00001	0.2535	0.20-0.32	97.9	95-105

Detector: AV49

Lab Sample ID	Analysis Date	Reagent ID	Efficiency	Efficiency Limits	Efficiency Recovery	Recovery Limits
IC 160-120271/1	05/04/14 21:03	82232-334_00001	0.2653	0.20-0.32		
ICV 160-121364/1	05/08/14 14:34	82247-334_00001	0.2545	0.20-0.32	95.9	95-105
CCV 160-153198/1	10/30/14 14:15	82232-334_00001	0.2642	0.20-0.32	99.6	95-105

Detector: AV50

Lab Sample ID	Analysis Date	Reagent ID	Efficiency	Efficiency Limits	Efficiency Recovery	Recovery Limits
IC 160-120272/1	05/04/14 21:03	82233-334_00001	0.2693	0.20-0.32		
ICV 160-121365/1	05/08/14 14:34	82232-334_00001	0.2692	0.20-0.32	100.0	95-105
CCV 160-153185/1	10/29/14 22:44	82233-334_00001	0.2654	0.20-0.32	98.6	95-105

Detector: AV51

Lab Sample ID	Analysis Date	Reagent ID	Efficiency	Efficiency Limits	Efficiency Recovery	Recovery Limits
IC 160-120273/1	05/04/14 21:03	82234-334_00001	0.2624	0.20-0.32		
ICV 160-121366/1	05/08/14 17:17	82233-334_00001	0.2693	0.20-0.32	102.6	95-105
CCV 160-153199/1	10/30/14 17:43	82234-334_00001	0.2557	0.20-0.32	97.4	95-105

Detector: AV56

Lab Sample ID	Analysis Date	Reagent ID	Efficiency	Efficiency Limits	Efficiency Recovery	Recovery Limits
IC 160-120278/1	05/04/14 21:04	82240-334_00001	0.2609	0.20-0.32		
ICV 160-121369/1	05/08/14 17:18	82247-334_00001	0.2519	0.20-0.32	96.5	95-105
CCV 160-153203/1	10/30/14 14:16	82240-334_00001	0.2588	0.20-0.32	99.2	95-105

Detector: AV116

Lab Sample ID	Analysis Date	Reagent ID	Efficiency	Efficiency Limits	Efficiency Recovery	Recovery Limits
IC 160-119675/1	04/30/14 22:55	82240-334_00001	0.2704	0.20-0.32		
ICV 160-121419/1	05/11/14 22:06	82245-334_00001	0.2603	0.20-0.32	96.2	95-105
CCV 160-153119/1	10/27/14 22:34	82240-334_00001	0.2683	0.20-0.32	99.2	95-105

Detector: AV117

Lab Sample ID	Analysis Date	Reagent ID	Efficiency	Efficiency Limits	Efficiency Recovery	Recovery Limits
IC 160-119676/1	04/30/14 22:55	82241-334_00001	0.2586	0.20-0.32		
ICV 160-121420/1	05/11/14 22:06	82240-334_00001	0.2603	0.20-0.32	100.7	95-105
CCV 160-153120/1	10/27/14 22:34	82241-334_00001	0.2551	0.20-0.32	98.7	95-105

Detector: AV118

Lab Sample ID	Analysis Date	Reagent ID	Efficiency	Efficiency Limits	Efficiency Recovery	Recovery Limits
IC 160-119677/1	04/30/14 22:55	82242-334_00001	0.2584	0.20-0.32		
ICV 160-121421/1	05/11/14 23:19	82241-334_00001	0.2655	0.20-0.32	102.8	95-105
CCV 160-153121/1	10/27/14 22:35	82242-334_00001	0.2533	0.20-0.32	98.0	95-105

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
2:20:46PM 5/8/2014

Calibration

Sample Name: ICV-9884;AV47-20140507
Description:
Detector: AV47

Calibration Date: 5/8/2014 2:20:43PM
Analyst: 60040

Source Info

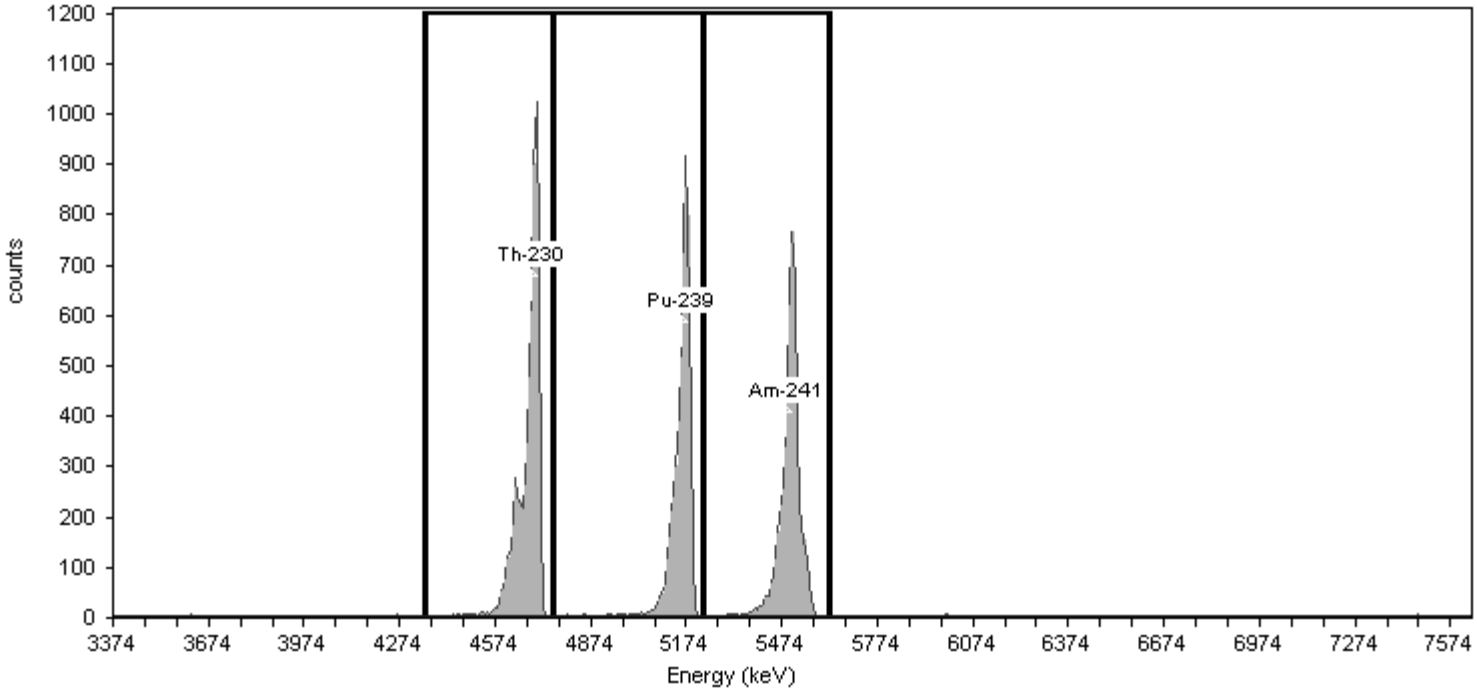
Certificate ID: 82245-334
Prepared by: Analytics

Certification Date: 6/9/2010 12:00:00PM
Description:

Acquisition

Detector: AV47 , SN: 49-155N5
Acquisition Start Date: 5/8/2014 12:18:28AM
Live Time: 60.00 min.
Real Time: 60.04 min.
Efficiency: 26.03% +/- 0.48% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	6,239.00	103.98
Pu-239	240	5.16	186	249	5,170.00	86.17
Am-241	284	5.49	249	303	5,155.00	85.92

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
4:56:35PM 5/8/2014

Calibration

Sample Name: ICV-9886;AV49-050814
Description:
Detector: AV49

Calibration Date: 5/8/2014 4:56:32PM
Analyst: 60040

Source Info

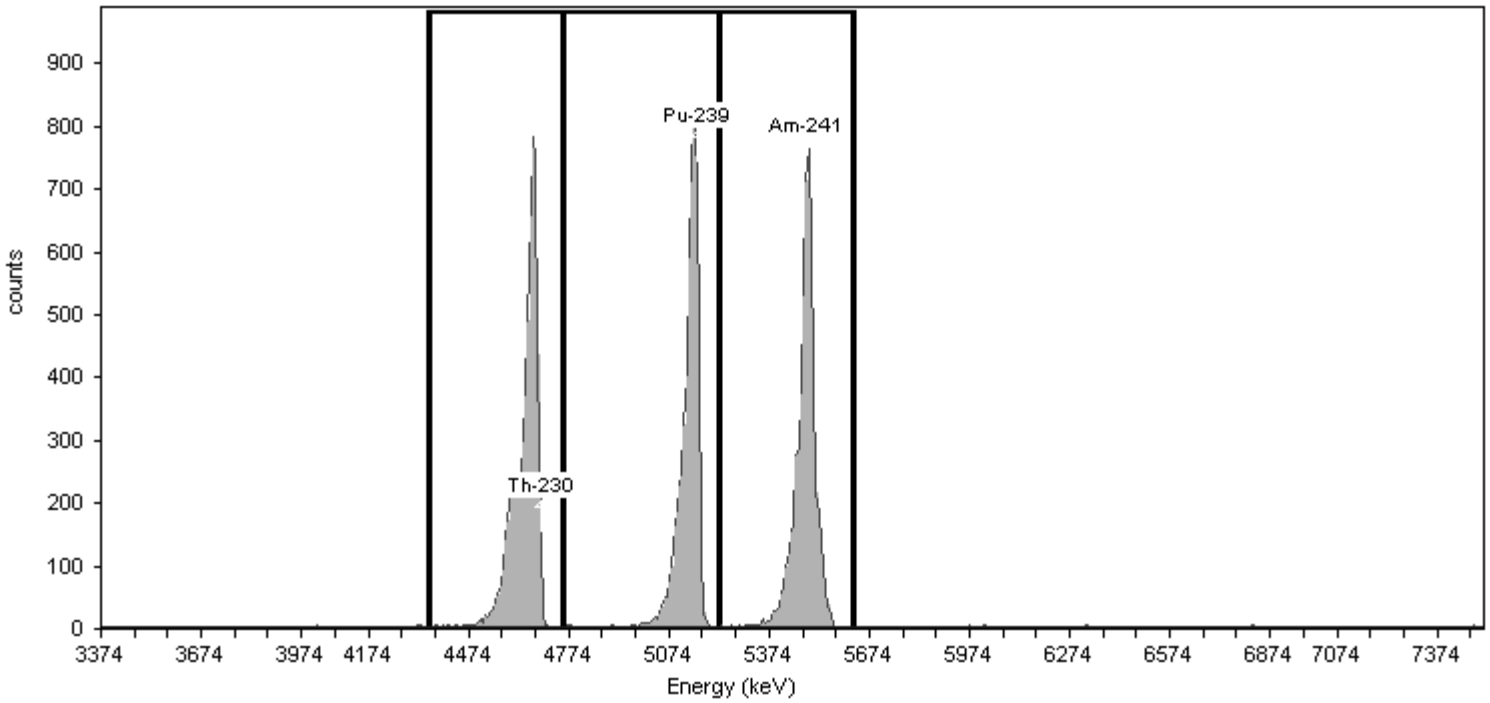
Certificate ID: 82247-334
Prepared by: Analytics

Certification Date: 6/10/2010 12:00:00PM
Description:

Acquisition

Detector: AV49 , SN: 47-043hh4
Acquisition Start Date: 5/8/2014 2:34:10PM
Live Time: 60.00 min.
Real Time: 60.02 min.
Efficiency: 25.45% +/- 0.45% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	5,790.00	96.50
Pu-239	240	5.16	186	249	5,422.00	90.37
Am-241	284	5.49	249	303	5,531.00	92.18

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
4:56:41PM 5/8/2014

Calibration

Sample Name: ICV-7107;AV50-050814
Description:
Detector: AV50

Calibration Date: 5/8/2014 4:56:38PM
Analyst: 60040

Source Info

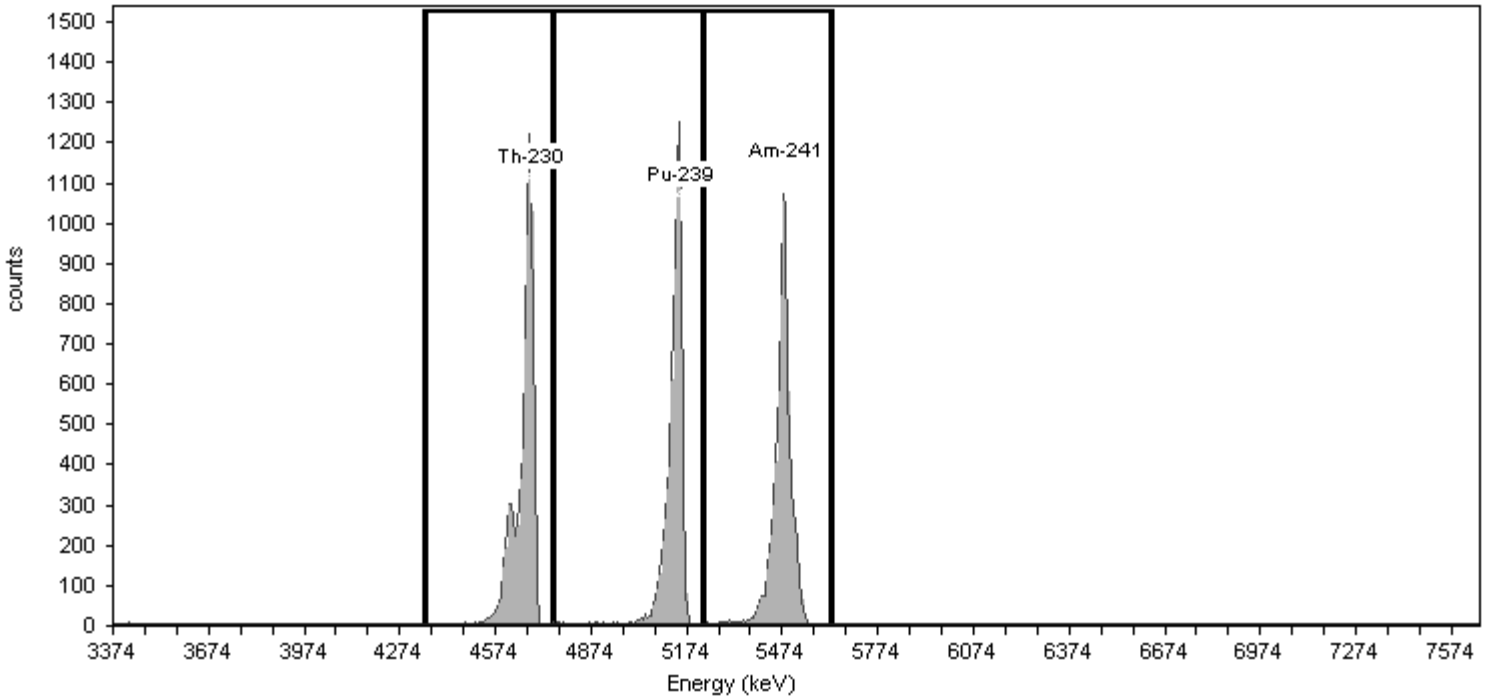
Certificate ID: 82232-334
Prepared by: Analytics

Certification Date: 6/3/2010 12:00:00PM
Description:

Acquisition

Detector: AV50 , SN: 50-060W2
Acquisition Start Date: 5/8/2014 2:34:26PM
Live Time: 60.00 min.
Real Time: 60.02 min.
Efficiency: 26.92% +/- 0.41% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	7,259.00	120.98
Pu-239	240	5.16	186	249	7,052.00	117.53
Am-241	284	5.49	249	303	7,031.00	117.18

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
7:24:12PM 5/11/2014

Calibration

Sample Name: ICV-8874;AV51-20140508
Description:
Detector: AV51

Calibration Date: 5/11/2014 7:11:36PM
Analyst: 60040

Source Info

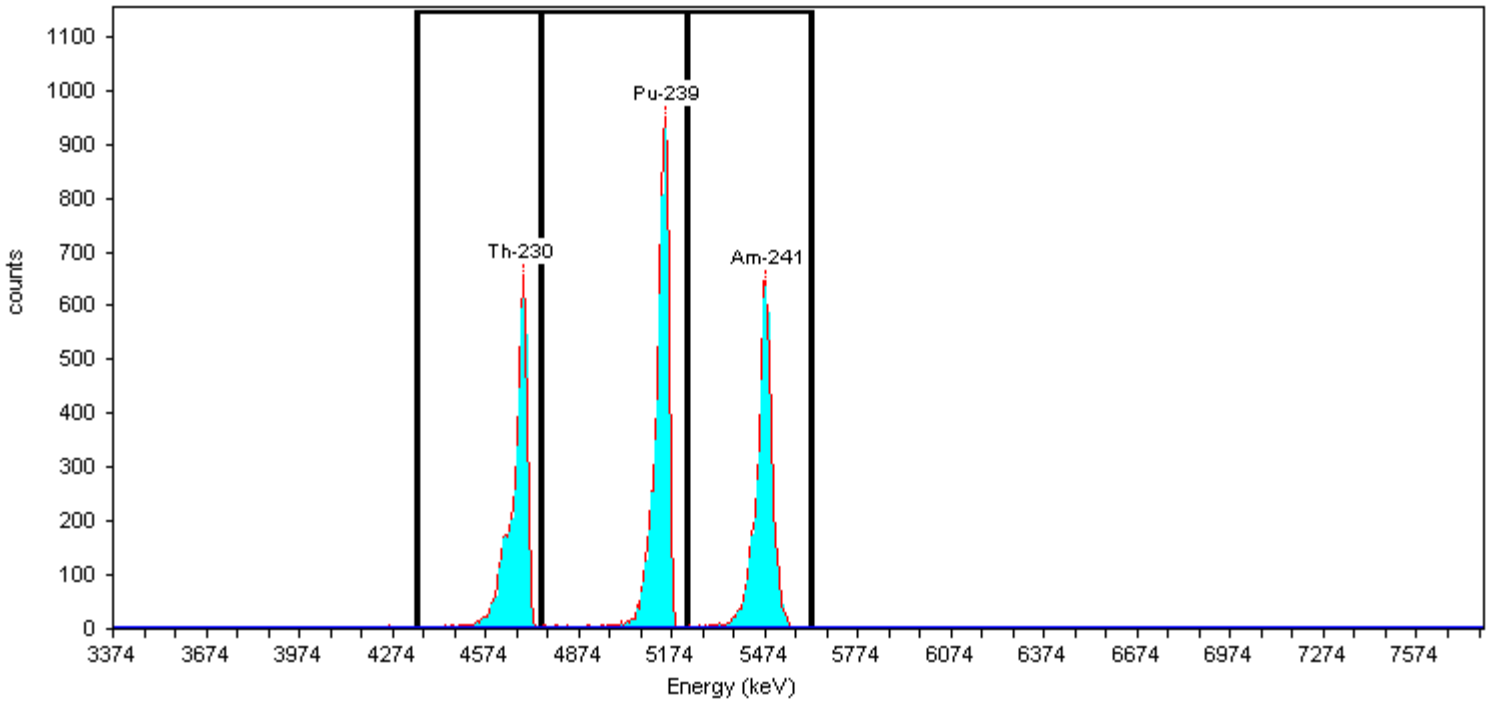
Certificate ID: 82233-334
Prepared by: Analytics

Certification Date: 6/3/2010 12:00:00PM
Description:

Acquisition

Detector: AV51 , SN: 48-109I1
Acquisition Start Date: 5/8/2014 5:17:28PM
Live Time: 60.00 min.
Real Time: 60.02 min.
Efficiency: 26.93% +/- 0.50% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	4,588.00	76.47
Pu-239	240	5.16	186	249	6,104.00	101.73
Am-241	284	5.49	249	303	4,927.00	82.12

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
7:24:33PM 5/11/2014

Calibration

Sample Name: ICV-9886;AV56-20140508
Description:
Detector: AV56

Calibration Date: 5/11/2014 7:11:51PM
Analyst: 60040

Source Info

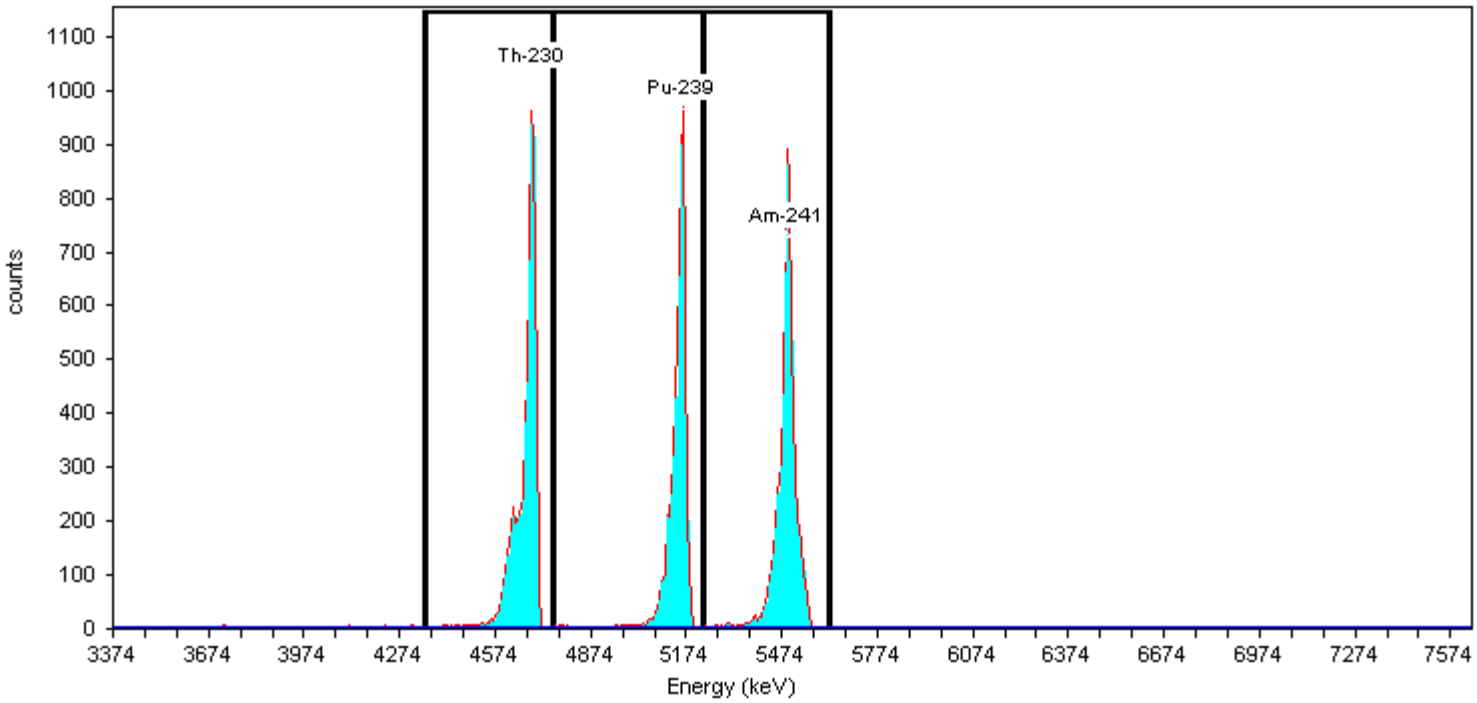
Certificate ID: 82247-334
Prepared by: Analytics

Certification Date: 6/10/2010 12:00:00PM
Description:

Acquisition

Detector: AV56 , SN: 52-059EE5
Acquisition Start Date: 5/8/2014 5:18:05PM
Live Time: 60.00 min.
Real Time: 60.02 min.
Efficiency: 25.19% +/- 0.45% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	5,679.00	94.65
Pu-239	240	5.16	186	249	5,201.00	86.68
Am-241	284	5.49	249	303	5,671.00	94.52

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
11:09:36PM 5/11/2014

Calibration

Sample Name: ICV-9884;AV116-20140511
Description:
Detector: AV116

Calibration Date: 5/11/2014 11:09:33PM
Analyst: 60040

Source Info

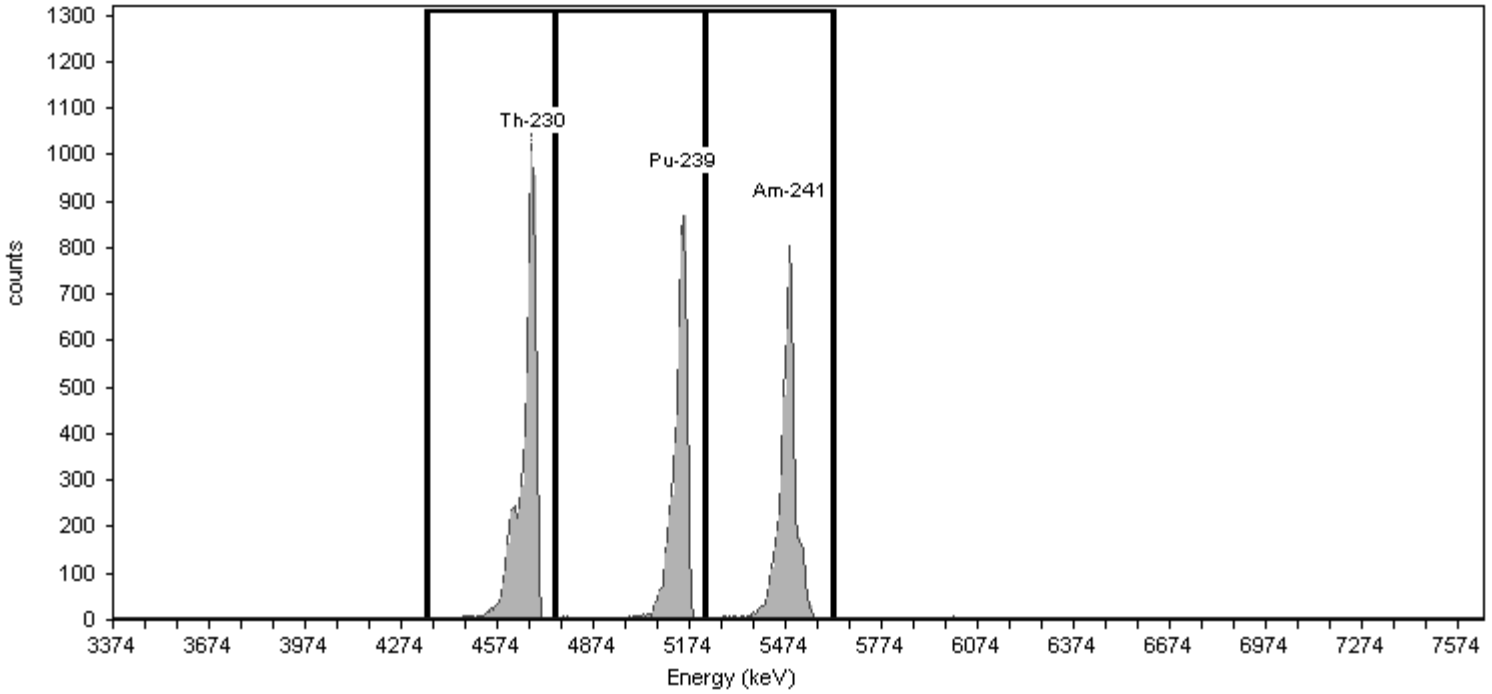
Certificate ID: 82245-334
Prepared by: Analytics

Certification Date: 6/9/2010 12:00:00PM
Description:

Acquisition

Detector: AV116 , SN: 49-034G1
Acquisition Start Date: 5/11/2014 10:06:08PM
Live Time: 60.00 min.
Real Time: 60.06 min.
Efficiency: 26.03% +/- 0.48% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	6,269.00	104.48
Pu-239	240	5.16	186	249	5,050.00	84.17
Am-241	284	5.49	249	303	5,237.00	87.28

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
11:09:42PM 5/11/2014

Calibration

Sample Name: ICV-9792;AV117-20140511
Description:
Detector: AV117

Calibration Date: 5/11/2014 11:09:39PM
Analyst: 60040

Source Info

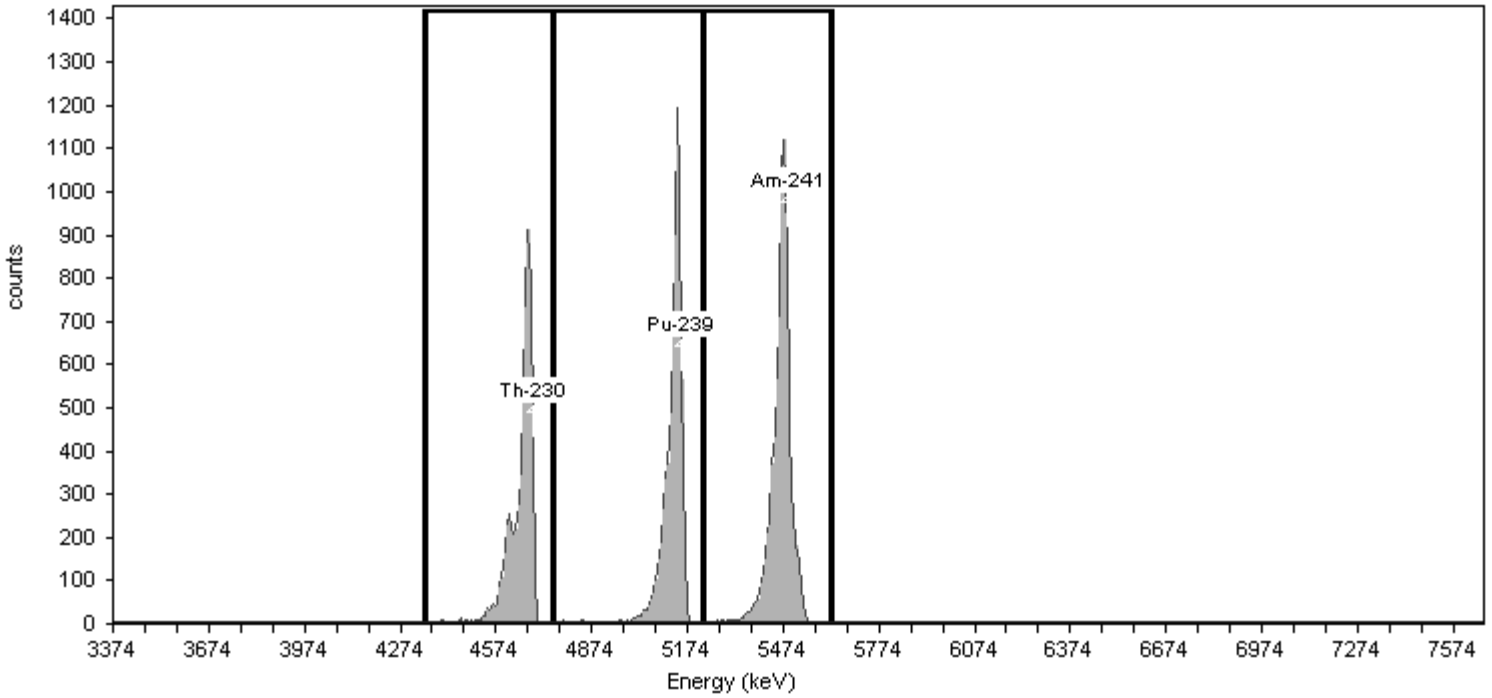
Certificate ID: 82240-334
Prepared by: Analytics

Certification Date: 6/8/2010 12:00:00PM
Description:

Acquisition

Detector: AV117 , SN: 49-037X4
Acquisition Start Date: 5/11/2014 10:06:18PM
Live Time: 60.00 min.
Real Time: 60.06 min.
Efficiency: 26.03% +/- 0.41% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	5,860.00	97.67
Pu-239	240	5.16	186	249	6,784.00	113.07
Am-241	284	5.49	249	303	7,709.00	128.48

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
12:50:08AM 5/12/2014

Calibration

Sample Name: ICV-9793;AV118-20140511
Description:
Detector: AV118

Calibration Date: 5/12/2014 12:50:05AM
Analyst: 60040

Source Info

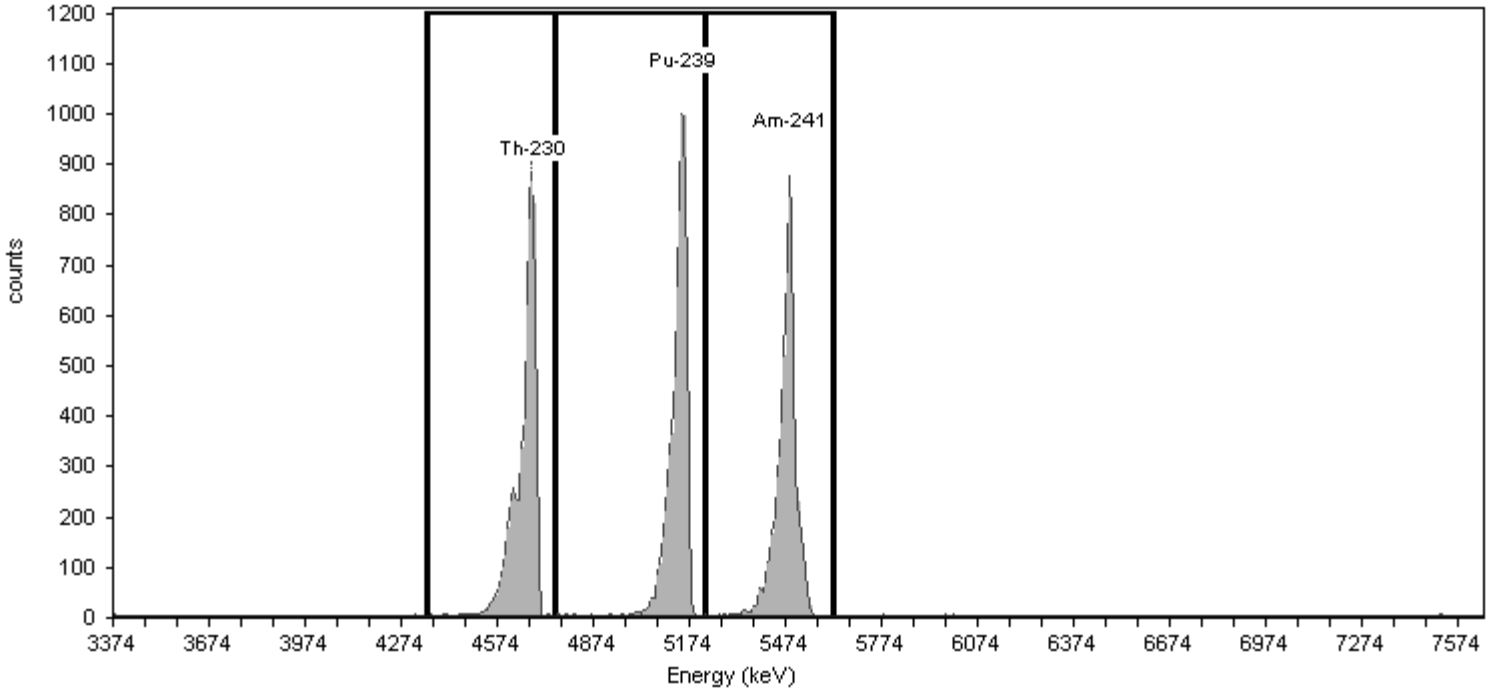
Certificate ID: 82241-334
Prepared by: Analytics

Certification Date: 6/8/2010 12:00:00PM
Description:

Acquisition

Detector: AV118 , SN: 49-037F4
Acquisition Start Date: 5/11/2014 11:19:52PM
Live Time: 60.00 min.
Real Time: 61.98 min.
Efficiency: 26.55% +/- 0.44% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	6,293.00	104.88
Pu-239	240	5.16	186	249	6,621.00	110.35
Am-241	284	5.49	249	303	6,232.00	103.87

Monthly Calibration Verifications

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
3:25:45PM 10/30/2014

Calibration

Sample Name: CCV-9885;AV47-20141030
Description:
Detector: AV47

Calibration Date: 10/30/2014 3:25:41PM
Analyst: 60040

Source Info

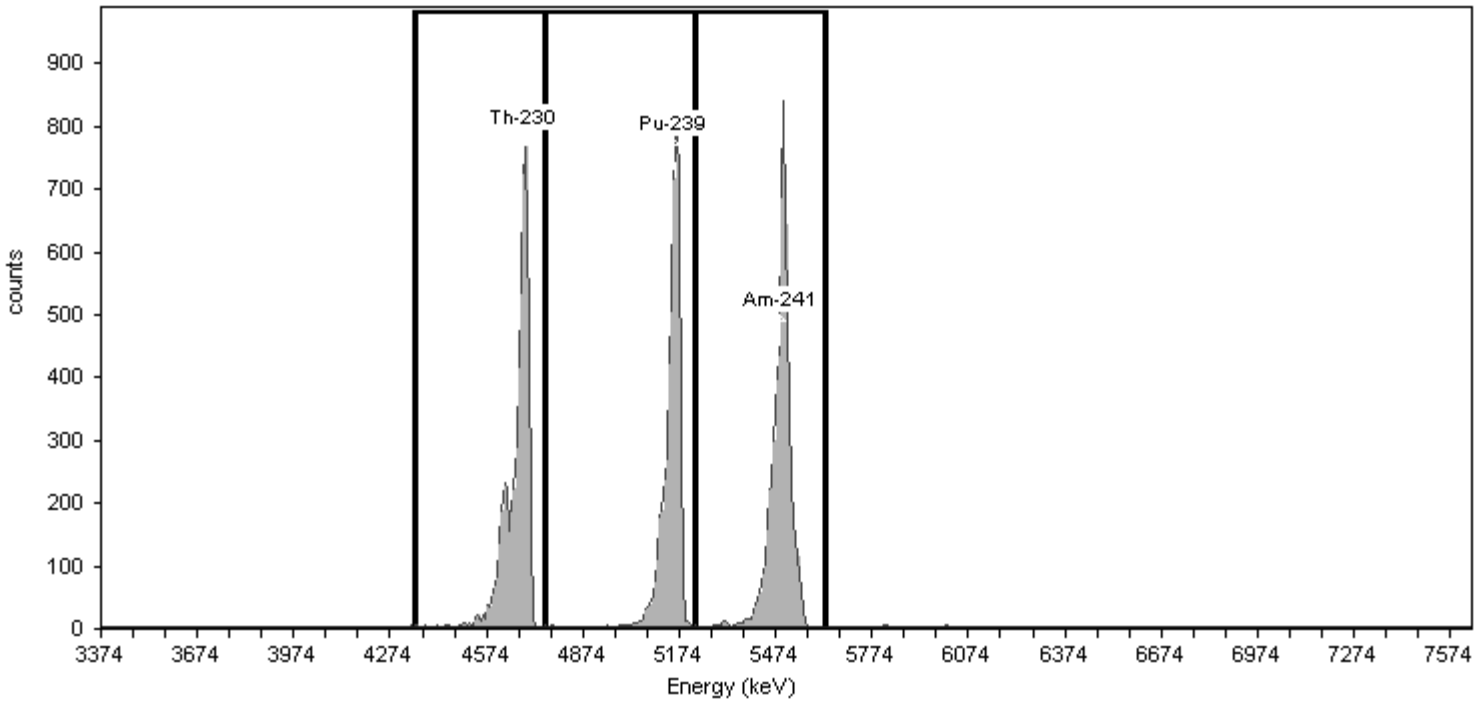
Certificate ID: 82246-334
Prepared by: Analytics

Certification Date: 6/9/2010 12:00:00PM
Description:

Acquisition

Detector: AV47 , SN: 49-155N5
Acquisition Start Date: 10/30/2014 2:14:56PM
Live Time: 60.00 min.
Real Time: 60.03 min.
Efficiency: 25.35% +/- 0.48% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	5,124.00	85.40
Pu-239	240	5.16	186	249	4,831.00	80.52
Am-241	284	5.49	249	303	5,459.00	90.98

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
3:25:55PM 10/30/2014

Calibration

Sample Name: CCV-7107;AV49-20141030
Description:
Detector: AV49

Calibration Date: 10/30/2014 3:25:52PM
Analyst: 60040

Source Info

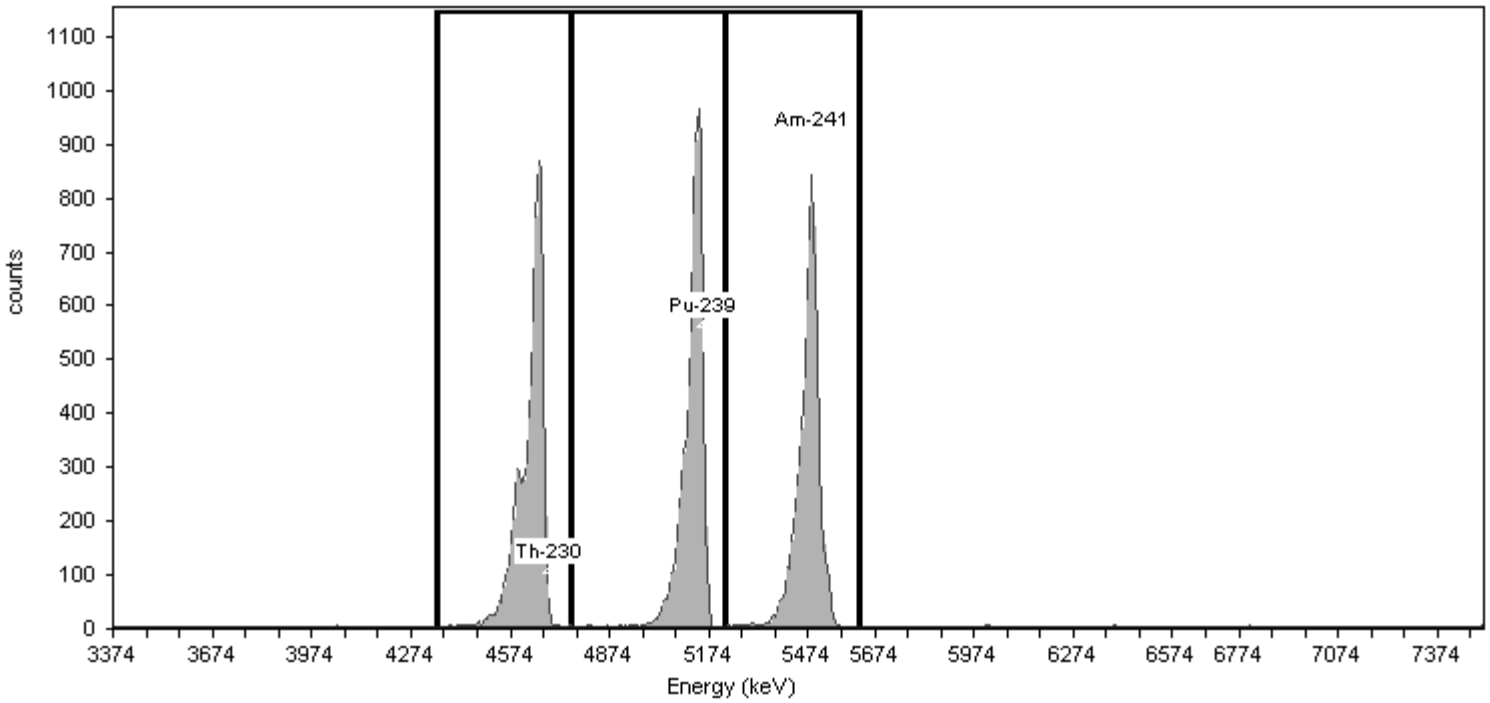
Certificate ID: 82232-334
Prepared by: Analytics

Certification Date: 6/3/2010 12:00:00PM
Description:

Acquisition

Detector: AV49 , SN: 47-043hh4
Acquisition Start Date: 10/30/2014 2:15:22PM
Live Time: 60.00 min.
Real Time: 60.03 min.
Efficiency: 26.42% +/- 0.41% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	7,073.00	117.88
Pu-239	240	5.16	186	249	7,148.00	119.13
Am-241	284	5.49	249	303	6,743.00	112.38

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
2:02:16PM 10/30/2014

Calibration

Sample Name: CCV-8874;AV50-20141029
Description:
Detector: AV50

Calibration Date: 10/30/2014 2:02:13PM
Analyst: 60040

Source Info

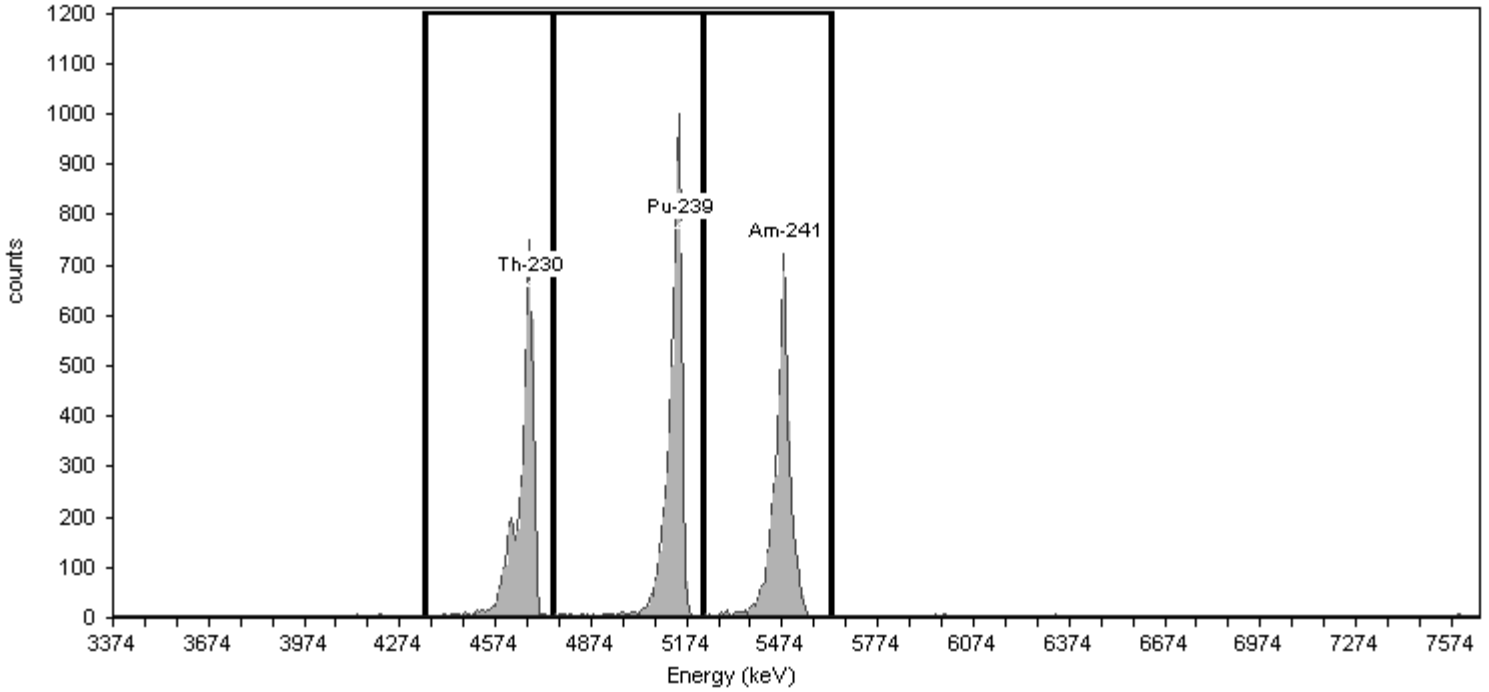
Certificate ID: 82233-334
Prepared by: Analytics

Certification Date: 6/3/2010 12:00:00PM
Description:

Acquisition

Detector: AV50 , SN: 50-060W2
Acquisition Start Date: 10/29/2014 10:44:01PM
Live Time: 60.00 min.
Real Time: 60.02 min.
Efficiency: 26.54% +/- 0.50% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	4,683.00	78.05
Pu-239	240	5.16	186	249	5,815.00	96.92
Am-241	284	5.49	249	303	4,881.00	81.35

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
7:22:38PM 10/30/2014

Calibration

Sample Name: CCV-8875;AV51-20141030
Description:
Detector: AV51

Calibration Date: 10/30/2014 7:22:32PM
Analyst: 60040

Source Info

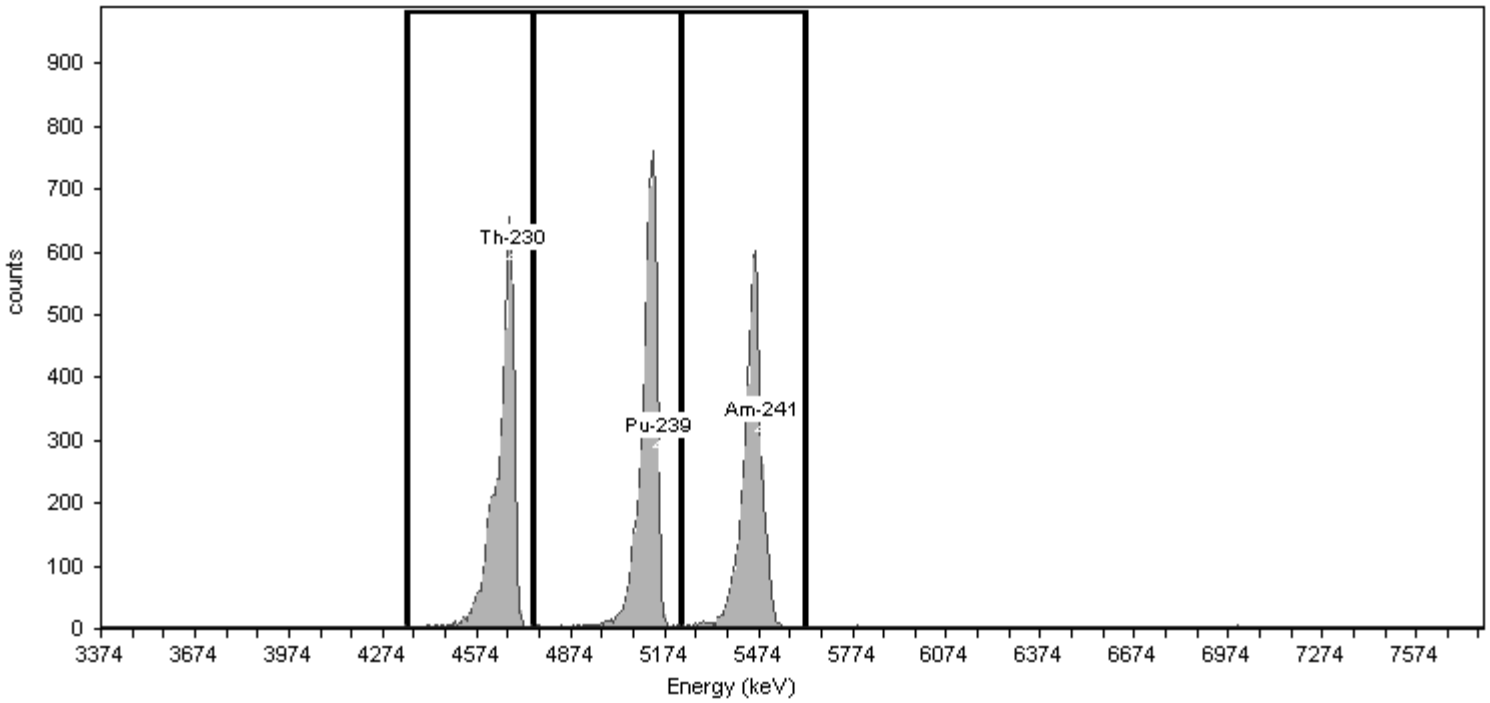
Certificate ID: 82234-334
Prepared by: Analytics

Certification Date: 6/2/2010 12:00:00PM
Description:

Acquisition

Detector: AV51 , SN: 48-109I1
Acquisition Start Date: 10/30/2014 5:43:06PM
Live Time: 60.00 min.
Real Time: 60.01 min.
Efficiency: 25.57% +/- 0.47% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	5,103.00	85.05
Pu-239	240	5.16	186	249	5,620.00	93.67
Am-241	284	5.49	249	303	5,156.00	85.93

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
3:26:27PM 10/30/2014

Calibration

Sample Name: CCV-9792;AV56-20141030
Description:
Detector: AV56

Calibration Date: 10/30/2014 3:26:24PM
Analyst: 60040

Source Info

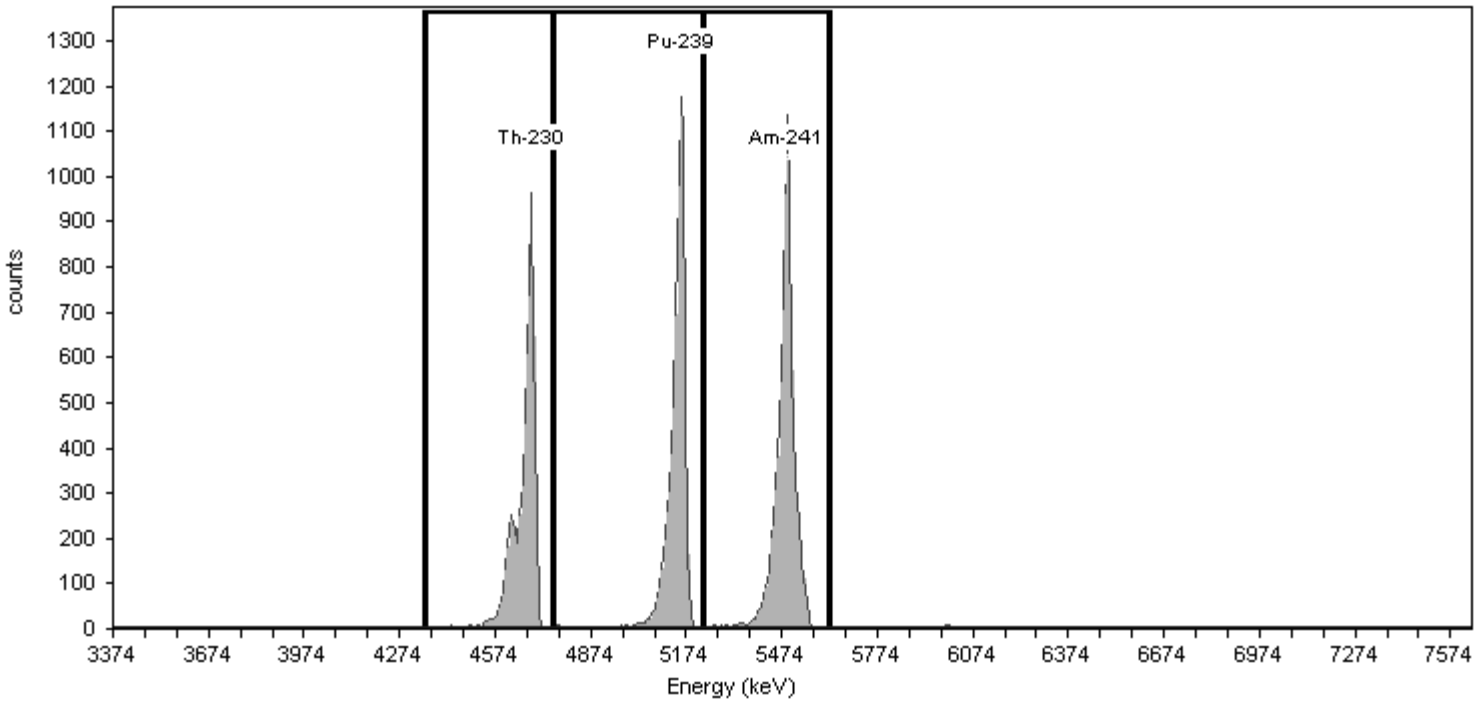
Certificate ID: 82240-334
Prepared by: Analytics

Certification Date: 6/8/2010 12:00:00PM
Description:

Acquisition

Detector: AV56 , SN: 52-059EE5
Acquisition Start Date: 10/30/2014 2:16:06PM
Live Time: 60.00 min.
Real Time: 60.03 min.
Efficiency: 25.88% +/- 0.41% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	5,763.00	96.05
Pu-239	240	5.16	186	249	6,800.00	113.33
Am-241	284	5.49	249	303	7,667.00	127.78

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
8:01:31PM 10/29/2014

Calibration

Sample Name: CCV-9792;AV116-20141027
Description:
Detector: AV116

Calibration Date: 10/29/2014 8:01:28PM
Analyst: 60040

Source Info

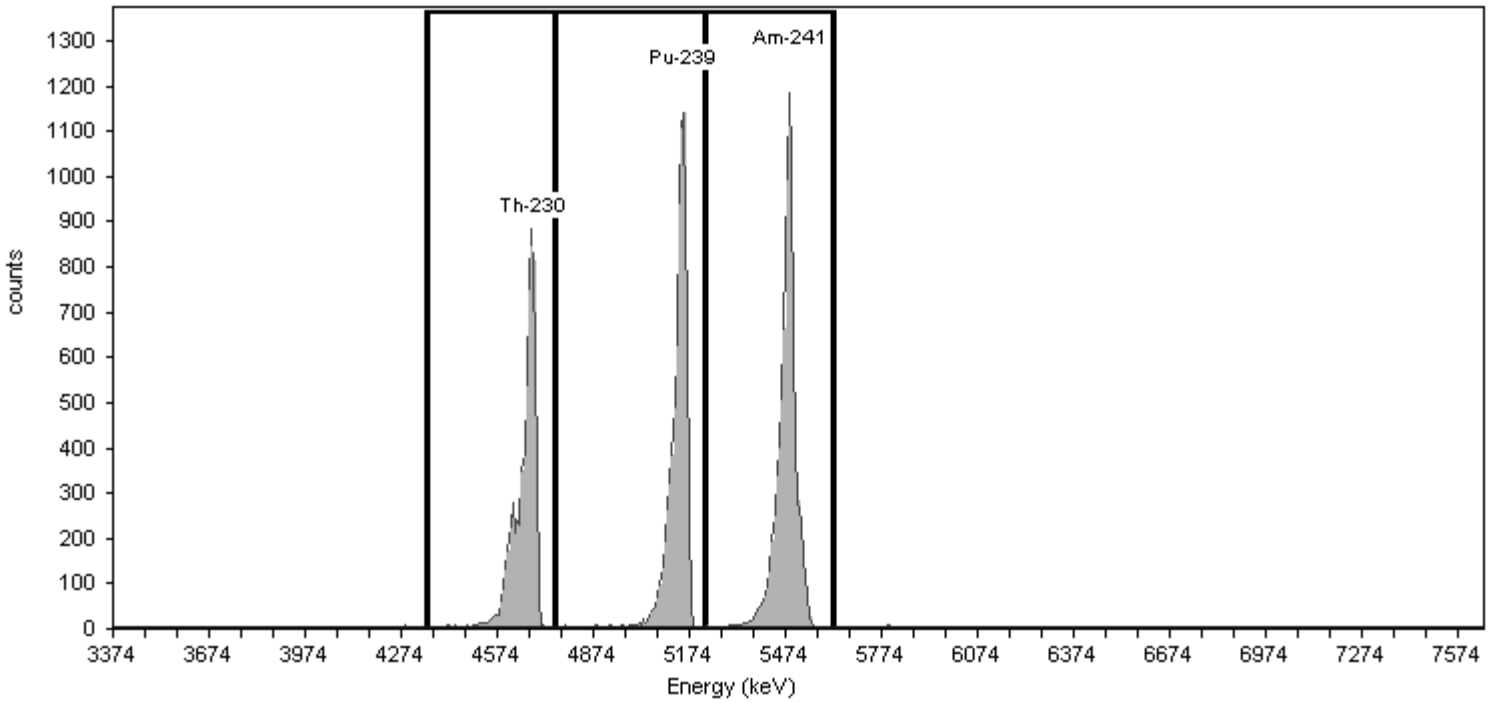
Certificate ID: 82240-334
Prepared by: Analytics

Certification Date: 6/8/2010 12:00:00PM
Description:

Acquisition

Detector: AV116 , SN: 49-034G1
Acquisition Start Date: 10/27/2014 10:34:45PM
Live Time: 60.00 min.
Real Time: 60.02 min.
Efficiency: 26.83% +/- 0.42% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	5,943.00	99.05
Pu-239	240	5.16	186	249	6,989.00	116.48
Am-241	284	5.49	249	303	8,036.00	133.93

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
8:01:42PM 10/29/2014

Calibration

Sample Name: CCV-9793;AV117-20141027
Description:
Detector: AV117

Calibration Date: 10/29/2014 8:01:38PM
Analyst: 60040

Source Info

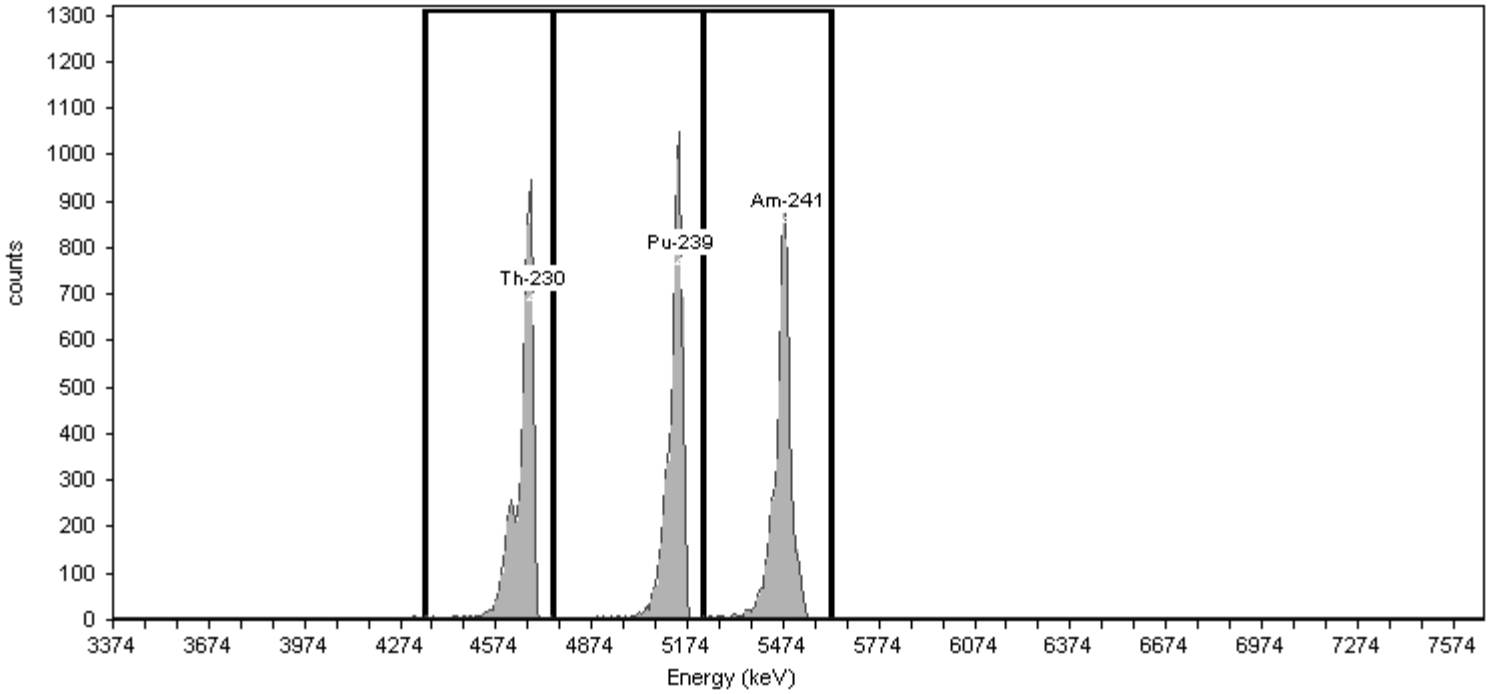
Certificate ID: 82241-334
Prepared by: Analytics

Certification Date: 6/8/2010 12:00:00PM
Description:

Acquisition

Detector: AV117 , SN: 49-037X4
Acquisition Start Date: 10/27/2014 10:34:47PM
Live Time: 60.00 min.
Real Time: 60.02 min.
Efficiency: 25.51% +/- 0.43% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	6,087.00	101.45
Pu-239	240	5.16	186	249	6,348.00	105.80
Am-241	284	5.49	249	303	5,959.00	99.32

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
8:01:51PM 10/29/2014

Calibration

Sample Name: CCV-9794;AV118-20141027
Description:
Detector: AV118

Calibration Date: 10/29/2014 8:01:48PM
Analyst: 60040

Source Info

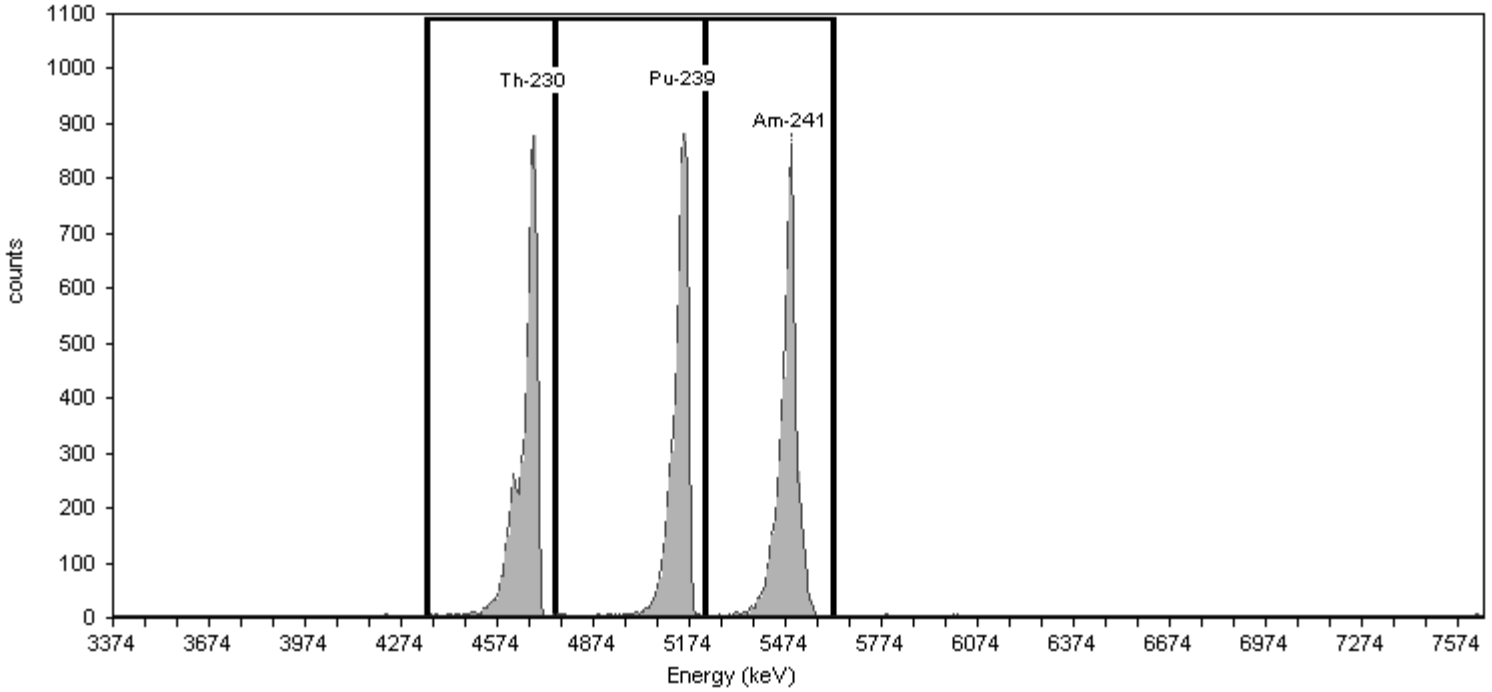
Certificate ID: 82242-334
Prepared by: Analytics

Certification Date: 6/8/2010 12:00:00PM
Description:

Acquisition

Detector: AV118 , SN: 49-037F4
Acquisition Start Date: 10/27/2014 10:35:07PM
Live Time: 60.00 min.
Real Time: 60.02 min.
Efficiency: 25.33% +/- 0.43% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	6,112.00	101.87
Pu-239	240	5.16	186	249	5,920.00	98.67
Am-241	284	5.49	249	303	6,305.00	105.08

Monthly Backgrounds

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Background Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
5:30:38PM 10/24/2014

Sample

Sample Name: ICB;AV47
Comment:

Spectrum #1 Analysis #1

Batch

Batch Name: October2014
Description:

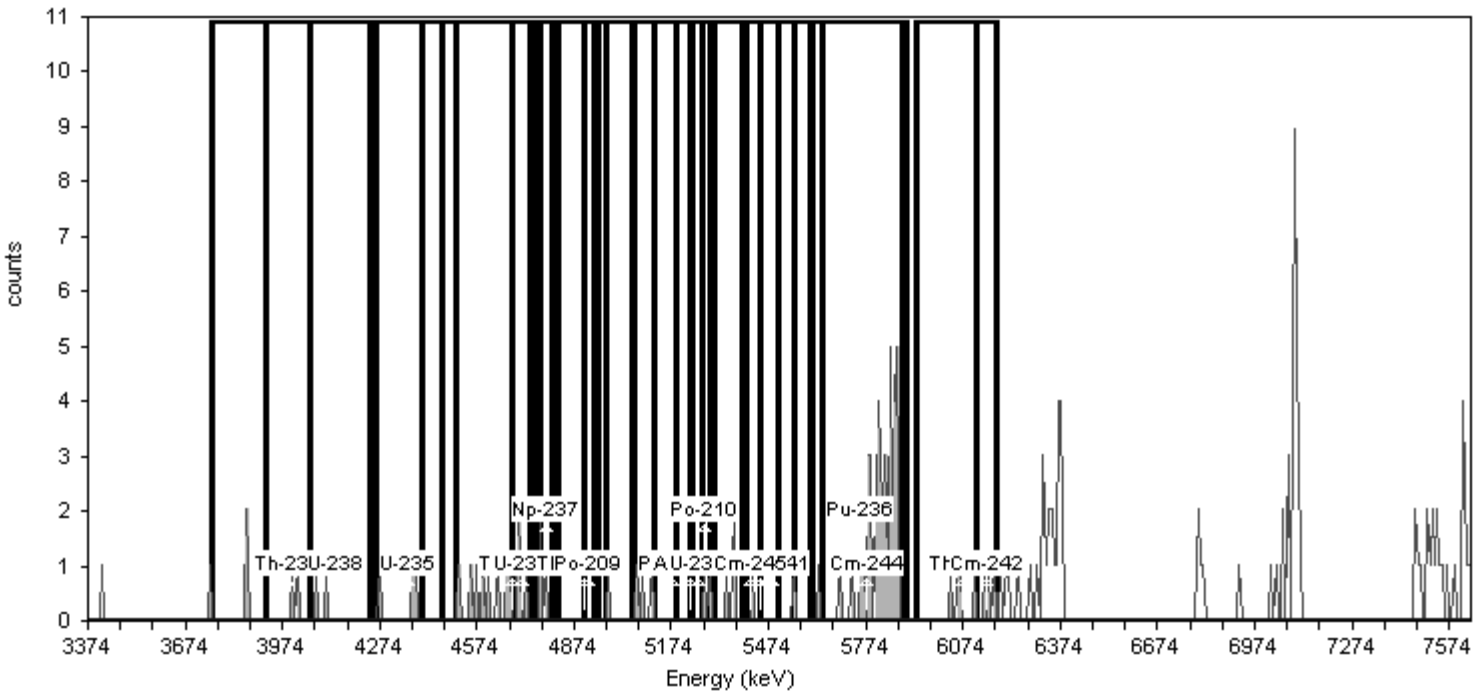
Analyst: 60040

Acquisition

Detector: AV47 , SN: 49-155N5
Acquisition Start Date: 10/24/2014 1:10:48AM
Live Time: 960.00 min.
Real Time: 960.01 min.
Calibration Name: IC-9885;AV47-20140505
Calibration Date: 5/5/2014 10:10:15PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 25.89% +/- 0.38% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 165.00

Nuclide Summary (ROI)

RegionName	Peak Energy (MeV)	Start Energy (MeV)	End Energy (MeV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3.99	3.75	4.05	4.00	4.167E-003	2.329E-003
U-238	4.14	3.92	4.24	4.00	4.167E-003	2.329E-003
U-235	4.36	4.26	4.46	3.00	3.125E-003	2.083E-003
Th-230	4.68	4.40	4.75	11.00	1.146E-002	3.608E-003
U-234	4.71	4.51	4.82	14.00	1.458E-002	4.034E-003
Pu-242	4.90	4.68	4.95	6.00	6.250E-003	2.756E-003
Th-229	4.86	4.74	5.12	7.00	7.292E-003	2.946E-003
Np-237	4.78	4.77	4.81	3.00	3.125E-003	2.083E-003
Po-209	4.92	4.90	4.93	0.00	0.000E+000	1.473E-003
Pu-239	5.18	4.97	5.24	4.00	4.167E-003	2.329E-003
Am-243	5.23	5.05	5.31	5.00	5.208E-003	2.552E-003
U-232	5.25	5.06	5.40	8.00	8.333E-003	3.125E-003
Th-228	5.45	5.19	5.51	6.00	6.250E-003	2.756E-003
Po-210	5.28	5.23	5.29	2.00	2.083E-003	1.804E-003
Pu-238	5.47	5.27	5.55	7.00	7.292E-003	2.946E-003
Am-241	5.48	5.30	5.60	5.00	5.208E-003	2.552E-003
Cm-245	5.42	5.40	5.45	1.00	1.042E-003	1.473E-003
Pu-236	5.76	5.61	5.89	42.00	4.375E-002	6.831E-003
Cm-244	5.78	5.64	5.90	41.00	4.271E-002	6.751E-003
Th-227	6.07	5.93	6.18	7.00	7.292E-003	2.946E-003
Cm-242	6.15	6.12	6.18	3.00	3.125E-003	2.083E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Background Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
5:30:57PM 10/24/2014

Sample

Sample Name: ICB;AV49
Comment:

Spectrum #1 Analysis #1

Batch

Batch Name: October2014
Description:

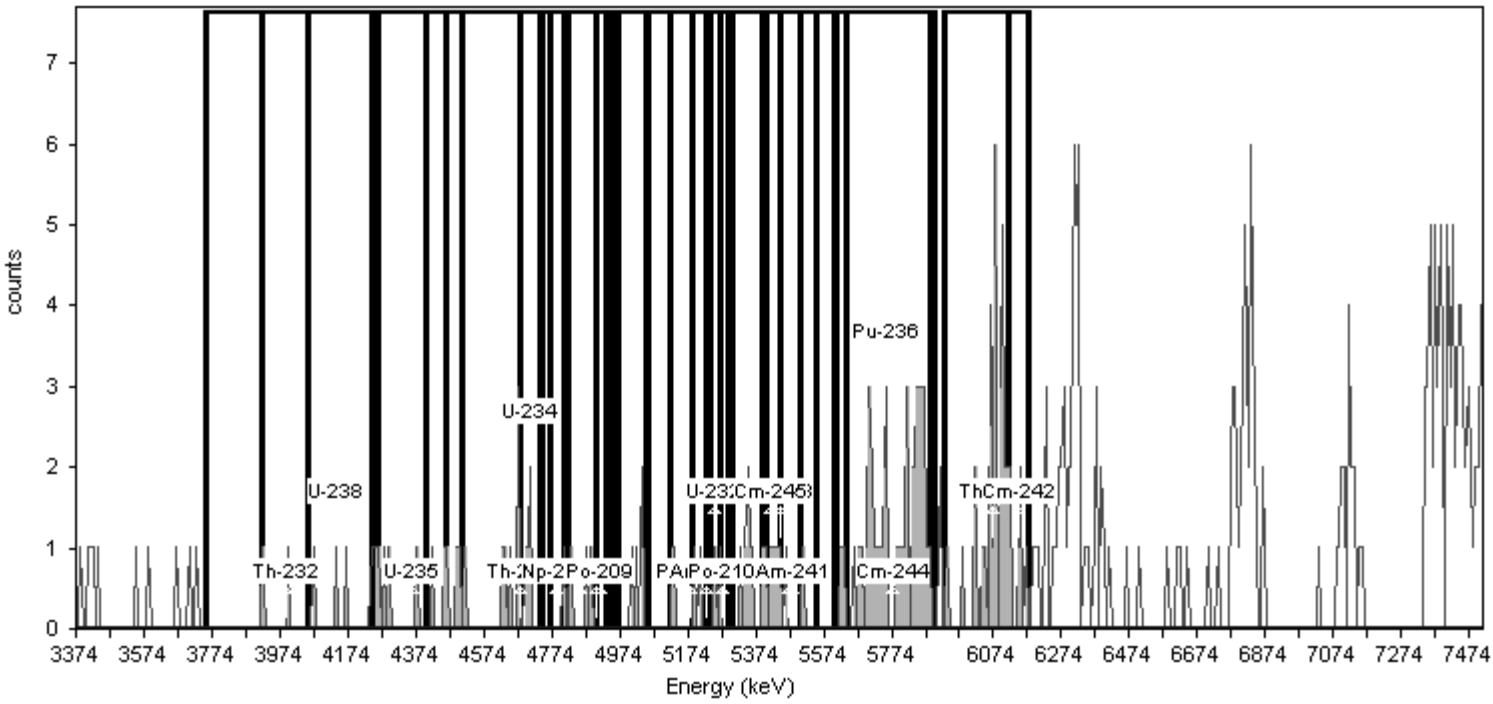
Analyst: 60040

Acquisition

Detector: AV49 , SN: 47-043hh4
Acquisition Start Date: 10/24/2014 1:10:51AM
Live Time: 960.00 min.
Real Time: 960.01 min.
Calibration Name: IC-7107;AV49-20140504
Calibration Date: 5/5/2014 6:52:38PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 26.53% +/- 0.30% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 327.00

Nuclide Summary (ROI)

RegionName	Peak Energy (MeV)	Start Energy (MeV)	End Energy (MeV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3.99	3.75	4.05	2.00	2.083E-003	1.804E-003
U-238	4.14	3.92	4.24	6.00	6.250E-003	2.756E-003
U-235	4.36	4.26	4.46	7.00	7.292E-003	2.946E-003
Th-230	4.68	4.40	4.75	16.00	1.667E-002	4.295E-003
U-234	4.71	4.51	4.82	12.00	1.250E-002	3.756E-003
Pu-242	4.90	4.68	4.95	8.00	8.333E-003	3.125E-003
Th-229	4.86	4.74	5.12	8.00	8.333E-003	3.125E-003
Np-237	4.78	4.77	4.81	1.00	1.042E-003	1.473E-003
Po-209	4.92	4.90	4.93	0.00	0.000E+000	1.473E-003
Pu-239	5.18	4.97	5.24	8.00	8.333E-003	3.125E-003
Am-243	5.23	5.05	5.31	6.00	6.250E-003	2.756E-003
U-232	5.25	5.06	5.40	14.00	1.458E-002	4.034E-003
Th-228	5.45	5.19	5.51	18.00	1.875E-002	4.541E-003
Po-210	5.28	5.23	5.29	2.00	2.083E-003	1.804E-003
Pu-238	5.47	5.27	5.55	16.00	1.667E-002	4.295E-003
Am-241	5.48	5.30	5.60	15.00	1.563E-002	4.167E-003
Cm-245	5.42	5.40	5.45	7.00	7.292E-003	2.946E-003
Pu-236	5.76	5.61	5.89	45.00	4.688E-002	7.065E-003
Cm-244	5.78	5.64	5.90	43.00	4.479E-002	6.910E-003
Th-227	6.07	5.93	6.18	35.00	3.646E-002	6.250E-003
Cm-242	6.15	6.12	6.18	8.00	8.333E-003	3.125E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Background Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
5:31:07PM 10/24/2014

Sample

Sample Name: ICB;AV50
Comment:

Spectrum #1 Analysis #1

Batch

Batch Name: October2014
Description:

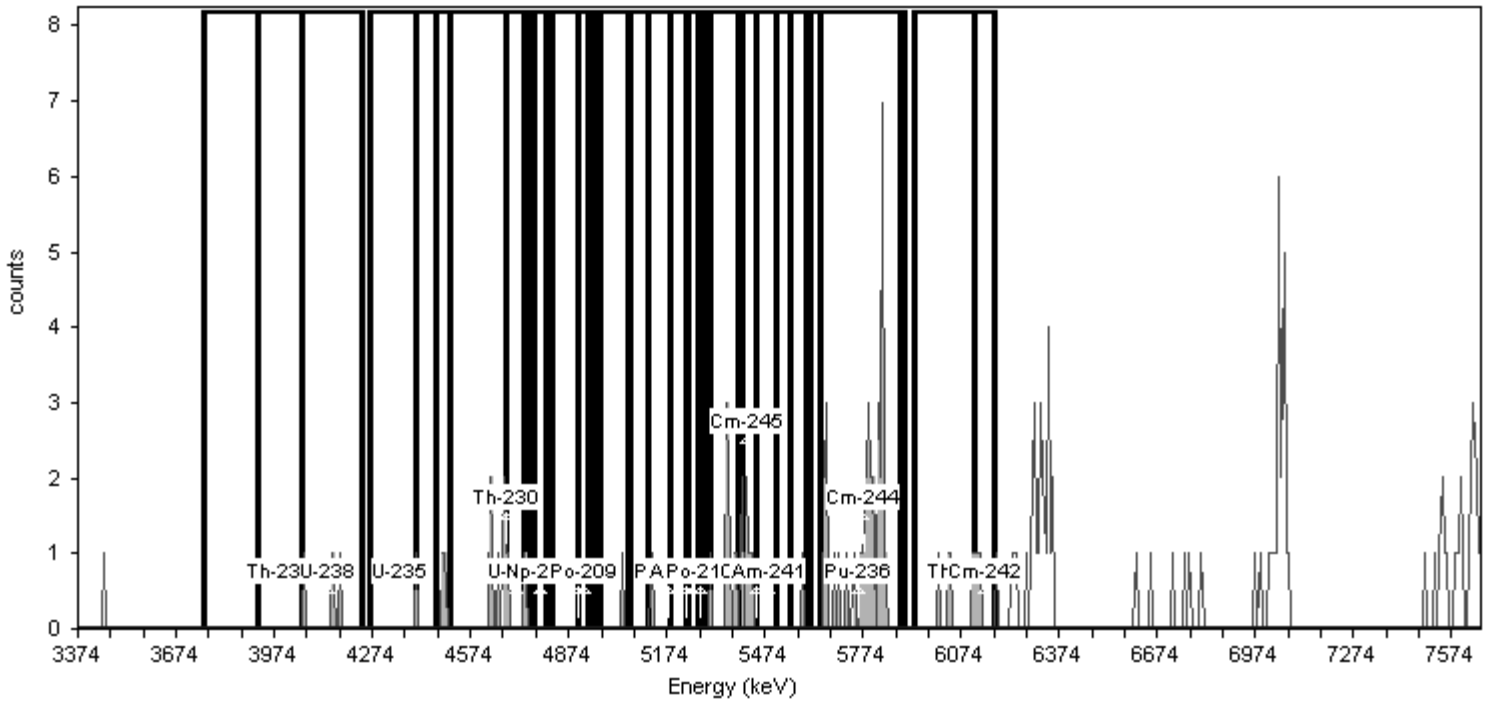
Analyst: 60040

Acquisition

Detector: AV50 , SN: 50-060W2
Acquisition Start Date: 10/24/2014 1:10:53AM
Live Time: 960.00 min.
Real Time: 960.01 min.
Calibration Name: IC-8874;AV50-20140504
Calibration Date: 5/5/2014 6:52:48PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 26.93% +/- 0.38% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 143.00

Nuclide Summary (ROI)

RegionName	Peak Energy (MeV)	Start Energy (MeV)	End Energy (MeV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3.99	3.75	4.05	0.00	0.000E+000	1.473E-003
U-238	4.14	3.92	4.24	3.00	3.125E-003	2.083E-003
U-235	4.36	4.26	4.46	1.00	1.042E-003	1.473E-003
Th-230	4.68	4.40	4.75	11.00	1.146E-002	3.608E-003
U-234	4.71	4.51	4.82	8.00	8.333E-003	3.125E-003
Pu-242	4.90	4.68	4.95	3.00	3.125E-003	2.083E-003
Th-229	4.86	4.74	5.12	2.00	2.083E-003	1.804E-003
Np-237	4.78	4.77	4.81	0.00	0.000E+000	1.473E-003
Po-209	4.92	4.90	4.93	0.00	0.000E+000	1.473E-003
Pu-239	5.18	4.97	5.24	2.00	2.083E-003	1.804E-003
Am-243	5.23	5.05	5.31	2.00	2.083E-003	1.804E-003
U-232	5.25	5.06	5.40	10.00	1.042E-002	3.455E-003
Th-228	5.45	5.19	5.51	13.00	1.354E-002	3.898E-003
Po-210	5.28	5.23	5.29	0.00	0.000E+000	1.473E-003
Pu-238	5.47	5.27	5.55	13.00	1.354E-002	3.898E-003
Am-241	5.48	5.30	5.60	14.00	1.458E-002	4.034E-003
Cm-245	5.42	5.40	5.45	6.00	6.250E-003	2.756E-003
Pu-236	5.76	5.61	5.89	33.00	3.437E-002	6.074E-003
Cm-244	5.78	5.64	5.90	33.00	3.437E-002	6.074E-003
Th-227	6.07	5.93	6.18	7.00	7.292E-003	2.946E-003
Cm-242	6.15	6.12	6.18	3.00	3.125E-003	2.083E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Background Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
7:04:09AM 10/27/2014

Sample

Sample Name: ICB;AV51
Comment:

Spectrum #1 Analysis #1

Batch

Batch Name: October2014a
Description:

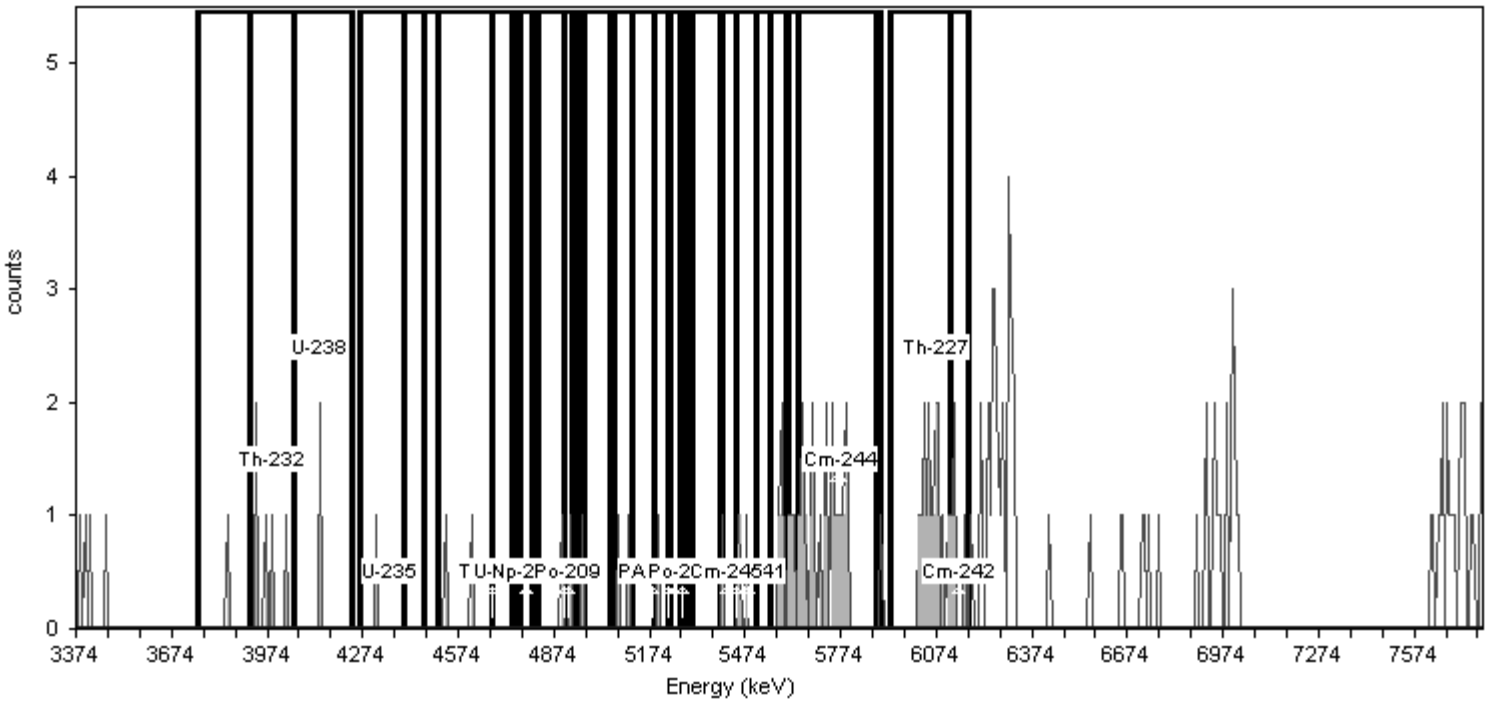
Analyst: 60040

Acquisition

Detector: AV51 , SN: 48-109I1
Acquisition Start Date: 10/26/2014 3:01:23PM
Live Time: 960.00 min.
Real Time: 960.00 min.
Calibration Name: IC-8875;AV51-20140504
Calibration Date: 5/5/2014 6:52:53PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 26.24% +/- 0.36% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 147.00

Nuclide Summary (ROI)

RegionName	Peak Energy (MeV)	Start Energy (MeV)	End Energy (MeV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3.99	3.75	4.05	6.00	6.250E-003	2.756E-003
U-238	4.14	3.92	4.24	7.00	7.292E-003	2.946E-003
U-235	4.36	4.26	4.46	1.00	1.042E-003	1.473E-003
Th-230	4.68	4.40	4.75	2.00	2.083E-003	1.804E-003
U-234	4.71	4.51	4.82	2.00	2.083E-003	1.804E-003
Pu-242	4.90	4.68	4.95	2.00	2.083E-003	1.804E-003
Th-229	4.86	4.74	5.12	5.00	5.208E-003	2.552E-003
Np-237	4.78	4.77	4.81	0.00	0.000E+000	1.473E-003
Po-209	4.92	4.90	4.93	1.00	1.042E-003	1.473E-003
Pu-239	5.18	4.97	5.24	3.00	3.125E-003	2.083E-003
Am-243	5.23	5.05	5.31	3.00	3.125E-003	2.083E-003
U-232	5.25	5.06	5.40	4.00	4.167E-003	2.329E-003
Th-228	5.45	5.19	5.51	4.00	4.167E-003	2.329E-003
Po-210	5.28	5.23	5.29	0.00	0.000E+000	1.473E-003
Pu-238	5.47	5.27	5.55	3.00	3.125E-003	2.083E-003
Am-241	5.48	5.30	5.60	6.00	6.250E-003	2.756E-003
Cm-245	5.42	5.40	5.45	1.00	1.042E-003	1.473E-003
Pu-236	5.76	5.61	5.89	26.00	2.708E-002	5.413E-003
Cm-244	5.78	5.64	5.90	24.00	2.500E-002	5.208E-003
Th-227	6.07	5.93	6.18	20.00	2.083E-002	4.774E-003
Cm-242	6.15	6.12	6.18	5.00	5.208E-003	2.552E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Background Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
7:04:09AM 10/27/2014

Sample

Sample Name: ICB;AV51
Comment:

Spectrum #1 Analysis #1

Batch

Batch Name: October2014a
Description:

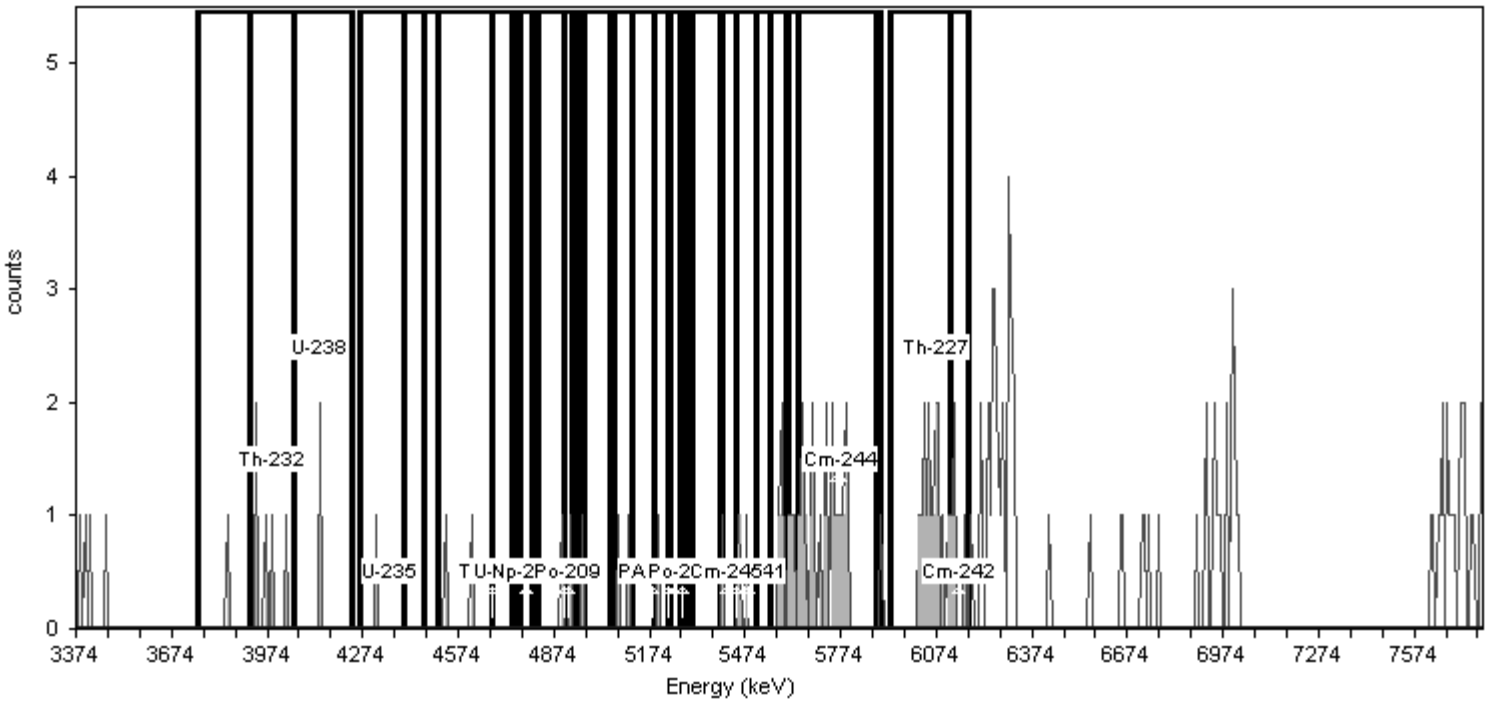
Analyst: 60040

Acquisition

Detector: AV51 , SN: 48-109I1
Acquisition Start Date: 10/26/2014 3:01:23PM
Live Time: 960.00 min.
Real Time: 960.00 min.
Calibration Name: IC-8875;AV51-20140504
Calibration Date: 5/5/2014 6:52:53PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 26.24% +/- 0.36% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 147.00

Nuclide Summary (ROI)

RegionName	Peak Energy (MeV)	Start Energy (MeV)	End Energy (MeV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3.99	3.75	4.05	6.00	6.250E-003	2.756E-003
U-238	4.14	3.92	4.24	7.00	7.292E-003	2.946E-003
U-235	4.36	4.26	4.46	1.00	1.042E-003	1.473E-003
Th-230	4.68	4.40	4.75	2.00	2.083E-003	1.804E-003
U-234	4.71	4.51	4.82	2.00	2.083E-003	1.804E-003
Pu-242	4.90	4.68	4.95	2.00	2.083E-003	1.804E-003
Th-229	4.86	4.74	5.12	5.00	5.208E-003	2.552E-003
Np-237	4.78	4.77	4.81	0.00	0.000E+000	1.473E-003
Po-209	4.92	4.90	4.93	1.00	1.042E-003	1.473E-003
Pu-239	5.18	4.97	5.24	3.00	3.125E-003	2.083E-003
Am-243	5.23	5.05	5.31	3.00	3.125E-003	2.083E-003
U-232	5.25	5.06	5.40	4.00	4.167E-003	2.329E-003
Th-228	5.45	5.19	5.51	4.00	4.167E-003	2.329E-003
Po-210	5.28	5.23	5.29	0.00	0.000E+000	1.473E-003
Pu-238	5.47	5.27	5.55	3.00	3.125E-003	2.083E-003
Am-241	5.48	5.30	5.60	6.00	6.250E-003	2.756E-003
Cm-245	5.42	5.40	5.45	1.00	1.042E-003	1.473E-003
Pu-236	5.76	5.61	5.89	26.00	2.708E-002	5.413E-003
Cm-244	5.78	5.64	5.90	24.00	2.500E-002	5.208E-003
Th-227	6.07	5.93	6.18	20.00	2.083E-002	4.774E-003
Cm-242	6.15	6.12	6.18	5.00	5.208E-003	2.552E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Background Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
5:32:02PM 10/24/2014

Sample

Sample Name: ICB;AV56
Comment:

Spectrum #1 Analysis #1

Batch

Batch Name: October2014
Description:

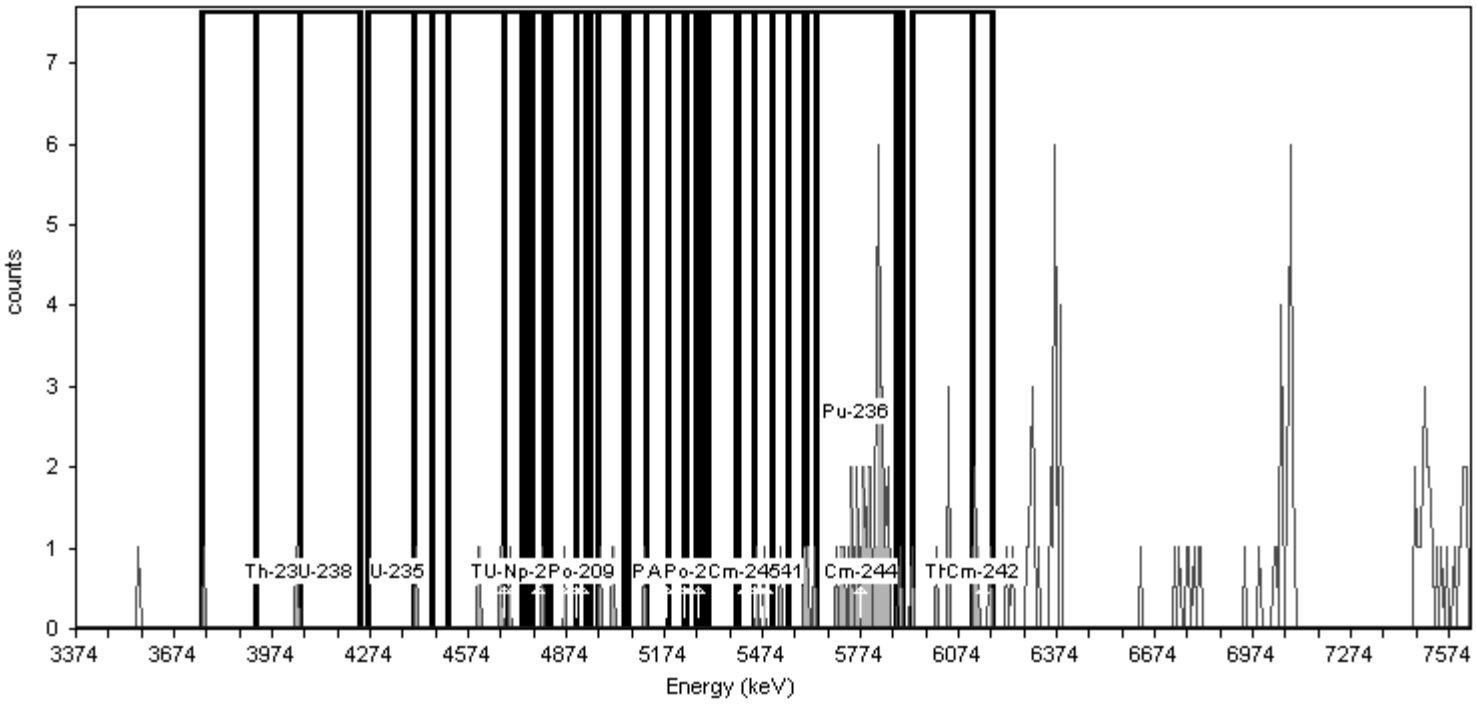
Analyst: 60040

Acquisition

Detector: AV56 , SN: 52-059EE5
Acquisition Start Date: 10/24/2014 1:11:03AM
Live Time: 960.00 min.
Real Time: 960.02 min.
Calibration Name: IC-9792;AV56-20140504
Calibration Date: 5/5/2014 6:53:34PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 26.09% +/- 0.30% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 135.00

Nuclide Summary (ROI)

RegionName	Peak Energy (MeV)	Start Energy (MeV)	End Energy (MeV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3.99	3.75	4.05	2.00	2.083E-003	1.804E-003
U-238	4.14	3.92	4.24	1.00	1.042E-003	1.473E-003
U-235	4.36	4.26	4.46	1.00	1.042E-003	1.473E-003
Th-230	4.68	4.40	4.75	4.00	4.167E-003	2.329E-003
U-234	4.71	4.51	4.82	4.00	4.167E-003	2.329E-003
Pu-242	4.90	4.68	4.95	3.00	3.125E-003	2.083E-003
Th-229	4.86	4.74	5.12	5.00	5.208E-003	2.552E-003
Np-237	4.78	4.77	4.81	1.00	1.042E-003	1.473E-003
Po-209	4.92	4.90	4.93	0.00	0.000E+000	1.473E-003
Pu-239	5.18	4.97	5.24	3.00	3.125E-003	2.083E-003
Am-243	5.23	5.05	5.31	1.00	1.042E-003	1.473E-003
U-232	5.25	5.06	5.40	1.00	1.042E-003	1.473E-003
Th-228	5.45	5.19	5.51	2.00	2.083E-003	1.804E-003
Po-210	5.28	5.23	5.29	0.00	0.000E+000	1.473E-003
Pu-238	5.47	5.27	5.55	3.00	3.125E-003	2.083E-003
Am-241	5.48	5.30	5.60	4.00	4.167E-003	2.329E-003
Cm-245	5.42	5.40	5.45	0.00	0.000E+000	1.473E-003
Pu-236	5.76	5.61	5.89	33.00	3.437E-002	6.074E-003
Cm-244	5.78	5.64	5.90	32.00	3.333E-002	5.984E-003
Th-227	6.07	5.93	6.18	9.00	9.375E-003	3.294E-003
Cm-242	6.15	6.12	6.18	4.00	4.167E-003	2.329E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Background Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
5:38:29PM 10/24/2014

Sample

Sample Name: ICB;AV116
Comment:

Spectrum #1 Analysis #1

Batch

Batch Name: October2014
Description:

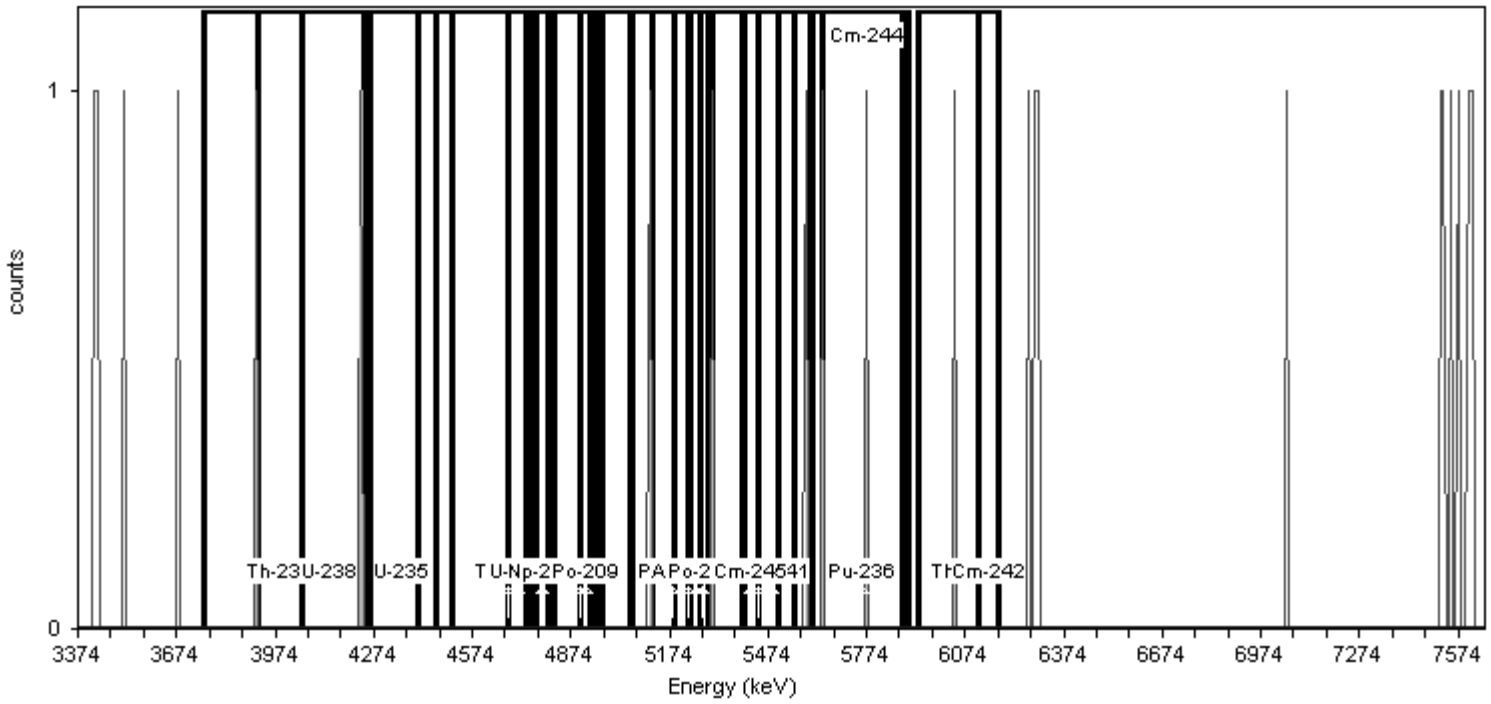
Analyst: 60040

Acquisition

Detector: AV116 , SN: 49-034G1
Acquisition Start Date: 10/24/2014 1:12:44AM
Live Time: 960.00 min.
Real Time: 960.01 min.
Calibration Name: IC-9792;AV116-20140430
Calibration Date: 5/1/2014 1:16:57PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 27.04% +/- 0.31% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 23.00

Nuclide Summary (ROI)

RegionName	Peak Energy (MeV)	Start Energy (MeV)	End Energy (MeV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3.99	3.75	4.05	1.00	1.042E-003	1.473E-003
U-238	4.14	3.92	4.24	1.00	1.042E-003	1.473E-003
U-235	4.36	4.26	4.46	0.00	0.000E+000	1.473E-003
Th-230	4.68	4.40	4.75	0.00	0.000E+000	1.473E-003
U-234	4.71	4.51	4.82	0.00	0.000E+000	1.473E-003
Pu-242	4.90	4.68	4.95	0.00	0.000E+000	1.473E-003
Th-229	4.86	4.74	5.12	1.00	1.042E-003	1.473E-003
Np-237	4.78	4.77	4.81	0.00	0.000E+000	1.473E-003
Po-209	4.92	4.90	4.93	0.00	0.000E+000	1.473E-003
Pu-239	5.18	4.97	5.24	1.00	1.042E-003	1.473E-003
Am-243	5.23	5.05	5.31	2.00	2.083E-003	1.804E-003
U-232	5.25	5.06	5.40	2.00	2.083E-003	1.804E-003
Th-228	5.45	5.19	5.51	1.00	1.042E-003	1.473E-003
Po-210	5.28	5.23	5.29	0.00	0.000E+000	1.473E-003
Pu-238	5.47	5.27	5.55	1.00	1.042E-003	1.473E-003
Am-241	5.48	5.30	5.60	2.00	2.083E-003	1.804E-003
Cm-245	5.42	5.40	5.45	0.00	0.000E+000	1.473E-003
Pu-236	5.76	5.61	5.89	2.00	2.083E-003	1.804E-003
Cm-244	5.78	5.64	5.90	2.00	2.083E-003	1.804E-003
Th-227	6.07	5.93	6.18	1.00	1.042E-003	1.473E-003
Cm-242	6.15	6.12	6.18	0.00	0.000E+000	1.473E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Background Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
5:38:38PM 10/24/2014

Sample

Sample Name: ICB;AV117
Comment:

Spectrum #1 Analysis #1

Batch

Batch Name: October2014
Description:

Analyst: 60040

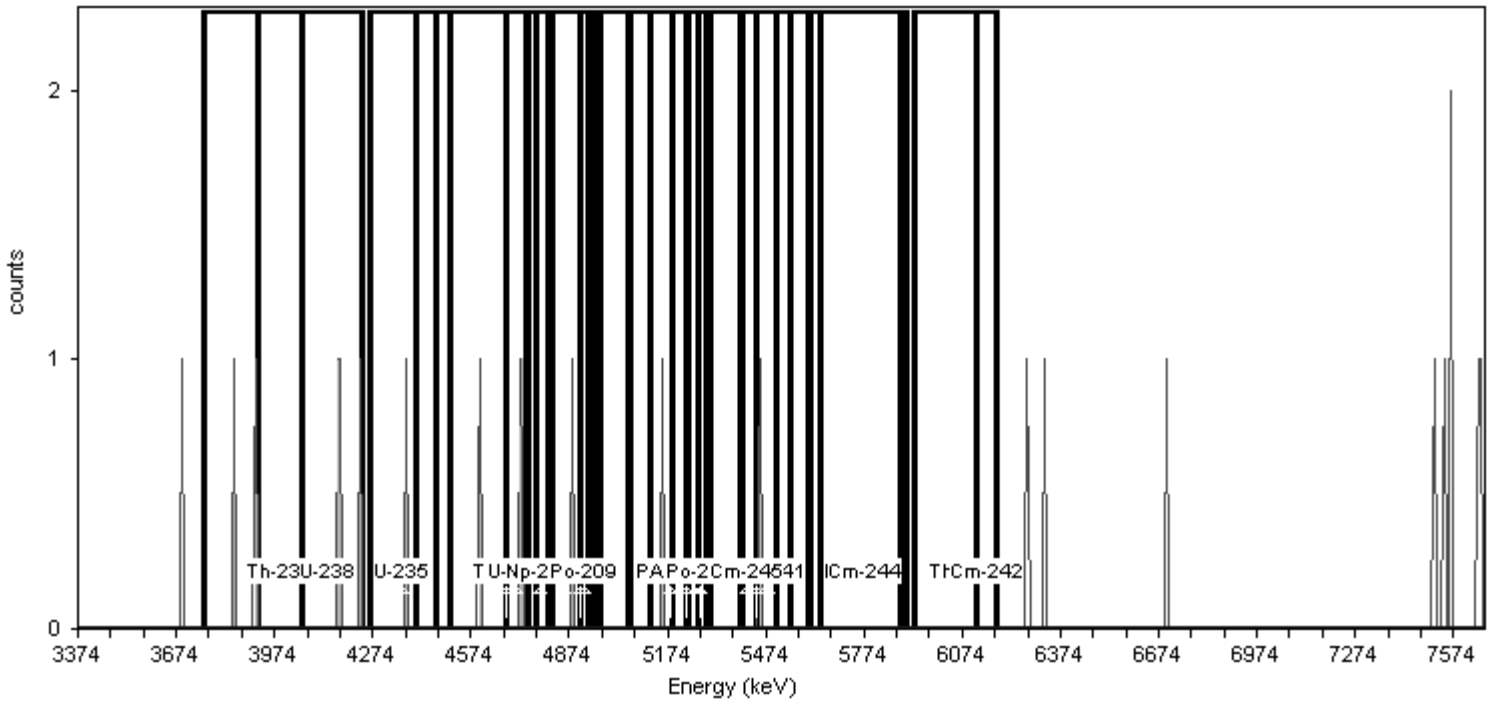
Acquisition

Detector: AV117 , SN: 49-037X4
Acquisition Start Date: 10/24/2014 1:12:45AM
Live Time: 960.00 min.
Real Time: 960.02 min.
Calibration Name: IC-9793;AV117-20140430
Calibration Date: 5/1/2014 1:17:04PM

Energy Calibration Equation:

Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 25.86% +/- 0.32% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 21.00

Nuclide Summary (ROI)

RegionName	Peak Energy (MeV)	Start Energy (MeV)	End Energy (MeV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3.99	3.75	4.05	2.00	2.083E-003	1.804E-003
U-238	4.14	3.92	4.24	3.00	3.125E-003	2.083E-003
U-235	4.36	4.26	4.46	1.00	1.042E-003	1.473E-003
Th-230	4.68	4.40	4.75	2.00	2.083E-003	1.804E-003
U-234	4.71	4.51	4.82	2.00	2.083E-003	1.804E-003
Pu-242	4.90	4.68	4.95	2.00	2.083E-003	1.804E-003
Th-229	4.86	4.74	5.12	1.00	1.042E-003	1.473E-003
Np-237	4.78	4.77	4.81	0.00	0.000E+000	1.473E-003
Po-209	4.92	4.90	4.93	0.00	0.000E+000	1.473E-003
Pu-239	5.18	4.97	5.24	1.00	1.042E-003	1.473E-003
Am-243	5.23	5.05	5.31	1.00	1.042E-003	1.473E-003
U-232	5.25	5.06	5.40	1.00	1.042E-003	1.473E-003
Th-228	5.45	5.19	5.51	1.00	1.042E-003	1.473E-003
Po-210	5.28	5.23	5.29	0.00	0.000E+000	1.473E-003
Pu-238	5.47	5.27	5.55	1.00	1.042E-003	1.473E-003
Am-241	5.48	5.30	5.60	1.00	1.042E-003	1.473E-003
Cm-245	5.42	5.40	5.45	0.00	0.000E+000	1.473E-003
Pu-236	5.76	5.61	5.89	0.00	0.000E+000	1.473E-003
Cm-244	5.78	5.64	5.90	0.00	0.000E+000	1.473E-003
Th-227	6.07	5.93	6.18	0.00	0.000E+000	1.473E-003
Cm-242	6.15	6.12	6.18	0.00	0.000E+000	1.473E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Background Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
5:34:02PM 10/24/2014

Sample

Sample Name: ICB;AV118
Comment:

Spectrum #1 Analysis #1

Batch

Batch Name: October2014
Description:

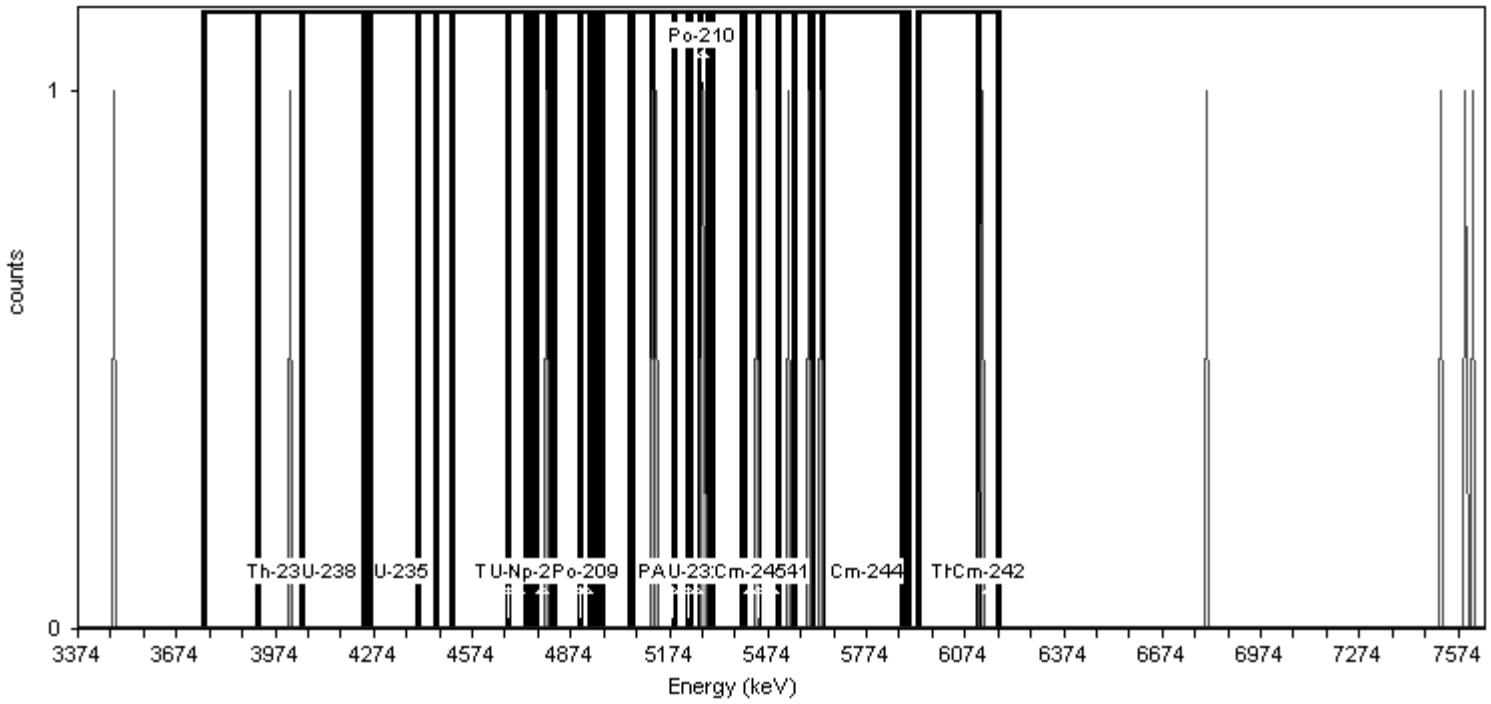
Analyst: 60040

Acquisition

Detector: AV118 , SN: 49-037F4
Acquisition Start Date: 10/24/2014 1:12:47AM
Live Time: 960.00 min.
Real Time: 960.01 min.
Calibration Name: IC-9794;AV118-20140430
Calibration Date: 5/1/2014 1:17:10PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 25.84% +/- 0.32% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 15.00

Nuclide Summary (ROI)

RegionName	Peak Energy (MeV)	Start Energy (MeV)	End Energy (MeV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3.99	3.75	4.05	1.00	1.042E-003	1.473E-003
U-238	4.14	3.92	4.24	1.00	1.042E-003	1.473E-003
U-235	4.36	4.26	4.46	0.00	0.000E+000	1.473E-003
Th-230	4.68	4.40	4.75	0.00	0.000E+000	1.473E-003
U-234	4.71	4.51	4.82	1.00	1.042E-003	1.473E-003
Pu-242	4.90	4.68	4.95	1.00	1.042E-003	1.473E-003
Th-229	4.86	4.74	5.12	2.00	2.083E-003	1.804E-003
Np-237	4.78	4.77	4.81	1.00	1.042E-003	1.473E-003
Po-209	4.92	4.90	4.93	0.00	0.000E+000	1.473E-003
Pu-239	5.18	4.97	5.24	2.00	2.083E-003	1.804E-003
Am-243	5.23	5.05	5.31	3.00	3.125E-003	2.083E-003
U-232	5.25	5.06	5.40	3.00	3.125E-003	2.083E-003
Th-228	5.45	5.19	5.51	2.00	2.083E-003	1.804E-003
Po-210	5.28	5.23	5.29	1.00	1.042E-003	1.473E-003
Pu-238	5.47	5.27	5.55	3.00	3.125E-003	2.083E-003
Am-241	5.48	5.30	5.60	3.00	3.125E-003	2.083E-003
Cm-245	5.42	5.40	5.45	1.00	1.042E-003	1.473E-003
Pu-236	5.76	5.61	5.89	1.00	1.042E-003	1.473E-003
Cm-244	5.78	5.64	5.90	0.00	0.000E+000	1.473E-003
Th-227	6.07	5.93	6.18	1.00	1.042E-003	1.473E-003
Cm-242	6.15	6.12	6.18	1.00	1.042E-003	1.473E-003

Run Logs

Alpha Spectroscopy Run Log

Detector: AV47

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
05/05/14 19:31	140	IC 160-120410/1		120410			PS
05/08/14 00:18	60	ICV 160-121080/1		121080			PS
10/24/14 01:10	960	ICB 160-152091/1		152091			PS
10/30/14 14:14	60	CCV 160-153196/1		153196			PS
11/04/14 14:22	1	PULSER 160-154409/1		154409			MLK
11/04/14 21:14	240	MB 160-153826/1-A		154409	153826	A-01-R	MLK

Detector: AV49

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
05/04/14 21:03	140	IC 160-120271/1		120271			PS
05/08/14 14:34	60	ICV 160-121364/1		121364			PS
10/24/14 01:10	960	ICB 160-152093/1		152093			PS
10/30/14 14:15	60	CCV 160-153198/1		153198			PS
11/04/14 14:22	1	PULSER 160-154411/1		154411			MLK
11/04/14 21:14	240	LCS 160-153826/2-A		154411	153826	A-01-R	MLK

Detector: AV50

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
05/04/14 21:03	140	IC 160-120272/1		120272			PS
05/08/14 14:34	60	ICV 160-121365/1		121365			PS
10/24/14 01:10	960	ICB 160-152094/1		152094			PS
10/29/14 22:44	60	CCV 160-153185/1		153185			PS
11/04/14 14:22	1	PULSER 160-154412/1		154412			MLK
11/04/14 21:14	240	LCSD 160-153826/3-A		154412	153826	A-01-R	MLK

Detector: AV51

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
05/04/14 21:03	140	IC 160-120273/1		120273			PS
05/08/14 17:17	60	ICV 160-121366/1		121366			PS
10/26/14 15:01	960	ICB 160-152401/1		152401			PS
10/30/14 17:43	60	CCV 160-153199/1		153199			PS
11/04/14 14:22	1	PULSER 160-154413/1		154413			MLK
11/04/14 21:14	240	160-9071-1	SMC-09-20141027-21	154413	153826	A-01-R	MLK

Detector: AV56

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
05/04/14 21:04	140	IC 160-120278/1		120278			PS
05/08/14 17:18	60	ICV 160-121369/1		121369			PS
10/24/14 01:11	960	ICB 160-152100/1		152100			PS
10/30/14 14:16	60	CCV 160-153203/1		153203			PS
11/07/14 05:03	1	PULSER 160-154917/1		154917			MLK
11/07/14 09:56	180	ZZZZZ		154917			
11/07/14 17:41	400	160-9071-1	SMC-09-20141027-21	154917	154805	A-01-R	MLK

Detector: AV116

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
04/30/14 22:55	140	IC 160-119675/1		119675			PS

Alpha Spectroscopy Run Log

Detector: AV116 (Continued)

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
05/11/14 22:06	60	ICV 160-121419/1		121419			PS
10/24/14 01:12	960	ICB 160-152049/1		152049			PS
10/27/14 22:34	60	CCV 160-153119/1		153119			PS
11/07/14 08:24	1	PULSER 160-154876/1		154876			MLK
11/07/14 17:41	400	MB 160-154805/1-A		154876	154805	A-01-R	MLK

Detector: AV117

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
04/30/14 22:55	140	IC 160-119676/1		119676			PS
05/11/14 22:06	60	ICV 160-121420/1		121420			PS
10/24/14 01:12	960	ICB 160-152050/1		152050			PS
10/27/14 22:34	60	CCV 160-153120/1		153120			PS
11/07/14 08:24	1	PULSER 160-154877/1		154877			MLK
11/07/14 17:41	400	LCS 160-154805/2-A		154877	154805	A-01-R	MLK

Detector: AV118

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
04/30/14 22:55	140	IC 160-119677/1		119677			PS
05/11/14 23:19	60	ICV 160-121421/1		121421			PS
10/24/14 01:12	960	ICB 160-152051/1		152051			PS
10/27/14 22:35	60	CCV 160-153121/1		153121			PS
11/07/14 05:03	1	PULSER 160-154878/1		154878			MLK
11/07/14 17:41	400	LCSD 160-154805/3-A		154878	154805	A-01-R	MLK

GAS FLOW PROPORTIONAL COUNTER

Method 9310

Gross Alpha / Beta (GFPC) by Method 9310

GAS FLOW PROPORTIONAL COUNTER BATCH WORKSHEET

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Batch Number: 153948 Batch Start Date: 11/04/14 09:08 Batch Analyst: Hines, Joseph

Batch Method: Evaporation Batch End Date: 11/04/14 11:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	GrossWtPlncht	TareWtPlncht	MassPlncht	Sr-90 00023	Th-230 00024
MB 160-153948/1		Evaporation, 9310		200 mL	8.6502 g	8.6501 g	0.0001 g		
LCS 160-153948/2		Evaporation, 9310		200 mL	8.6565 g	8.6037 g	0.0528 g		1 mL
LCSB 160-153948/3		Evaporation, 9310		200 mL	8.6383 g	8.5852 g	0.0531 g	1 mL	
160-9071-F-1	SMC-09-20141027-21	Evaporation, 9310	T	86 mL	8.6798 g	8.6228 g	0.057 g		

Batch Notes	
Person's name who witnessed reagent drop	mrb
Analyst who added reagent	JAH
SOP Number	ST-RC-0002, ST-RC-0020

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

Prep Batch: 153948

Preparation, Evaporation

Gas Flow Proportional Counter Analysis Detail Report
Prep Batch: 153948

Lab ID: MB 160-153948/1-A | Analyzed: 11/04/14 18:14 | Decay Corrected: No | Ts: 200
Client ID: | Detector: Orange23 | Yield Truncated: No | Tb: 1000
Sigma: 2 | Dil Fac: 1 | Calibration Type: 1

Analyte	MB Result	Count Unc	Total Unc	Qualifier	Unit	RL	MDC	Cs	Cb	CPMs	CPMb	Eff	Anly Batch
Gross Alpha	0.7364	0.745	0.750	U	pCi/L	3.00	1.18	23	65	0.115	0.065	0.15292	154081
Gross Beta	0.1828	0.530	0.530	U	pCi/L	4.00	0.903	93	410	0.465	0.410	0.45205	154081

Lab ID: LCS 160-153948/2-A | Analyzed: 11/04/14 18:15 | Decay Corrected: No | Ts: 200
Client ID: | Detector: Purple8 | Yield Truncated: No | Tb: 1000
Sigma: 2 | Dil Fac: 1 | Calibration Type: 1

Analyte	LCS Result	Count Unc	Total Unc	Qualifier	Unit	RL	MDC	Cs	Cb	CPMs	CPMb	Eff	Anly Batch
Gross Alpha	52.39	4.45	7.45		pCi/L	3.00	1.85	606	119	3.030	0.119	0.12514	154079

Lab ID: LCSB 160-153948/3-A | Analyzed: 11/04/14 18:15 | Decay Corrected: No | Ts: 200
Client ID: | Detector: Purple10 | Yield Truncated: No | Tb: 1000
Sigma: 2 | Dil Fac: 1 | Calibration Type: 1

Analyte	LCSB Result	Count Unc	Total Unc	Qualifier	Unit	RL	MDC	Cs	Cb	CPMs	CPMb	Eff	Anly Batch
Gross Beta	94.56	3.20	9.98		pCi/L	4.00	0.980	3726	374	18.630	0.374	0.43234	154079

Lab ID: 160-9071-1 | Analyzed: 11/05/14 07:21 | Decay Corrected: No | Ts: 200
Client ID: SMC-09-20141027-21 | Detector: Protean15 | Yield Truncated: No | Tb: 1000
Sigma: 2 | Dil Fac: 1 | Calibration Type: 1

Analyte	Result	Count Unc	Total Unc	Qualifier	Unit	RL	MDC	Cs	Cb	CPMs	CPMb	Eff	Anly Batch
Gross Alpha	16.3	4.36	4.74	G	pCi/L	3.00	3.92	85	74	0.425	0.074	0.11258	154305
Gross Beta	2.78	1.82	1.84		pCi/L	4.00	2.61	164	452	0.820	0.452	0.41769	154305

Quality Control Summary

Method Blank ID:	Analyte	Parent Result	Spike Added	MB Result	Qualifier	Unit	% Rec	% Rec Limits	RPD	RER	DER	RER Limit	Z Factor
MB 160-153948/1-A	Gross Alpha			0.7364	U	pCi/L							
MB 160-153948/1-A	Gross Beta			0.1828	U	pCi/L							

Lab Control Sample ID:	Analyte	Parent Result	Spike Added	LCS Result	Qualifier	Unit	% Rec	% Rec Limits	RPD	RER	DER	RER Limit	Z Factor
LCS 160-153948/2-A	Gross Alpha		50.1	52.39		pCi/L	105	73 - 133					

Lab Control Sample Beta ID:	Analyte	Parent Result	Spike Added	LCSB Result	Qualifier	Unit	% Rec	% Rec Limits	RPD	RER	DER	RER Limit	Z Factor
LCSB 160-153948/3-A	Gross Beta		96.3	94.56		pCi/L	98	75 - 125					

Gas Flow Proportional Counter Analysis Detail Report
Prep Batch: 153948

Glossary:

- Ts = Count Duration, Sample
- Tb = Count Duration, Background
- Cs = Total Counts, Sample
- Cb = Total Counts, Background
- CPMs = Counts Per Minute, Sample
- CPMb = Counts Per Minute, Background
- Eff = Efficiency

GAS FLOW PROPORTIONAL COUNTER BATCH WORKSHEET

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Batch Number: 153948 Batch Start Date: 11/04/14 09:08 Batch Analyst: Hines, Joseph

Batch Method: Evaporation Batch End Date: 11/04/14 11:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	GrossWtPlncht	TareWtPlncht	MassPlncht	Sr-90 00023	Th-230 00024
MB 160-153948/1		Evaporation, 9310		200 mL	8.6502 g	8.6501 g	0.0001 g		
LCS 160-153948/2		Evaporation, 9310		200 mL	8.6565 g	8.6037 g	0.0528 g		1 mL
LCSB 160-153948/3		Evaporation, 9310		200 mL	8.6383 g	8.5852 g	0.0531 g	1 mL	
160-9071-F-1	SMC-09-20141027-21	Evaporation, 9310	T	86 mL	8.6798 g	8.6228 g	0.057 g		

Batch Notes	
Person's name who witnessed reagent drop	mrb
Analyst who added reagent	JAH
SOP Number	ST-RC-0002, ST-RC-0020

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

Alpha/Beta Count Results

Sample Activity Report

Orange 20-23 - D

Addr: 23

Sample ID MB 160-153948/1-A

Repeat 1

Carrier No. 0

Batch ID 153948

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 11/4/2014 6:14:28 PM

Count Ended 11/4/2014 9:34:40 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 200.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.065	23	0.115	0.050
sd	0.000			0.008	4.796	0.024	0.025
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.410	93	0.465	0.055
sd	0.000			0.020	9.644	0.048	0.052

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Purple 8-11 - A

Addr: 8

Sample ID LCS 160-153948/2-A

Repeat 1

Carrier No. 0

Batch ID 153948

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 ***Sample*** **sd** 0 ***Sample***

Residual Wt 0 ***mg*** **sd** 0 ***mg***

Count Began 11/4/2014 6:15:22 PM

Count Ended 11/4/2014 9:35:35 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 200.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.119	606	3.030	2.911
sd	0.000			0.011	24.617	0.123	0.124
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.381	229	1.145	0.764
sd	0.000			0.020	15.133	0.076	0.078

	Net Activity dpm	LLD dpm	MDC DPM	MPC DPM	Net Concentration * DPM	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Currie

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Purple 8-11 - C

Addr: 10

Sample ID LCSB 160-153948/3-A

Repeat 1

Carrier No. 0

Batch ID 153948

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 ***Sample*** **sd** 0 ***Sample***

Residual Wt 0 ***mg*** **sd** 0 ***mg***

Count Began 11/4/2014 6:15:28 PM

Count Ended 11/4/2014 9:35:40 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 200.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.102	36	0.180	0.078
sd	0.000			0.010	6.000	0.030	0.032
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.374	3,726	18.630	18.256
sd	0.000			0.019	61.041	0.305	0.306

	Net Activity dpm	LLD dpm	MDC DPM	MPC DPM	Net Concentration * DPM	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Currie

Error = .00 **x sd**

Low Level Alpha/Beta Count Results
Sample Activity Report

Protean 12-15 - D **Address:** ***15***

Sample ID ***160-9071-F-1-A*** **Repeat** ***1***

Batch ID ***153948***

Count Routine ***Gross Alpha Beta*** **Detector Volts** ***1,515.0***

Sample Qty 0.000 **sd** 0.000

Residual Wt 0.000 ***mg*** **sd** 0.000 ***mg***

Count Date 11/5/2014 07:21 **Collection Date 1** **Half Life** 0.00 ***days***
Collection Date 2 **Decay Factor** 1.000

Sample Count Time 200.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.074	85	0.425	0.351
sd	0.000			0.009	9.220	0.046	0.047
Alpha to Beta	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.452	164	0.820	0.368
sd	0.000			0.021	12.806	0.064	0.067

	Net Activity dpm	LLD dpm	Net Concentration *	MDC	Limits	% of Limits
Alpha	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			
Beta	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			

*** Note: Decay Corrected MDC Method -** **Tb = Ts < 10**
Error = 0.00 **x sd**

GAS FLOW PROPORTIONAL COUNTER BATCH WORKSHEET

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Batch Number: 153948 Batch Start Date: 11/04/14 09:08 Batch Analyst: Hines, Joseph

Batch Method: Evaporation Batch End Date: 11/04/14 11:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	GrossWtPlncht	TareWtPlncht	MassPlncht	Sr-90 00023	Th-230 00024
MB 160-153948/1		Evaporation, 9310		200 mL	8.6502 g	8.6501 g	0.0001 g		
LCS 160-153948/2		Evaporation, 9310		200 mL	8.6565 g	8.6037 g	0.0528 g		1 mL
LCSB 160-153948/3		Evaporation, 9310		200 mL	8.6383 g	8.5852 g	0.0531 g	1 mL	
160-9071-F-1	SMC-09-20141027-21	Evaporation, 9310	T	86 mL	8.6798 g	8.6228 g	0.057 g		

Batch Notes	
Person's name who witnessed reagent drop	mrb
Analyst who added reagent	JAH
SOP Number	ST-RC-0002, ST-RC-0020

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GAS FLOW PROPORTIONAL COUNTER BATCH WORKSHEET

Lab Name: TestAmerica St. Louis Job No.: 160-9071-1

SDG No.:

Batch Number: 153948 Batch Start Date: 11/04/14 09:08 Batch Analyst: Hines, Joseph

Batch Method: Evaporation Batch End Date: 11/04/14 11:00

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LCS 160-153948/2		Evaporation, 9310		200 mL	8.6565 g	8.6037 g	0.0528 g		1 mL
LCSB 160-153948/3		Evaporation, 9310		200 mL	8.6383 g	8.5852 g	0.0531 g	1 mL	
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LCSB 160-153948/3		Evaporation, 9310		200 mL	8.6383 g	8.5852 g	0.0531 g	1 mL	
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LCS 160-153948/2		Evaporation, 9310		200 mL	8.6565 g	8.6037 g	0.0528 g		1 mL
LCSB 160-153948/3		Evaporation, 9310		200 mL	8.6383 g	8.5852 g	0.0531 g	1 mL	
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LCSB 160-153948/3		Evaporation, 9310		200 mL	8.6383 g	8.5852 g	0.0531 g	1 mL	
160-9071-F-1	SMC-09-20141027-21	Evaporation, 9310	T	86 mL	8.6798 g	8.6228 g	0.057 g		

Batch Notes	
Person's name who witnessed reagent drop	mrb
Analyst who added reagent	JAH
SOP Number	ST-RC-0002, ST-RC-0020

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

Daily Checks

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Gas Proportional Counter Daily Quality Control Checks

APPROVED
By Michael Williams at 11:06 am, Nov 04, 2014

Tuesday, November 04, 2014

Instrument: ***Orange***

Detector ID	Check Type	Alpha CPM	Alpha Mean	Alpha +/- limit	Alpha Deviation	Alpha Flag	Beta CPM	Beta Mean	Beta +/- limit	Beta Deviation	Beta Flag
Detector 0											
12:23 AM	**Efficiency**	9966.77	10149.65	304.49	-182.88	**Pass**					
	Background										
	Crosstalk	3204.500	3258.900	55.666	-54.400	**Pass**					
12:28 AM	**Efficiency**						33632.90	33739.55	1012.19	-106.65	**Pass**
	Background										
	Crosstalk						85.850	237.400	143.963	-151.550	**Pass**
3:55 AM	**Efficiency**										
	Background	0.140	0.086	0.024	0.054	**Pass**	0.385	0.396	0.065	-0.011	**Pass**
	Crosstalk										
Detector 1											
12:23 AM	**Efficiency**	9909.35	10173.40	305.20	-264.05	**Pass**					
	Background										
	Crosstalk	3043.500	3028.900	109.715	14.600	**Pass**					
12:28 AM	**Efficiency**						33360.41	33478.80	1004.36	-118.39	**Pass**
	Background										
	Crosstalk						12.704	42.975	30.711	-30.271	**Pass**
3:55 AM	**Efficiency**										
	Background	0.135	0.103	0.026	0.032	**Pass**	0.375	0.356	0.073	0.020	**Pass**
	Crosstalk										
Detector 2											
12:23 AM	**Efficiency**	10801.79	10972.86	329.19	-171.07	**Pass**					
	Background										
	Crosstalk	3386.500	3366.220	137.933	20.280	**Pass**					
12:28 AM	**Efficiency**						23050.01	23193.20	695.80	-143.19	**Pass**
	Background										
	Crosstalk						15.245	37.375	27.717	-22.130	**Pass**

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Gas Proportional Counter Daily Quality Control Checks

Tuesday, November 04, 2014

Instrument: ***Orange***

Detector ID	Check Type	Alpha CPM	Alpha Mean	Alpha +/- limit	Alpha Deviation	Alpha Flag	Beta CPM	Beta Mean	Beta +/- limit	Beta Deviation	Beta Flag
3:55 AM	**Efficiency**										
	Background	0.260	0.234	0.038	0.026	**Pass**	0.590	0.627	0.074	-0.037	**Pass**
	Crosstalk										
Detector 3											
12:23 AM	**Efficiency**	10548.90	10703.24	321.10	-154.34	**Pass**					
	Background										
	Crosstalk	3433.500	3488.780	118.326	-55.280	**Pass**					
12:28 AM	**Efficiency**						30524.05	30620.69	918.62	-96.64	**Pass**
	Background										
	Crosstalk						18.294	43.524	34.997	-25.230	**Pass**
3:55 AM	**Efficiency**										
	Background	0.210	0.095	0.020	0.116	**FAIL**	0.470	0.507	0.062	-0.037	**Pass**
	Crosstalk										
9:42 AM	**Efficiency**										
	Background	0.135	0.095	0.020	0.041	**Pass**	0.565	0.507	0.062	0.058	**Pass**
	Crosstalk										
Detector 4											
3:55 AM	**Efficiency**										
	Background	0.240	0.094	0.026	0.146	**FAIL**	0.395	0.435	0.081	-0.040	**Pass**
	Crosstalk										
Detector 5											
12:24 AM	**Efficiency**	10627.52	10779.16	323.37	-151.64	**Pass**					
	Background										
	Crosstalk	3907.000	3963.700	62.110	-56.700	**Pass**					
12:28 AM	**Efficiency**						21512.94	21843.90	655.32	-330.96	**Pass**
	Background										
	Crosstalk						6.606	5.095	1.480	1.511	**Pass**

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Gas Proportional Counter Daily Quality Control Checks

Tuesday, November 04, 2014

Instrument: Orange

Detector ID	Check Type	Alpha CPM	Alpha Mean	Alpha +/- limit	Alpha Deviation	Alpha Flag	Beta CPM	Beta Mean	Beta +/- limit	Beta Deviation	Beta Flag
3:55 AM	**Efficiency**										
	Background	0.255	0.155	0.047	0.100	**Pass**	0.745	0.425	0.091	0.320	**FAIL**
	Crosstalk										
9:42 AM	**Efficiency**										
	Background	0.315	0.155	0.047	0.160	**FAIL**	0.390	0.425	0.091	-0.035	**Pass**
	Crosstalk										
Detector 6											
12:24 AM	**Efficiency**	10458.75	10768.46	323.05	-309.71	**Pass**					
	Background										
	Crosstalk	3754.000	3929.080	151.831	-175.080	**Pass**					
12:28 AM	**Efficiency**						28914.78	29157.55	874.73	-242.77	**Pass**
	Background										
	Crosstalk						9.655	5.750	1.400	3.905	**WARNING**
3:55 AM	**Efficiency**										
	Background	0.190	0.108	0.029	0.082	**Pass**	0.560	0.495	0.060	0.065	**Pass**
	Crosstalk										
Detector 7											
3:55 AM	**Efficiency**										
	Background	0.145	0.087	0.039	0.058	**Pass**	0.470	0.383	0.066	0.087	**Pass**
	Crosstalk										
Detector 8											
12:21 AM	**Efficiency**						33652.14	33564.38	1006.93	87.77	**Pass**
	Background										
	Crosstalk						14.736	16.400	3.440	-1.664	**Pass**
12:26 AM	**Efficiency**	9884.24	10109.55	303.29	-225.31	**Pass**					
	Background										
	Crosstalk	3297.500	3394.400	50.504	-96.900	**Pass**					

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Gas Proportional Counter Daily Quality Control Checks

Tuesday, November 04, 2014

Instrument: Orange

Detector ID	Check Type	Alpha CPM	Alpha Mean	Alpha +/- limit	Alpha Deviation	Alpha Flag	Beta CPM	Beta Mean	Beta +/- limit	Beta Deviation	Beta Flag
3:55 AM	**Efficiency**										
	Background	0.120	0.074	0.023	0.047	**Pass**	0.505	0.379	0.047	0.126	**Pass**
	Crosstalk										
Detector 9											
12:21 AM	**Efficiency**						33885.81	33894.25	1016.83	-8.44	**Pass**
	Background										
	Crosstalk						13.212	14.000	4.085	-0.788	**Pass**
12:26 AM	**Efficiency**	9852.77	10270.92	308.13	-418.15	**FAIL**					
	Background										
	Crosstalk	3198.000	3336.480	71.578	-138.480	**Pass**					
12:37 AM	**Efficiency**	9846.26	10270.92	308.13	-424.66	**FAIL**					
	Background										
	Crosstalk	3237.500	3336.480	71.578	-98.980	**Pass**					
3:58 AM	**Efficiency**										
	Background	0.190	0.124	0.039	0.066	**Pass**	0.470	0.391	0.066	0.079	**Pass**
	Crosstalk										
Detector 10											
12:21 AM	**Efficiency**						23279.19	23268.15	698.04	11.04	**Pass**
	Background										
	Crosstalk						9.655	5.525	1.626	4.130	**WARNING**
12:26 AM	**Efficiency**	9153.66	9314.42	279.43	-160.76	**Pass**					
	Background										
	Crosstalk	5246.000	5412.260	206.903	-166.260	**Pass**					
3:55 AM	**Efficiency**										
	Background	0.225	0.101	0.029	0.124	**FAIL**	0.565	0.449	0.071	0.116	**Pass**
	Crosstalk										
9:42 AM	**Efficiency**										
	Background	0.185	0.101	0.029	0.084	**Pass**	0.370	0.449	0.071	-0.079	**Pass**
	Crosstalk										

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Gas Proportional Counter Daily Quality Control Checks

Tuesday, November 04, 2014

Instrument: Orange

Detector ID	Check Type	Alpha CPM	Alpha Mean	Alpha +/- limit	Alpha Deviation	Alpha Flag	Beta CPM	Beta Mean	Beta +/- limit	Beta Deviation	Beta Flag
Detector 11											
12:22 AM	**Efficiency**						30918.06	29987.20	899.62	930.86	**FAIL**
	Background										
	Crosstalk						7.114	15.700	2.687	-8.586	**DOEF**
12:26 AM	**Efficiency**	10735.18	10755.42	322.66	-20.24	**Pass**					
	Background										
	Crosstalk	3354.000	3246.680	84.085	107.320	**Pass**					
12:37 AM	**Efficiency**						30876.84	29987.20	899.62	889.64	**Pass**
	Background										
	Crosstalk						14.736	15.700	2.687	-0.964	**Pass**
3:58 AM	**Efficiency**										
	Background	0.170	0.110	0.029	0.061	**Pass**	0.590	0.529	0.073	0.061	**Pass**
	Crosstalk										
Detector 12											
12:22 AM	**Efficiency**						25690.74	25927.73	777.83	-236.99	**Pass**
	Background										
	Crosstalk						11.688	12.950	1.629	-1.262	**Pass**
12:26 AM	**Efficiency**	10626.48	11039.74	331.19	-413.26	**FAIL**					
	Background										
	Crosstalk	3519.000	3628.500	68.433	-109.500	**Pass**					
12:37 AM	**Efficiency**	10589.42	11039.74	331.19	-450.32	**FAIL**					
	Background										
	Crosstalk	3565.000	3628.500	68.433	-63.500	**Pass**					
3:57 AM	**Efficiency**										
	Background	0.200	0.119	0.030	0.081	**Pass**	0.655	0.572	0.072	0.083	**Pass**
	Crosstalk										
Detector 13											

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Gas Proportional Counter Daily Quality Control Checks

Tuesday, November 04, 2014

Instrument: Orange

Detector ID	Check Type	Alpha CPM	Alpha Mean	Alpha +/- limit	Alpha Deviation	Alpha Flag	Beta CPM	Beta Mean	Beta +/- limit	Beta Deviation	Beta Flag
12:22 AM	**Efficiency**						21857.86	22266.53	668.00	-408.67	**Pass**
	Background										
	Crosstalk						12.704	14.975	3.432	-2.271	**Pass**
12:27 AM	**Efficiency**	11082.71	11233.00	336.99	-150.29	**Pass**					
	Background										
	Crosstalk	3439.000	3521.820	75.777	-82.820	**Pass**					
3:55 AM	**Efficiency**										
	Background	0.240	0.158	0.041	0.082	**Pass**	0.575	0.525	0.058	0.050	**Pass**
	Crosstalk										
Detector 14											
3:56 AM	**Efficiency**										
	Background	0.000	0.138	0.037	-0.138	**FAIL**	0.000	0.432	0.047	-0.432	**FAIL**
	Crosstalk										
Detector 15											
12:22 AM	**Efficiency**						27522.72	27467.78	824.03	54.94	**Pass**
	Background										
	Crosstalk						19.818	21.400	5.218	-1.582	**Pass**
12:27 AM	**Efficiency**	11584.55	11797.00	353.91	-212.45	**Pass**					
	Background										
	Crosstalk	3470.500	3542.000	85.963	-71.500	**Pass**					
3:56 AM	**Efficiency**										
	Background	0.210	0.148	0.030	0.062	**Pass**	0.560	0.492	0.085	0.068	**Pass**
	Crosstalk										
Detector 16											
12:24 AM	**Efficiency**						33089.30	33491.33	1004.74	-402.03	**Pass**
	Background										
	Crosstalk						25.408	32.800	8.069	-7.392	**Pass**

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Gas Proportional Counter Daily Quality Control Checks

Tuesday, November 04, 2014

Instrument: Orange

Detector ID	Check Type	Alpha CPM	Alpha Mean	Alpha +/- limit	Alpha Deviation	Alpha Flag	Beta CPM	Beta Mean	Beta +/- limit	Beta Deviation	Beta Flag
12:29 AM	**Efficiency**	9845.72	10041.75	301.25	-196.03	**Pass**					
	Background										
	Crosstalk	3162.500	3273.800	38.183	-111.300	**WARNING**					
3:56 AM	**Efficiency**										
	Background	0.165	0.123	0.033	0.043	**Pass**	0.320	0.498	0.063	-0.178	**Pass**
	Crosstalk										
Detector 17											
12:25 AM	**Efficiency**						33370.26	33457.18	1003.72	-86.92	**Pass**
	Background										
	Crosstalk						8.130	13.975	2.967	-5.845	**Pass**
12:29 AM	**Efficiency**	9726.07	10056.48	301.69	-330.41	**FAIL**					
	Background										
	Crosstalk	3302.500	3425.740	60.289	-123.240	**WARNING**					
12:39 AM	**Efficiency**	9713.05	10056.48	301.69	-343.43	**FAIL**					
	Background										
	Crosstalk	3294.500	3425.740	60.289	-131.240	**WARNING**					
4:00 AM	**Efficiency**										
	Background	0.155	0.146	0.043	0.009	**Pass**	0.560	0.433	0.078	0.127	**Pass**
	Crosstalk										
Detector 18											
12:25 AM	**Efficiency**						23199.48	23209.68	696.29	-10.19	**Pass**
	Background										
	Crosstalk						11.688	16.100	4.093	-4.412	**Pass**
12:29 AM	**Efficiency**	11026.13	11053.86	331.62	-27.73	**Pass**					
	Background										
	Crosstalk	3567.500	3611.520	52.801	-44.020	**Pass**					
9:42 AM	**Efficiency**										
	Background	0.205	0.107	0.025	0.098	**FAIL**	0.365	0.402	0.044	-0.037	**Pass**
	Crosstalk										

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Gas Proportional Counter Daily Quality Control Checks

Tuesday, November 04, 2014

Instrument: Orange

Detector ID	Check Type	Alpha CPM	Alpha Mean	Alpha +/- limit	Alpha Deviation	Alpha Flag	Beta CPM	Beta Mean	Beta +/- limit	Beta Deviation	Beta Flag
Detector 19											
12:25 AM	**Efficiency**						31030.20	30982.63	929.48	47.57	**Pass**
	Background										
	Crosstalk						14.736	16.650	4.107	-1.914	**Pass**
12:29 AM	**Efficiency**	10904.37	11009.96	330.30	-105.59	**Pass**					
	Background										
	Crosstalk	3664.000	3716.300	50.984	-52.300	**Pass**					
3:56 AM	**Efficiency**										
	Background	0.135	0.089	0.033	0.046	**Pass**	0.400	0.374	0.061	0.026	**Pass**
	Crosstalk										
Detector 20											
12:25 AM	**Efficiency**						25328.26	25820.98	774.63	-492.72	**Pass**
	Background										
	Crosstalk						13.720	20.300	5.444	-6.580	**Pass**
12:29 AM	**Efficiency**	10576.42	10934.68	328.04	-358.26	**FAIL**					
	Background										
	Crosstalk	3379.000	3574.300	107.105	-195.300	**Pass**					
3:56 AM	**Efficiency**										
	Background	0.135	0.084	0.024	0.051	**Pass**	0.360	0.354	0.051	0.007	**Pass**
	Crosstalk										
Detector 21											
12:25 AM	**Efficiency**						21752.13	22199.20	665.98	-447.07	**Pass**
	Background										
	Crosstalk						14.736	13.000	2.763	1.736	**Pass**
12:29 AM	**Efficiency**	11022.66	11170.12	335.10	-147.46	**Pass**					
	Background										
	Crosstalk	3543.000	3672.660	78.069	-129.660	**Pass**					

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Gas Proportional Counter Daily Quality Control Checks

Tuesday, November 04, 2014

Instrument: Orange

Detector ID	Check Type	Alpha CPM	Alpha Mean	Alpha +/- limit	Alpha Deviation	Alpha Flag	Beta CPM	Beta Mean	Beta +/- limit	Beta Deviation	Beta Flag
3:56 AM	**Efficiency**										
	Background	0.185	0.088	0.028	0.098	**FAIL**	0.410	0.312	0.035	0.098	**Pass**
	Crosstalk										
9:42 AM	**Efficiency**										
	Background	0.200	0.088	0.028	0.113	**FAIL**	0.395	0.312	0.035	0.083	**Pass**
	Crosstalk										
Detector 22											
12:25 AM	**Efficiency**						29088.46	29331.13	879.93	-242.66	**Pass**
	Background										
	Crosstalk						9.655	13.075	3.867	-3.420	**Pass**
12:30 AM	**Efficiency**	10765.74	10918.70	327.56	-152.96	**Pass**					
	Background										
	Crosstalk	3469.500	3612.240	230.452	-142.740	**Pass**					
3:56 AM	**Efficiency**										
	Background	0.140	0.081	0.017	0.060	**FAIL**	0.325	0.388	0.053	-0.063	**Pass**
	Crosstalk										
9:42 AM	**Efficiency**										
	Background	0.160	0.081	0.017	0.080	**FAIL**	0.320	0.388	0.053	-0.068	**Pass**
	Crosstalk										
Detector 23											
12:25 AM	**Efficiency**						27324.59	27644.68	829.34	-320.09	**Pass**
	Background										
	Crosstalk						8.639	13.125	3.128	-4.486	**Pass**
12:30 AM	**Efficiency**	11560.64	11544.58	346.34	16.07	**Pass**					
	Background										
	Crosstalk	3657.000	3809.981	484.264	-152.981	**Pass**					
3:56 AM	**Efficiency**										
	Background	0.075	0.098	0.039	-0.023	**Pass**	0.510	0.441	0.090	0.069	**Pass**
	Crosstalk										

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Gas Proportional Counter Daily Quality Control Checks

APPROVED
By Michael Williams at 11:01 am, Nov 05, 2014

Wednesday, November 05, 2014

Instrument: ***Protean***

Detector ID	Check Type	Alpha CPM	Alpha Mean	Alpha +/- limit	Alpha Deviation	Alpha Flag	Beta CPM	Beta Mean	Beta +/- limit	Beta Deviation	Beta Flag
Detector 0											
4:26 AM	**Efficiency**										
	Background	0.155	0.070	0.028	0.085	**FAIL**	0.565	0.668	0.088	-0.103	**Pass**
	Crosstalk										
Detector 1											
4:26 AM	**Efficiency**										
	Background	0.080	0.107	0.034	-0.027	**Pass**	0.665	0.681	0.171	-0.016	**Pass**
	Crosstalk										
Detector 2											
4:26 AM	**Efficiency**										
	Background	0.125	0.082	0.026	0.043	**Pass**	0.540	0.673	0.086	-0.133	**Pass**
	Crosstalk										
Detector 3											
4:26 AM	**Efficiency**										
	Background	0.120	0.086	0.031	0.034	**Pass**	0.705	0.682	0.076	0.024	**Pass**
	Crosstalk										
Detector 4											
12:57 AM	**Efficiency**	10254.15	10742.43	322.27	-488.28	**FAIL**					
	Background										
	Crosstalk	3739.500	3940.475	62.515	-200.975	**DOEF**					
1:01 AM	**Efficiency**						25449.53	25513.50	765.41	-63.97	**Pass**
	Background										
	Crosstalk						11.183	7.750	1.781	3.433	**Pass**
1:07 AM	**Efficiency**	10374.85	10742.43	322.27	-367.58	**FAIL**					
	Background										
	Crosstalk	3713.000	3940.475	62.515	-227.475	**DOEF**					

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Gas Proportional Counter Daily Quality Control Checks

Wednesday, November 05, 2014

Instrument: ***Protean***

Detector ID	Check Type	Alpha CPM	Alpha Mean	Alpha +/- limit	Alpha Deviation	Alpha Flag	Beta CPM	Beta Mean	Beta +/- limit	Beta Deviation	Beta Flag
4:28 AM	**Efficiency**										
	Background	0.095	0.076	0.034	0.019	**Pass**	0.495	0.471	0.064	0.024	**Pass**
	Crosstalk										
Detector 5											
12:57 AM	**Efficiency**	10491.54	10696.10	320.88	-204.56	**Pass**					
	Background										
	Crosstalk	4267.000	4341.650	74.357	-74.650	**Pass**					
1:01 AM	**Efficiency**						21393.73	21829.28	654.88	-435.55	**Pass**
	Background										
	Crosstalk						4.575	4.500	1.606	0.075	**Pass**
4:26 AM	**Efficiency**										
	Background	0.085	0.082	0.027	0.004	**Pass**	0.440	0.480	0.071	-0.040	**Pass**
	Crosstalk										
Detector 6											
12:58 AM	**Efficiency**	10669.84	10786.85	323.61	-117.01	**Pass**					
	Background										
	Crosstalk	3857.500	3971.350	81.097	-113.850	**Pass**					
1:01 AM	**Efficiency**						28577.90	28744.63	862.34	-166.73	**Pass**
	Background										
	Crosstalk						4.067	6.950	1.932	-2.883	**Pass**
4:26 AM	**Efficiency**										
	Background	0.140	0.110	0.040	0.030	**Pass**	0.495	0.632	0.098	-0.137	**Pass**
	Crosstalk										
Detector 7											
12:58 AM	**Efficiency**	11426.61	11591.35	347.74	-164.74	**Pass**					
	Background										
	Crosstalk	4115.500	4147.925	67.105	-32.425	**Pass**					

TestAmerica
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Wednesday, November 05, 2014

Instrument: Protean

Detector ID	Check Type	Alpha CPM	Alpha Mean	Alpha +/- limit	Alpha Deviation	Alpha Flag	Beta CPM	Beta Mean	Beta +/- limit	Beta Deviation	Beta Flag
1:02 AM	**Efficiency**						26858.51	27031.85	810.96	-173.34	**Pass**
	Background										
	Crosstalk						7.625	6.725	2.256	0.900	**Pass**
4:27 AM	**Efficiency**										
	Background	0.185	0.074	0.017	0.111	**FAIL**	0.615	0.539	0.056	0.076	**Pass**
	Crosstalk										
Detector 8											
12:58 AM	**Efficiency**						32439.42	32415.10	972.45	24.32	**Pass**
	Background										
	Crosstalk						9.658	18.675	3.469	-9.017	**WARNING**
1:02 AM	**Efficiency**	9587.82	9908.30	297.25	-320.48	**FAIL**					
	Background										
	Crosstalk	3392.000	3405.250	44.091	-13.250	**Pass**					
1:07 AM	**Efficiency**	9594.82	9908.30	297.25	-313.48	**FAIL**					
	Background										
	Crosstalk	3323.500	3405.250	44.091	-81.750	**Pass**					
4:29 AM	**Efficiency**										
	Background	0.140	0.078	0.026	0.062	**Pass**	0.480	0.494	0.082	-0.014	**Pass**
	Crosstalk										
Detector 9											
12:58 AM	**Efficiency**						32236.42	31949.05	958.47	287.37	**Pass**
	Background										
	Crosstalk						10.166	10.625	2.470	-0.459	**Pass**
1:02 AM	**Efficiency**	9581.52	9842.05	295.26	-260.53	**Pass**					
	Background										
	Crosstalk	3332.500	3551.250	60.283	-218.750	**DOEF**					
4:27 AM	**Efficiency**										
	Background	0.145	0.093	0.031	0.052	**Pass**	0.455	0.435	0.073	0.020	**Pass**
	Crosstalk										

TestAmerica
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Wednesday, November 05, 2014

Instrument: Protean

Detector ID	Check Type	Alpha CPM	Alpha Mean	Alpha +/- limit	Alpha Deviation	Alpha Flag	Beta CPM	Beta Mean	Beta +/- limit	Beta Deviation	Beta Flag
Detector 10											
4:27 AM	**Efficiency**										
	Background	0.210	0.081	0.033	0.129	**FAIL**	1.045	0.505	0.066	0.541	**FAIL**
	Crosstalk										
Detector 11											
12:58 AM	**Efficiency**						29336.28	29460.18	883.81	-123.90	**Pass**
	Background										
	Crosstalk						8.133	9.175	2.617	-1.042	**Pass**
1:02 AM	**Efficiency**	10320.76	10559.18	316.78	-238.42	**Pass**					
	Background										
	Crosstalk	3169.000	3216.625	67.960	-47.625	**Pass**					
4:27 AM	**Efficiency**										
	Background	0.115	0.073	0.034	0.042	**Pass**	0.555	0.494	0.088	0.062	**Pass**
	Crosstalk										
Detector 12											
12:58 AM	**Efficiency**						25763.28	25756.63	772.70	6.65	**Pass**
	Background										
	Crosstalk						17.283	23.275	5.828	-5.992	**Pass**
1:02 AM	**Efficiency**	10450.97	11044.20	331.33	-593.23	**FAIL**					
	Background										
	Crosstalk	3547.500	3727.625	63.771	-180.125	**WARNING**					
1:10 AM	**Efficiency**	10595.72	11044.20	331.33	-448.48	**FAIL**					
	Background										
	Crosstalk	3516.500	3727.625	63.771	-211.125	**DOEF**					
4:30 AM	**Efficiency**										
	Background	0.115	0.111	0.039	0.004	**Pass**	0.570	0.567	0.092	0.003	**Pass**
	Crosstalk										
Detector 13											

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THE LEADER IN ENVIRONMENTAL TESTING

Gas Proportional Counter Daily Quality Control Checks

Wednesday, November 05, 2014

Instrument: Protean

Detector ID	Check Type	Alpha CPM	Alpha Mean	Alpha +/- limit	Alpha Deviation	Alpha Flag	Beta CPM	Beta Mean	Beta +/- limit	Beta Deviation	Beta Flag
12:58 AM	**Efficiency**						21740.29	22370.78	671.12	-630.48	**Pass**
	Background										
	Crosstalk						10.166	8.650	3.573	1.516	**Pass**
1:02 AM	**Efficiency**	10957.82	11125.53	333.77	-167.70	**Pass**					
	Background										
	Crosstalk	3785.000	3909.525	59.844	-124.525	**WARNING**					
4:28 AM	**Efficiency**										
	Background	0.115	0.096	0.031	0.019	**Pass**	0.475	0.578	0.127	-0.103	**Pass**
	Crosstalk										
Detector 14											
12:58 AM	**Efficiency**						28628.59	28794.43	863.83	-165.84	**Pass**
	Background										
	Crosstalk						4.067	6.675	1.772	-2.608	**Pass**
1:02 AM	**Efficiency**	10481.02	10778.58	323.36	-297.55	**Pass**					
	Background										
	Crosstalk	3797.000	3926.850	67.625	-129.850	**Pass**					
4:28 AM	**Efficiency**										
	Background	0.195	0.106	0.042	0.089	**Pass**	0.440	0.509	0.110	-0.069	**Pass**
	Crosstalk										
Detector 15											
12:58 AM	**Efficiency**						27213.04	27185.60	815.57	27.44	**Pass**
	Background										
	Crosstalk						7.625	6.350	1.582	1.275	**Pass**
1:02 AM	**Efficiency**	11364.50	11477.65	344.33	-113.15	**Pass**					
	Background										
	Crosstalk	4077.000	4151.175	54.751	-74.175	**Pass**					
4:28 AM	**Efficiency**										
	Background	0.165	0.110	0.036	0.055	**Pass**	0.550	0.583	0.099	-0.033	**Pass**
	Crosstalk										

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Gas Proportional Counter Daily Quality Control Checks

APPROVED
By Michael Williams at 10:55 am, Nov 06, 2014

Thursday, November 06, 2014

Instrument: ***Protean***

Detector ID	Check Type	Alpha CPM	Alpha Mean	Alpha +/- limit	Alpha Deviation	Alpha Flag	Beta CPM	Beta Mean	Beta +/- limit	Beta Deviation	Beta Flag
Detector 0											
3:35 AM	**Efficiency**										
	Background	0.125	0.070	0.028	0.055	**Pass**	0.690	0.668	0.088	0.022	**Pass**
	Crosstalk										
Detector 1											
3:36 AM	**Efficiency**										
	Background	0.165	0.107	0.034	0.059	**Pass**	0.660	0.681	0.171	-0.021	**Pass**
	Crosstalk										
Detector 2											
3:36 AM	**Efficiency**										
	Background	0.120	0.082	0.026	0.038	**Pass**	0.610	0.673	0.086	-0.063	**Pass**
	Crosstalk										
Detector 3											
3:36 AM	**Efficiency**										
	Background	0.095	0.086	0.031	0.009	**Pass**	0.660	0.682	0.076	-0.022	**Pass**
	Crosstalk										
Detector 4											
12:06 AM	**Efficiency**	10297.26	10742.43	322.27	-445.16	**FAIL**					
	Background										
	Crosstalk	3753.000	3940.475	62.515	-187.475	**WARNING**					
12:10 AM	**Efficiency**						25438.79	25513.50	765.41	-74.71	**Pass**
	Background										
	Crosstalk						11.184	7.750	1.781	3.434	**Pass**
12:17 AM	**Efficiency**	10421.47	10742.43	322.27	-320.95	**Pass**					
	Background										
	Crosstalk	3747.000	3940.475	62.515	-193.475	**DOEF**					

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Gas Proportional Counter Daily Quality Control Checks

Thursday, November 06, 2014

Instrument: Protean

Detector ID	Check Type	Alpha CPM	Alpha Mean	Alpha +/- limit	Alpha Deviation	Alpha Flag	Beta CPM	Beta Mean	Beta +/- limit	Beta Deviation	Beta Flag
3:38 AM	**Efficiency**										
	Background	0.100	0.076	0.034	0.024	**Pass**	0.475	0.471	0.064	0.004	**Pass**
	Crosstalk										
Detector 5											
12:06 AM	**Efficiency**	10664.88	10696.10	320.88	-31.22	**Pass**					
	Background										
	Crosstalk	4116.000	4341.650	74.357	-225.650	**DOEF**					
12:10 AM	**Efficiency**						21691.37	21829.28	654.88	-137.91	**Pass**
	Background										
	Crosstalk						3.050	4.500	1.606	-1.450	**Pass**
3:36 AM	**Efficiency**										
	Background	0.150	0.082	0.027	0.069	**Pass**	0.470	0.480	0.071	-0.010	**Pass**
	Crosstalk										
Detector 6											
12:06 AM	**Efficiency**	10659.87	10786.85	323.61	-126.98	**Pass**					
	Background										
	Crosstalk	3791.000	3971.350	81.097	-180.350	**WARNING**					
12:10 AM	**Efficiency**						28820.07	28744.63	862.34	75.45	**Pass**
	Background										
	Crosstalk						4.575	6.950	1.932	-2.375	**Pass**
3:36 AM	**Efficiency**										
	Background	0.125	0.110	0.040	0.015	**Pass**	0.645	0.632	0.098	0.013	**Pass**
	Crosstalk										
Detector 7											
12:06 AM	**Efficiency**	11460.21	11591.35	347.74	-131.14	**Pass**					
	Background										
	Crosstalk	4044.000	4147.925	67.105	-103.925	**Pass**					

TestAmerica
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Gas Proportional Counter Daily Quality Control Checks

Thursday, November 06, 2014

Instrument: Protean

Detector ID	Check Type	Alpha CPM	Alpha Mean	Alpha +/- limit	Alpha Deviation	Alpha Flag	Beta CPM	Beta Mean	Beta +/- limit	Beta Deviation	Beta Flag
12:10 AM	**Efficiency**						27102.13	27031.85	810.96	70.28	**Pass**
	Background										
	Crosstalk						6.100	6.725	2.256	-0.625	**Pass**
3:36 AM	**Efficiency**										
	Background	0.140	0.074	0.017	0.066	**FAIL**	0.680	0.539	0.056	0.142	**Pass**
	Crosstalk										
10:02 AM	**Efficiency**										
	Background	0.100	0.074	0.017	0.026	**Pass**	0.585	0.539	0.056	0.046	**Pass**
	Crosstalk										
Detector 8											
12:06 AM	**Efficiency**						32452.95	32415.10	972.45	37.85	**Pass**
	Background										
	Crosstalk						23.384	18.675	3.469	4.709	**Pass**
12:10 AM	**Efficiency**	9718.39	9908.30	297.25	-189.91	**Pass**					
	Background										
	Crosstalk	3247.500	3405.250	44.091	-157.750	**DOEF**					
3:36 AM	**Efficiency**										
	Background	0.135	0.078	0.026	0.057	**Pass**	0.625	0.494	0.082	0.131	**Pass**
	Crosstalk										
Detector 9											
12:06 AM	**Efficiency**						32424.98	31949.05	958.47	475.93	**Pass**
	Background										
	Crosstalk						6.100	10.625	2.470	-4.525	**Pass**
12:10 AM	**Efficiency**	9604.10	9842.05	295.26	-237.95	**Pass**					
	Background										
	Crosstalk	3345.500	3551.250	60.283	-205.750	**DOEF**					
3:36 AM	**Efficiency**										
	Background	0.150	0.093	0.031	0.057	**Pass**	0.490	0.435	0.073	0.055	**Pass**
	Crosstalk										

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Thursday, November 06, 2014

Instrument: Protean

Detector ID	Check Type	Alpha CPM	Alpha Mean	Alpha +/- limit	Alpha Deviation	Alpha Flag	Beta CPM	Beta Mean	Beta +/- limit	Beta Deviation	Beta Flag
Detector 10											
3:36 AM	**Efficiency**										
	Background	0.165	0.081	0.033	0.084	**Pass**	1.205	0.505	0.066	0.701	**FAIL**
	Crosstalk										
Detector 11											
12:07 AM	**Efficiency**						29395.70	29460.18	883.81	-64.48	**Pass**
	Background										
	Crosstalk						7.625	9.175	2.617	-1.550	**Pass**
12:10 AM	**Efficiency**	10246.68	10559.18	316.78	-312.50	**Pass**					
	Background										
	Crosstalk	3213.000	3216.625	67.960	-3.625	**Pass**					
3:36 AM	**Efficiency**										
	Background	0.150	0.073	0.034	0.077	**Pass**	0.625	0.494	0.088	0.132	**Pass**
	Crosstalk										
Detector 12											
12:07 AM	**Efficiency**						25600.81	25756.63	772.70	-155.82	**Pass**
	Background										
	Crosstalk						23.384	23.275	5.828	0.109	**Pass**
12:10 AM	**Efficiency**	10686.41	11044.20	331.33	-357.79	**FAIL**					
	Background										
	Crosstalk	3556.500	3727.625	63.771	-171.125	**WARNING**					
12:19 AM	**Efficiency**	10637.83	11044.20	331.33	-406.37	**FAIL**					
	Background										
	Crosstalk	3469.000	3727.625	63.771	-258.625	**DOEF**					
3:40 AM	**Efficiency**										
	Background	0.125	0.111	0.039	0.014	**Pass**	0.685	0.567	0.092	0.118	**Pass**
	Crosstalk										
Detector 13											

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Gas Proportional Counter Daily Quality Control Checks

Thursday, November 06, 2014

Instrument: ***Protean***

Detector ID	Check Type	Alpha CPM	Alpha Mean	Alpha +/- limit	Alpha Deviation	Alpha Flag	Beta CPM	Beta Mean	Beta +/- limit	Beta Deviation	Beta Flag
12:07 AM	**Efficiency**						21678.55	22370.78	671.12	-692.23	**FAIL**
	Background										
	Crosstalk						7.625	8.650	3.573	-1.025	**Pass**
12:10 AM	**Efficiency**	10885.75	11125.53	333.77	-239.78	**Pass**					
	Background										
	Crosstalk	3808.000	3909.525	59.844	-101.525	**Pass**					
3:37 AM	**Efficiency**										
	Background	0.130	0.096	0.031	0.034	**Pass**	0.465	0.578	0.127	-0.113	**Pass**
	Crosstalk										
Detector 14											
12:07 AM	**Efficiency**						28827.79	28794.43	863.83	33.36	**Pass**
	Background										
	Crosstalk						12.201	6.675	1.772	5.526	**DOEF**
12:10 AM	**Efficiency**	10601.27	10778.58	323.36	-177.30	**Pass**					
	Background										
	Crosstalk	3844.500	3926.850	67.625	-82.350	**Pass**					
3:37 AM	**Efficiency**										
	Background	0.155	0.106	0.042	0.049	**Pass**	0.630	0.509	0.110	0.121	**Pass**
	Crosstalk										
Detector 15											
12:07 AM	**Efficiency**						27099.87	27185.60	815.57	-85.73	**Pass**
	Background										
	Crosstalk						8.134	6.350	1.582	1.784	**Pass**
12:10 AM	**Efficiency**	11383.58	11477.65	344.33	-94.07	**Pass**					
	Background										
	Crosstalk	4138.500	4151.175	54.751	-12.675	**Pass**					
3:37 AM	**Efficiency**										
	Background	0.115	0.110	0.036	0.005	**Pass**	0.625	0.583	0.099	0.042	**Pass**
	Crosstalk										

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Gas Proportional Counter Daily Quality Control Checks

APPROVED
By Michael Williams at 11:04 am, Nov 04, 2014

Tuesday, November 04, 2014

Instrument: ***Purple***

Detector ID	Check Type	Alpha CPM	Alpha Mean	Alpha +/- limit	Alpha Deviation	Alpha Flag	Beta CPM	Beta Mean	Beta +/- limit	Beta Deviation	Beta Flag
Detector 0											
12:02 AM	**Efficiency**	10095.28	10254.75	307.64	-159.47	**Pass**					
	Background										
	Crosstalk	3137.500	3270.675	43.843	-133.175	**DOEF**					
12:06 AM	**Efficiency**						34109.07	34083.23	1022.50	25.85	**Pass**
	Background										
	Crosstalk						187.001	320.900	109.197	-133.899	**Pass**
3:36 AM	**Efficiency**										
	Background	0.125	0.117	0.092	0.008	**Pass**	0.375	0.474	0.245	-0.099	**Pass**
	Crosstalk										
Detector 1											
12:02 AM	**Efficiency**	10212.84	10486.08	314.58	-273.24	**Pass**					
	Background										
	Crosstalk	3072.000	3338.100	65.425	-266.100	**DOEF**					
12:06 AM	**Efficiency**						33807.48	33980.83	1019.42	-173.34	**Pass**
	Background										
	Crosstalk						235.276	373.900	125.183	-138.624	**Pass**
3:36 AM	**Efficiency**										
	Background	0.200	0.117	0.033	0.083	**Pass**	0.580	0.505	0.086	0.075	**Pass**
	Crosstalk										
Detector 2											
12:02 AM	**Efficiency**	11029.16	11216.78	336.50	-187.62	**Pass**					
	Background										
	Crosstalk	3619.000	3748.500	91.164	-129.500	**Pass**					
12:06 AM	**Efficiency**						23535.66	23729.90	711.90	-194.24	**Pass**
	Background										
	Crosstalk						40.652	68.100	29.539	-27.448	**Pass**

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Gas Proportional Counter Daily Quality Control Checks

Tuesday, November 04, 2014

Instrument: ***Purple***

Detector ID	Check Type	Alpha CPM	Alpha Mean	Alpha +/- limit	Alpha Deviation	Alpha Flag	Beta CPM	Beta Mean	Beta +/- limit	Beta Deviation	Beta Flag
3:36 AM	**Efficiency**										
	Background	0.200	0.109	0.038	0.092	**Pass**	0.455	0.455	0.096	0.000	**Pass**
	Crosstalk										
Detector 3											
12:02 AM	**Efficiency**	10837.34	10944.84	328.35	-107.50	**Pass**					
	Background										
	Crosstalk	3609.500	3782.960	81.275	-173.460	**WARNING**					
12:06 AM	**Efficiency**						31138.90	31136.73	934.10	2.18	**Pass**
	Background										
	Crosstalk						15.245	23.375	10.367	-8.130	**Pass**
3:36 AM	**Efficiency**										
	Background	0.170	0.133	0.042	0.037	**Pass**	0.685	0.535	0.103	0.150	**Pass**
	Crosstalk										
Detector 4											
12:02 AM	**Efficiency**	10629.01	10997.02	329.91	-368.01	**FAIL**					
	Background										
	Crosstalk	3390.500	3686.360	138.537	-295.860	**WARNING**					
12:06 AM	**Efficiency**						25828.66	26003.64	780.11	-174.98	**Pass**
	Background										
	Crosstalk						6.098	11.523	8.865	-5.425	**Pass**
12:18 AM	**Efficiency**	10531.86	10997.02	329.91	-465.16	**FAIL**					
	Background										
	Crosstalk	3633.500	3686.360	138.537	-52.860	**Pass**					
3:39 AM	**Efficiency**										
	Background	0.150	0.086	0.024	0.064	**Pass**	0.385	0.467	0.069	-0.082	**Pass**
	Crosstalk										
Detector 5											

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Gas Proportional Counter Daily Quality Control Checks

Tuesday, November 04, 2014

Instrument: Purple

Detector ID	Check Type	Alpha CPM	Alpha Mean	Alpha +/- limit	Alpha Deviation	Alpha Flag	Beta CPM	Beta Mean	Beta +/- limit	Beta Deviation	Beta Flag
12:02 AM	**Efficiency**	11055.70	11101.58	333.05	-45.88	**Pass**					
	Background										
	Crosstalk	3704.500	3829.520	82.478	-125.020	**Pass**					
12:06 AM	**Efficiency**						21946.16	22243.58	667.31	-297.42	**Pass**
	Background										
	Crosstalk						3.049	6.825	2.358	-3.776	**Pass**
3:36 AM	**Efficiency**										
	Background	0.140	0.097	0.020	0.043	**Pass**	0.340	0.385	0.059	-0.045	**Pass**
	Crosstalk										
Detector 6											
12:02 AM	**Efficiency**	10984.09	11016.52	330.50	-32.43	**Pass**					
	Background										
	Crosstalk	3866.500	3957.100	93.296	-90.600	**Pass**					
12:07 AM	**Efficiency**						29125.51	29418.00	882.54	-292.49	**Pass**
	Background										
	Crosstalk						11.179	7.125	1.716	4.054	**WARNING**
3:36 AM	**Efficiency**										
	Background	0.180	0.098	0.028	0.082	**Pass**	0.515	0.432	0.054	0.083	**Pass**
	Crosstalk										
Detector 7											
12:02 AM	**Efficiency**	11513.92	11525.46	345.76	-11.54	**Pass**					
	Background										
	Crosstalk	3772.500	3971.200	112.565	-198.700	**Pass**					
12:07 AM	**Efficiency**						27513.03	27420.53	822.62	92.51	**Pass**
	Background										
	Crosstalk						8.130	4.900	1.438	3.230	**WARNING**
3:36 AM	**Efficiency**										
	Background	0.145	0.079	0.024	0.066	**Pass**	0.535	0.409	0.065	0.126	**Pass**
	Crosstalk										

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Gas Proportional Counter Daily Quality Control Checks

Tuesday, November 04, 2014

Instrument: ***Purple***

Detector ID	Check Type	Alpha CPM	Alpha Mean	Alpha +/- limit	Alpha Deviation	Alpha Flag	Beta CPM	Beta Mean	Beta +/- limit	Beta Deviation	Beta Flag
Detector 8											
12:02 AM	**Efficiency**						33849.22	33973.08	1019.19	-123.85	**Pass**
	Background										
	Crosstalk						61.487	128.750	85.989	-67.263	**Pass**
12:06 AM	**Efficiency**	10018.43	10244.40	307.33	-225.97	**Pass**					
	Background										
	Crosstalk	3250.000	3298.425	43.898	-48.425	**Pass**					
3:36 AM	**Efficiency**										
	Background	0.200	0.105	0.025	0.095	**FAIL**	0.330	0.437	0.074	-0.107	**Pass**
	Crosstalk										
9:41 AM	**Efficiency**										
	Background	0.145	0.105	0.025	0.040	**Pass**	0.420	0.437	0.074	-0.017	**Pass**
	Crosstalk										
Detector 9											
12:02 AM	**Efficiency**						34128.47	34247.35	1027.42	-118.88	**Pass**
	Background										
	Crosstalk						41.161	75.800	62.995	-34.639	**Pass**
12:06 AM	**Efficiency**	10177.30	10358.40	310.75	-181.10	**Pass**					
	Background										
	Crosstalk	3370.500	3419.720	45.801	-49.220	**Pass**					
3:37 AM	**Efficiency**										
	Background	0.210	0.106	0.028	0.104	**FAIL**	0.500	0.439	0.049	0.062	**Pass**
	Crosstalk										
9:42 AM	**Efficiency**										
	Background	0.235	0.106	0.028	0.129	**FAIL**	0.450	0.439	0.049	0.012	**Pass**
	Crosstalk										
Detector 10											

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Gas Proportional Counter Daily Quality Control Checks

Tuesday, November 04, 2014

Instrument: ***Purple***

Detector ID	Check Type	Alpha CPM	Alpha Mean	Alpha +/- limit	Alpha Deviation	Alpha Flag	Beta CPM	Beta Mean	Beta +/- limit	Beta Deviation	Beta Flag
12:02 AM	**Efficiency**						23253.24	23415.88	702.48	-162.63	**Pass**
	Background										
	Crosstalk						15.245	38.475	31.652	-23.230	**Pass**
12:06 AM	**Efficiency**	10966.55	11112.34	333.37	-145.79	**Pass**					
	Background										
	Crosstalk	3607.000	3684.120	67.191	-77.120	**Pass**					
3:37 AM	**Efficiency**										
	Background	0.170	0.111	0.033	0.059	**Pass**	0.535	0.400	0.056	0.136	**Pass**
	Crosstalk										
Detector 11											
3:37 AM	**Efficiency**										
	Background	0.105	0.104	0.040	0.001	**Pass**	0.470	2.178	3.137	-1.708	**Pass**
	Crosstalk										
Detector 12											
12:03 AM	**Efficiency**						26187.24	26591.88	797.76	-404.64	**Pass**
	Background										
	Crosstalk						23.375	42.225	35.724	-18.850	**Pass**
12:06 AM	**Efficiency**	10799.80	11305.48	339.16	-505.68	**FAIL**					
	Background										
	Crosstalk	3534.000	3768.560	52.401	-234.560	**DOEF**					
12:20 AM	**Efficiency**	10804.81	11305.48	339.16	-500.67	**FAIL**					
	Background										
	Crosstalk	3556.000	3768.560	52.401	-212.560	**DOEF**					
3:41 AM	**Efficiency**										
	Background	0.145	0.105	0.033	0.040	**Pass**	0.505	0.433	0.054	0.072	**Pass**
	Crosstalk										
Detector 13											

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Gas Proportional Counter Daily Quality Control Checks

Tuesday, November 04, 2014

Instrument: Purple

Detector ID	Check Type	Alpha CPM	Alpha Mean	Alpha +/- limit	Alpha Deviation	Alpha Flag	Beta CPM	Beta Mean	Beta +/- limit	Beta Deviation	Beta Flag
12:03 AM	**Efficiency**						22046.64	22324.83	669.74	-278.18	**Pass**
	Background										
	Crosstalk						12.196	16.300	12.882	-4.104	**Pass**
12:06 AM	**Efficiency**	11246.01	11432.34	342.97	-186.33	**Pass**					
	Background										
	Crosstalk	3723.500	3772.980	53.177	-49.480	**Pass**					
3:37 AM	**Efficiency**										
	Background	0.145	0.103	0.031	0.042	**Pass**	0.435	0.367	0.045	0.069	**Pass**
	Crosstalk										
Detector 14											
12:03 AM	**Efficiency**						29119.16	29408.13	882.24	-288.97	**Pass**
	Background										
	Crosstalk						18.802	22.150	21.746	-3.348	**Pass**
12:06 AM	**Efficiency**	10969.55	11216.56	336.50	-247.01	**Pass**					
	Background										
	Crosstalk	3662.000	3754.500	50.178	-92.500	**Pass**					
3:37 AM	**Efficiency**										
	Background	0.175	0.078	0.031	0.097	**FAIL**	0.290	0.307	0.057	-0.017	**Pass**
	Crosstalk										
9:42 AM	**Efficiency**										
	Background	0.205	0.078	0.031	0.127	**FAIL**	0.375	0.307	0.057	0.068	**Pass**
	Crosstalk										
Detector 15											
12:03 AM	**Efficiency**						27451.25	27482.45	824.47	-31.20	**Pass**
	Background										
	Crosstalk						13.212	18.375	19.603	-5.163	**Pass**
12:06 AM	**Efficiency**	11663.16	11755.60	352.67	-92.44	**Pass**					
	Background										
	Crosstalk	3686.500	3806.740	75.541	-120.240	**Pass**					

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Gas Proportional Counter Daily Quality Control Checks

Tuesday, November 04, 2014

Instrument: Purple

Detector ID	Check Type	Alpha CPM	Alpha Mean	Alpha +/- limit	Alpha Deviation	Alpha Flag	Beta CPM	Beta Mean	Beta +/- limit	Beta Deviation	Beta Flag
3:37 AM	**Efficiency**										
	Background	0.185	0.081	0.025	0.104	**FAIL**	0.450	0.367	0.067	0.083	**Pass**
	Crosstalk										
9:42 AM	**Efficiency**										
	Background	0.175	0.081	0.025	0.094	**FAIL**	0.420	0.367	0.067	0.053	**Pass**
	Crosstalk										
Detector 16											
12:09 AM	**Efficiency**	9949.25	10149.35	304.48	-200.10	**Pass**					
	Background										
	Crosstalk	3041.000	3144.825	75.718	-103.825	**Pass**					
12:12 AM	**Efficiency**						33630.68	33567.73	1007.03	62.95	**Pass**
	Background										
	Crosstalk						41.161	56.975	44.714	-15.814	**Pass**
3:37 AM	**Efficiency**										
	Background	0.220	0.215	0.036	0.006	**Pass**	0.615	0.527	0.084	0.088	**Pass**
	Crosstalk										
Detector 18											
12:09 AM	**Efficiency**	10792.26	11006.00	330.18	-213.74	**Pass**					
	Background										
	Crosstalk	3518.500	3648.440	59.235	-129.940	**WARNING**					
12:12 AM	**Efficiency**						23130.61	23091.80	692.75	38.81	**Pass**
	Background										
	Crosstalk						17.277	17.925	3.718	-0.648	**Pass**
3:37 AM	**Efficiency**										
	Background	0.170	0.155	0.028	0.016	**Pass**	0.545	0.519	0.067	0.026	**Pass**
	Crosstalk										
Detector 19											

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Gas Proportional Counter Daily Quality Control Checks

Tuesday, November 04, 2014

Instrument: Purple

Detector ID	Check Type	Alpha CPM	Alpha Mean	Alpha +/- limit	Alpha Deviation	Alpha Flag	Beta CPM	Beta Mean	Beta +/- limit	Beta Deviation	Beta Flag
12:09 AM	**Efficiency**	10775.23	11022.08	330.66	-246.85	**Pass**					
	Background										
	Crosstalk	3508.500	3587.240	43.512	-78.740	**Pass**					
12:12 AM	**Efficiency**						30835.74	30702.48	921.07	133.26	**Pass**
	Background										
	Crosstalk						50.815	59.600	14.515	-8.785	**Pass**
3:37 AM	**Efficiency**										
	Background	0.200	0.161	0.044	0.039	**Pass**	0.545	0.518	0.069	0.027	**Pass**
	Crosstalk										
Detector 20											
3:37 AM	**Efficiency**										
	Background	0.085	0.089	0.030	-0.004	**Pass**	0.400	0.418	0.085	-0.017	**Pass**
	Crosstalk										
Detector 21											
12:09 AM	**Efficiency**	11119.95	11359.60	340.79	-239.65	**Pass**					
	Background										
	Crosstalk	3771.000	3893.240	62.630	-122.240	**Pass**					
12:12 AM	**Efficiency**						22049.30	22324.13	669.72	-274.83	**Pass**
	Background										
	Crosstalk						16.261	20.175	6.313	-3.914	**Pass**
3:37 AM	**Efficiency**										
	Background	0.185	0.111	0.057	0.074	**Pass**	0.340	0.351	0.087	-0.011	**Pass**
	Crosstalk										
Detector 22											
3:37 AM	**Efficiency**										
	Background	0.130	0.120	0.035	0.010	**Pass**	0.505	0.402	0.064	0.103	**Pass**
	Crosstalk										
Detector 23											

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Gas Proportional Counter Daily Quality Control Checks

Tuesday, November 04, 2014

Instrument: ***Purple***

Detector ID	Check Type	Alpha CPM	Alpha Mean	Alpha +/- limit	Alpha Deviation	Alpha Flag	Beta CPM	Beta Mean	Beta +/- limit	Beta Deviation	Beta Flag
3:37 AM	**Efficiency**										
	Background	0.215	0.159	0.042	0.056	**Pass**	0.300	0.383	0.075	-0.083	**Pass**
	Crosstalk										

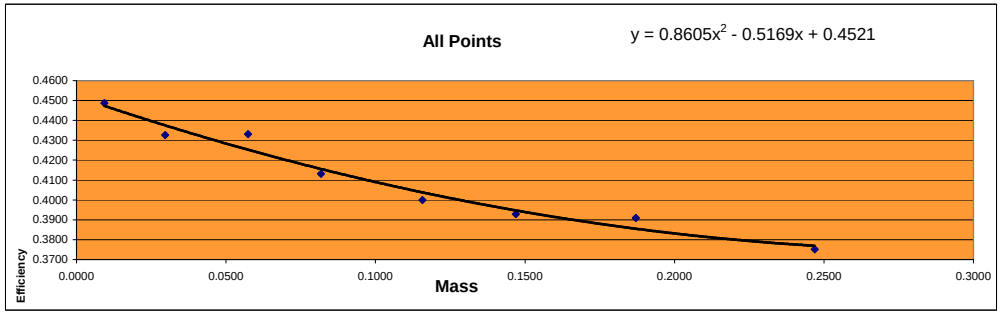
Alpha Beta Calibrations

Curve is for Gross Beta
Strontium 90
and
Total Strontium

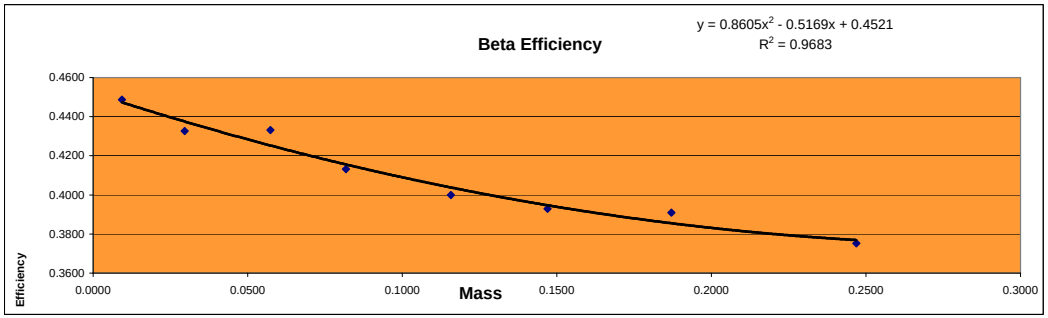
Orange 23

Detector ID	Std ID	Count Date	Sample Wt	Count Time	Beta Counts	DPM 41588.469 CPM	Sr-90 Eff	Standard Aliquot
23	B1	1/23/2013 13:14	0.0093	5	93320	18664.000	0.4488	1mL
23	B2	1/23/2013 13:07	0.0296	5	89959	17991.800	0.4326	1mL
23	B3	1/23/2013 13:00	0.0574	5	90060	18012.000	0.4331	1mL
23	B4	1/23/2013 12:53	0.0818	5	85913	17182.600	0.4132	1mL
23	B5	1/23/2013 12:46	0.1157	5	83172	16634.400	0.4000	1mL
23	B6	1/23/2013 12:38	0.1470	5	81701	16340.200	0.3929	1mL
23	B7	1/23/2013 12:30	0.1871	5	81277	16255.400	0.3909	1mL
23	B8	1/23/2013 12:20	0.2469	5	78026	15605.200	0.3752	1mL

Mass	Measured Efficiency	Theoretical Efficiency	Percent Δ Efficiency
0.0093	0.4488	0.4474	0.32%
0.0296	0.4326	0.4376	-1.13%
0.0574	0.4331	0.4253	1.84%
0.0818	0.4132	0.4156	-0.58%
0.1157	0.4000	0.4038	-0.95%
0.1470	0.3929	0.3947	-0.46%
0.1871	0.3909	0.3855	1.39%
0.2469	0.3752	0.3769	-0.45%



Mass	Efficiency
0.0093	0.4488
0.0296	0.4326
0.0574	0.4331
0.0818	0.4132
0.1157	0.4000
0.1470	0.3929
0.1871	0.3909
0.2469	0.3752



Standard ID
Strontium 90
Sr-90_00004 #6322
Cert# 80573-334 Ref. date 9/172009

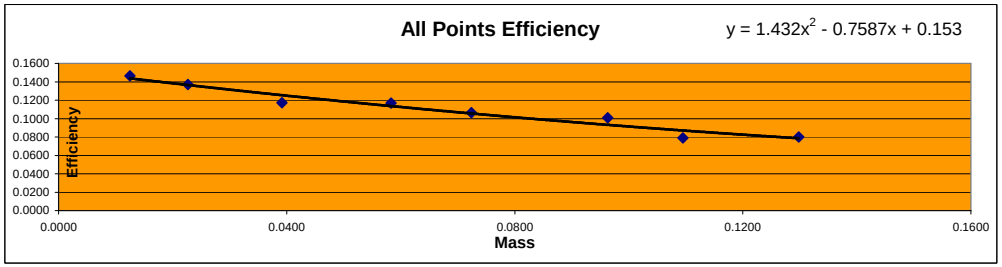
Initial Activity:	22560 dpm/mL
Reference Date:	9/17/2009
Count Date:	1/23/2013
Elapsed Time:	1224.000 days
Half Life:	10409.625 days
Exponential Term:	0.921730256
Corrected Activity:	20794.23458 dpm/mL
Decay Activity (Sr/Y-90)	41588.46916 dpm

Curve is for Gross Alpha

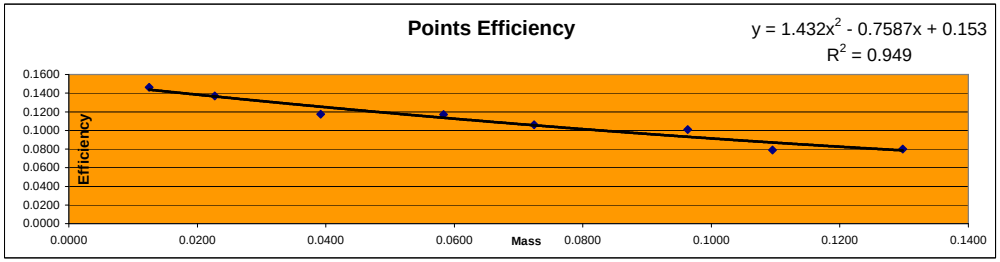
Orange 23

Detector ID	Sample ID	Count Date	Mass	Count Time	Alpha Counts	Net CPM	DPM	Th-230 Efficiency	Standard Aliquot
23	A1	7/25/2013 9:50	0.0125	50	17367	347.340	2374.5	0.1463	1mL
23	A2	7/25/2013 8:56	0.0227	50	16269	325.380	2374.5	0.1370	1mL
23	A3	7/25/2013 7:05	0.0392	50	13931	278.620	2374.5	0.1173	1mL
23	A4	7/24/2013 23:30	0.0583	50	13886	277.720	2374.5	0.1170	1mL
23	A5	7/24/2013 22:35	0.0724	50	25232	504.640	4749.0	0.1063	2mL
23	A6	7/24/2013 21:32	0.0963	50	23939	478.780	4749.0	0.1008	2mL
23	A7	7/24/2013 20:20	0.1095	50	18752	375.040	4749.0	0.0790	2mL
23	A8	7/24/2013 19:27	0.1298	50	18987	379.740	4749.0	0.0800	2mL

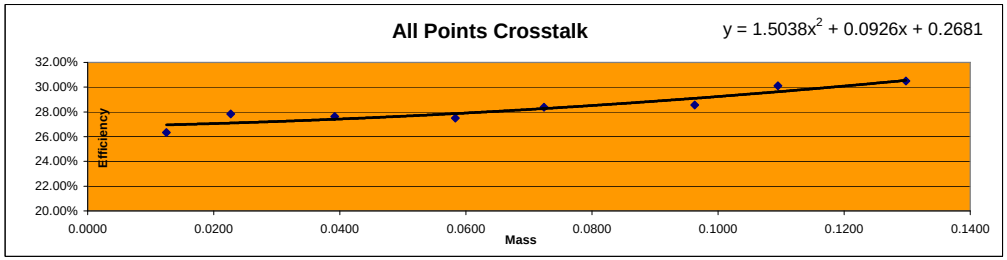
Mass	Measured Efficiency	Theoretical Efficiency	Percent Δ Efficiency
0.0125	0.1463	0.1437	1.77%
0.0227	0.1370	0.1365	0.38%
0.0392	0.1173	0.1255	-6.47%
0.0583	0.1170	0.1136	2.93%
0.0724	0.1063	0.1056	0.65%
0.0963	0.1008	0.0932	8.15%
0.1095	0.0790	0.0871	-9.32%
0.1298	0.0800	0.0786	1.67%



Mass	Efficiency
0.0125	0.1463
0.0227	0.1370
0.0392	0.1173
0.0583	0.1170
0.0724	0.1063
0.0963	0.1008
0.1095	0.0790
0.1298	0.0800



Detector ID	Sample ID	Mass	Count Time	Alpha Counts	Beta Counts	Alpha CPM	Beta CPM	% α into β	
23	A1	0.0125	40.00	17367	6209	434.18	155.23	26.34%	Min
23	A2	0.0227	40.00	16269	6279	406.73	156.98	27.85%	26.34%
23	A3	0.0392	40.00	13931	5320	348.28	133.00	27.63%	
23	A4	0.0583	40.00	13886	5267	347.15	131.68	27.50%	Max
23	A5	0.0724	40.00	25232	9999	630.80	249.98	28.38%	30.50%
23	A6	0.0963	40.00	23939	9574	598.48	239.35	28.57%	
23	A7	0.1095	40.00	18752	8082	468.80	202.05	30.12%	Mean
23	A8	0.1298	40.00	18987	8332	474.68	208.30	30.50%	28.36%



Standard ID
Thorium-230
Th-230_00016 #51465
Cert # 92523 Ref. date 11/29/2012
Activity 2374.5 dpm/mL

Alpha/Beta Count Results

Sample Activity Report

Orange 20-23 - D

Addr: 23

Sample ID ICABT-6322;B8

Repeat 29

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 1/23/2013 12:20:54 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 1/23/2013 12:26:03 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.046	34	6.800	6.754
sd	0.000			0.007	5.831	1.166	1.166
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.330	78,026	15,605.200	15,604.870
sd	0.000			0.018	279.331	55.866	55.866

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 20-23 - D

Addr: 23

Sample ID ICABT-6322;B7 **Repeat** 30

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/23/2013 12:30:20 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 1/23/2013 12:35:29 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.046	28	5.600	5.554
sd	0.000			0.007	5.292	1.058	1.058
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.330	81,277	16,255.400	16,255.070
sd	0.000			0.018	285.091	57.018	57.018

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 20-23 - D

Addr: 23

Sample ID ICABT-6322;B6 **Repeat** 31

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 1/23/2013 12:38:03 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 1/23/2013 12:43:11 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.046	34	6.800	6.754
sd	0.000			0.007	5.831	1.166	1.166
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.330	81,701	16,340.200	16,339.870
sd	0.000			0.018	285.834	57.167	57.167

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 20-23 - D

Addr: 23

Sample ID ICABT-6322;B5 **Repeat** 32

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/23/2013 12:46:01 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 1/23/2013 12:51:10 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.046	29	5.800	5.754
sd	0.000			0.007	5.385	1.077	1.077
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.330	83,172	16,634.400	16,634.070
sd	0.000			0.018	288.396	57.679	57.679

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 20-23 - D

Addr: 23

Sample ID ICABT-6322;B4 **Repeat** 34

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/23/2013 12:53:30 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 1/23/2013 12:58:39 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.046	33	6.600	6.554
sd	0.000			0.007	5.745	1.149	1.149
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.330	85,913	17,182.600	17,182.270
sd	0.000			0.018	293.109	58.622	58.622

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 20-23 - D

Addr: 23

Sample ID ICABT-6322;B3

Repeat 35

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 1/23/2013 1:00:20 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 1/23/2013 1:05:30 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.046	40	8.000	7.954
sd	0.000			0.007	6.325	1.265	1.265
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.330	90,060	18,012.000	18,011.670
sd	0.000			0.018	300.100	60.020	60.020

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 20-23 - D

Addr: 23

Sample ID ICABT-6322;B2

Repeat 36

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 1/23/2013 1:07:31 PM

Count Ended 1/23/2013 1:12:42 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 *days*

Decay Factor 1.000

Sample Count Time 5.00 *mins*

Background Count Time 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.046	28	5.600	5.554
sd	0.000			0.007	5.292	1.058	1.058
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.330	89,959	17,991.800	17,991.470
sd	0.000			0.018	299.932	59.986	59.986

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 20-23 - D

Addr: 23

Sample ID ICABT-6322;B1 **Repeat** 37

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 1/23/2013 1:14:46 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 1/23/2013 1:19:55 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.046	34	6.800	6.754
sd	0.000			0.007	5.831	1.166	1.166
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.330	93,320	18,664.000	18,663.670
sd	0.000			0.018	305.483	61.097	61.097

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 20-23 - D

Addr: 23

Sample ID ICABT-51465;A8 **Repeat** 25

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/24/2013 7:27:22 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 7/24/2013 8:17:29 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 50.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.053	18,987	379.740	379.687
sd	0.000			0.007	137.793	2.756	2.756
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.398	8,332	166.640	166.242
sd	0.000			0.020	91.280	1.826	1.826

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 20-23 - D

Addr: 23

Sample ID ICABT-51465;A7 **Repeat** 26

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/24/2013 8:20:17 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 7/24/2013 9:10:23 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 50.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.053	18,752	375.040	374.987
sd	0.000			0.007	136.938	2.739	2.739
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.398	8,082	161.640	161.242
sd	0.000			0.020	89.900	1.798	1.798

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 20-23 - D

Addr: 23

Sample ID ICABT-51465;A6 **Repeat** 27

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/24/2013 9:32:11 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 7/24/2013 10:22:18 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 50.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.053	23,939	478.780	478.727
sd	0.000			0.007	154.722	3.094	3.094
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.398	9,574	191.480	191.082
sd	0.000			0.020	97.847	1.957	1.957

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 20-23 - D

Addr: 23

Sample ID ICABT-51465;A5 **Repeat** 28

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/24/2013 10:35:39 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 7/24/2013 11:25:46 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 50.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.053	25,232	504.640	504.587
sd	0.000			0.007	158.846	3.177	3.177
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.398	9,999	199.980	199.582
sd	0.000			0.020	99.995	2.000	2.000

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 20-23 - D

Addr: 23

Sample ID ICABT-51465;A4 **Repeat** 34

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/24/2013 11:30:06 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 7/25/2013 12:20:12 AM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 50.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.053	13,886	277.720	277.667
sd	0.000			0.007	117.839	2.357	2.357
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.398	5,267	105.340	104.942
sd	0.000			0.020	72.574	1.451	1.452

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 20-23 - D

Addr: 23

Sample ID ICABT-51465;A3 **Repeat** 33

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 7/25/2013 7:05:48 AM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 7/25/2013 7:55:53 AM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 50.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.053	13,931	278.620	278.567
sd	0.000			0.007	118.030	2.361	2.361
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.398	5,320	106.400	106.002
sd	0.000			0.020	72.938	1.459	1.459

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 20-23 - D

Addr: 23

Sample ID ICABT-51465;A2

Repeat 31

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/25/2013 8:56:33 AM

Count Ended 7/25/2013 9:46:39 AM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 50.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.053	16,269	325.380	325.327
sd	0.000			0.007	127.550	2.551	2.551
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.398	6,279	125.580	125.182
sd	0.000			0.020	79.240	1.585	1.585

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 20-23 - D

Addr: 23

Sample ID ICABT-51465;A1 **Repeat** 32

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 7/25/2013 9:50:19 AM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 7/25/2013 10:40:26 AM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 50.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.053	17,367	347.340	347.287
sd	0.000			0.007	131.784	2.636	2.636
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.398	6,209	124.180	123.782
sd	0.000			0.020	78.797	1.576	1.576

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

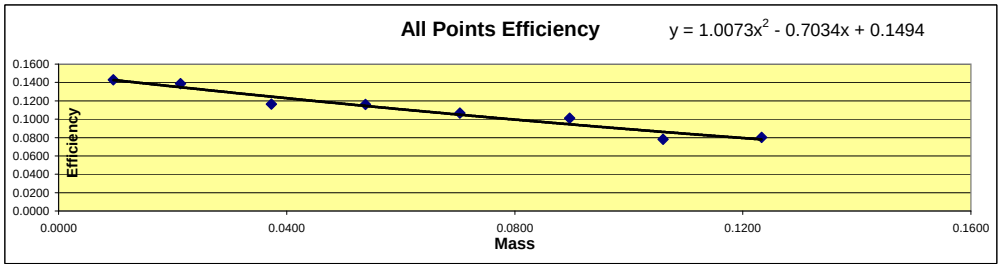
*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Curve is for Gross Alpha

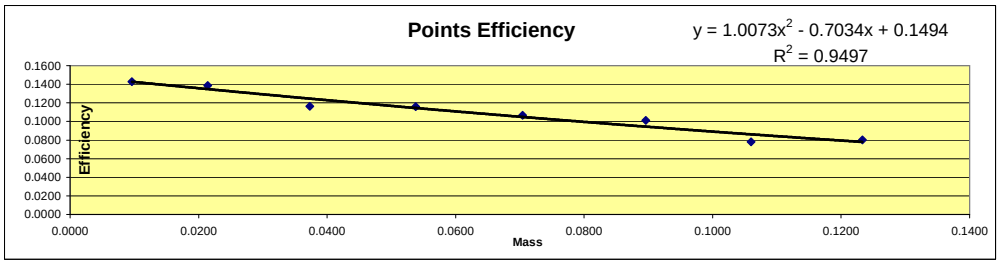
Protean 15

Detector ID	Sample ID	Count Date	Mass	Count Time	Alpha Counts	Net CPM	DPM	Th-230 Efficiency	Standard Aliquot
15	A1	8/9/2013 15:42	0.0096	50	16971	339.420	2374.5	0.1429	1mL
15	A2	8/9/2013 17:27	0.0214	50	16459	329.180	2374.5	0.1386	1mL
15	A3	8/9/2013 18:33	0.0373	50	13826	276.520	2374.5	0.1165	1mL
15	A4	8/12/2013 18:44	0.0538	50	13778	275.560	2374.5	0.1160	1mL
15	A5	8/12/2013 11:36	0.0704	50	25324	506.480	4749.0	0.1066	2mL
15	A6	8/12/2013 0:00	0.0896	50	23987	479.740	4749.0	0.1010	2mL
15	A7	8/11/2013 23:08	0.1060	50	18532	370.640	4749.0	0.0780	2mL
15	A8	8/11/2013 21:12	0.1233	50	19058	381.160	4749.0	0.0803	2mL

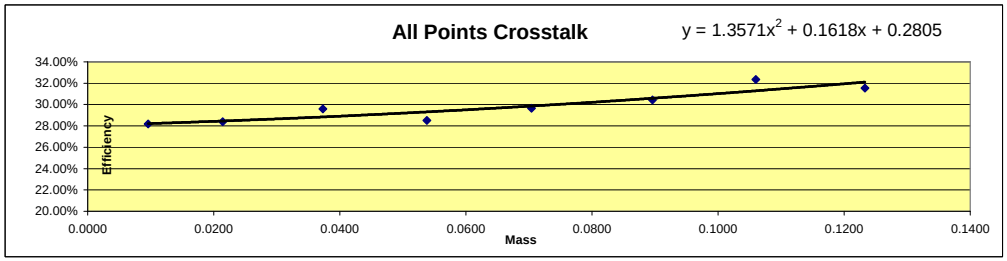
Mass	Measured Efficiency	Theoretical Efficiency	Percent Δ Efficiency
0.0096	0.1429	0.1427	0.14%
0.0214	0.1386	0.1348	2.84%
0.0373	0.1165	0.1246	-6.51%
0.0538	0.1160	0.1145	1.38%
0.0704	0.1066	0.1049	1.69%
0.0896	0.1010	0.0945	6.94%
0.1060	0.0780	0.0862	-9.41%
0.1233	0.0803	0.0780	2.92%



Mass	Efficiency
0.0096	0.1429
0.0214	0.1386
0.0373	0.1165
0.0538	0.1160
0.0704	0.1066
0.0896	0.1010
0.1060	0.0780
0.1233	0.0803



Detector ID	Sample ID	Mass	Count Time	Alpha Counts	Beta Counts	Alpha CPM	Beta CPM	% α into β	
15	A1	0.0096	40.00	16971	6658	424.28	166.45	28.18%	Min
15	A2	0.0214	40.00	16459	6522	411.48	163.05	28.38%	28.18%
15	A3	0.0373	40.00	13826	5812	345.65	145.30	29.60%	
15	A4	0.0538	40.00	13778	5499	344.45	137.48	28.53%	Max
15	A5	0.0704	40.00	25324	10673	633.10	266.83	29.65%	32.36%
15	A6	0.0896	40.00	23987	10499	599.68	262.48	30.44%	
15	A7	0.1060	40.00	18532	8867	463.30	221.68	32.36%	Mean
15	A8	0.1233	40.00	19058	8782	476.45	219.55	31.54%	29.84%



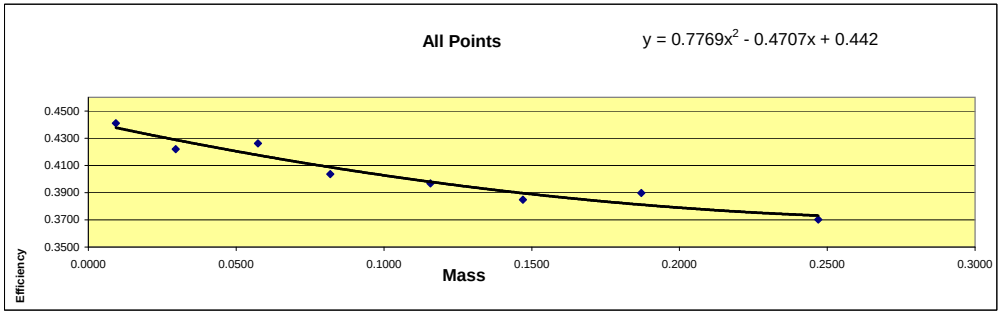
Standard ID
Thorium-230
Th-230_00016 #51465
Cert # 92523 Ref. date 11/29/2012
Activity 2374.5 dpm/mL

Curve is for Gross Beta
Strontium 90
and
Total Strontium

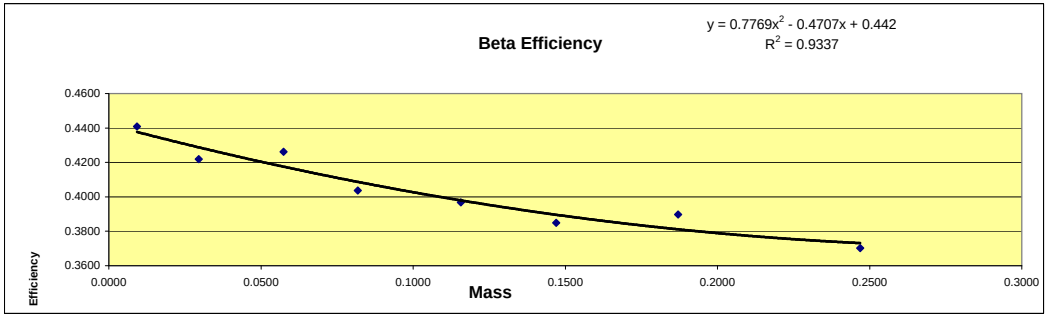
Protean 15

Detector ID	Std ID	Count Date	Sample Wt	Count Time	Beta Counts	DPM 41414.371 CPM	Sr-90 Eff	Standard Aliquot
15	B1	3/27/2013 10:28:44 AM	0.0093	1.01	18443	18260.396	0.4409	1mL
15	B2	3/27/2013 10:22:04 AM	0.0296	1.01	17651	17476.238	0.4220	1mL
15	B3	3/27/2013 10:14:38 AM	0.0574	1.01	17823	17646.535	0.4261	1mL
15	B4	3/27/2013 10:06:16 AM	0.0818	1.01	16883	16715.842	0.4036	1mL
15	B5	3/27/2013 9:57:09 AM	0.1157	1.01	16601	16436.634	0.3969	1mL
15	B6	3/27/2013 9:49:29 AM	0.1470	1.01	16099	15939.604	0.3849	1mL
15	B7	3/27/2013 9:36:15 AM	0.1871	1.01	16302	16140.594	0.3897	1mL
15	B8	3/27/2013 9:28:01 AM	0.2469	1.01	15488	15334.653	0.3703	1mL

Mass	Measured Efficiency	Theoretical Efficiency	Percent Δ Efficiency
0.0093	0.4409	0.4377	0.74%
0.0296	0.4220	0.4287	-1.58%
0.0574	0.4261	0.4175	2.05%
0.0818	0.4036	0.4087	-1.24%
0.1157	0.3969	0.3979	-0.27%
0.1470	0.3849	0.3896	-1.21%
0.1871	0.3897	0.3811	2.26%
0.2469	0.3703	0.3731	-0.77%



Mass	Efficiency
0.0093	0.4409
0.0296	0.4220
0.0574	0.4261
0.0818	0.4036
0.1157	0.3969
0.1470	0.3849
0.1871	0.3897
0.2469	0.3703



Standard ID
Strontium 90
Sr-90_00004 #6322
Cert# 80573-334 Ref. date 9/172009

Initial Activity:	22560 dpm/mL
Reference Date:	9/17/2009
Count Date:	3/27/2013
Elapsed Time:	1287.000 days
Half Life:	10409.625 days
Exponential Term:	0.917871706
Corrected Activity:	20707.18568 dpm/mL
Decay Activity (Sr/Y-90)	41414.37137 dpm

Low Level Alpha/Beta Count Results
Sample Activity Report

Protean 12-15 - D **Address:** ***15***

Sample ID ***ICABT-6322;B8*** **Repeat** ***10***

Batch ID ***122627***

Count Routine ***Gross Alpha Beta*** **Detector Volts** ***1,515.0***

Sample Qty 0.000 **sd** 0.000

Residual Wt 0.000 ***mg*** **sd** 0.000 ***mg***

Count Date 3/27/2013 09:26 **Collection Date 1** **Half Life** 0.00 ***days***
Collection Date 2 **Decay Factor** 1.000

Sample Count Time 1.01 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.047	2	1.980	1.933
sd	0.000			0.007	1.414	1.400	1.400
Alpha to Beta	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.480	15,488	15,334.653	15,334.173
sd	0.000			0.022	124.451	123.219	123.219

	Net Activity dpm	LLD dpm	Net Concentration *	MDC	Limits	% of Limits
Alpha	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			
Beta	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			

*** Note: Decay Corrected MDC Method -** **Tb = Ts < 10**
Error = 0.00 **x sd**

Low Level Alpha/Beta Count Results
Sample Activity Report

Protean 12-15 - D **Address:** ***15***

Sample ID ***ICABT-6322;B7*** **Repeat** ***11***

Batch ID ***122627***

Count Routine ***Gross Alpha Beta*** **Detector Volts** ***1,515.0***

Sample Qty 0.000 **sd** 0.000

Residual Wt 0.000 ***mg*** **sd** 0.000 ***mg***

Count Date 3/27/2013 09:35 **Collection Date 1** **Half Life** 0.00 ***days***
Collection Date 2 **Decay Factor** 1.000

Sample Count Time 1.01 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.047	0	0.000	-0.047
sd	0.000			0.007	0.000	0.000	0.305
Alpha to Beta	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.480	16,302	16,140.594	16,140.114
sd	0.000			0.022	127.679	126.415	126.415

	Net Activity dpm	LLD dpm	Net Concentration *	MDC	Limits	% of Limits
Alpha	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			
Beta	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			

*** Note: Decay Corrected MDC Method -** **Tb = Ts < 10**
Error = 0.00 **x sd**

Low Level Alpha/Beta Count Results
Sample Activity Report

Protean 12-15 - D **Address:** ***15***

Sample ID ***ICABT-6322;B6*** **Repeat** ***12***

Batch ID ***122627***

Count Routine ***Gross Alpha Beta*** **Detector Volts** ***1,515.0***

Sample Qty 0.000 **sd** 0.000

Residual Wt 0.000 ***mg*** **sd** 0.000 ***mg***

Count Date 3/27/2013 09:48 **Collection Date 1** **Half Life** 0.00 ***days***
Collection Date 2 **Decay Factor** 1.000

Sample Count Time 1.01 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.047	1	0.990	0.943
sd	0.000			0.007	1.000	0.990	0.990
Alpha to Beta	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.480	16,099	15,939.604	15,939.124
sd	0.000			0.022	126.882	125.626	125.626

	Net Activity dpm	LLD dpm	Net Concentration *	MDC	Limits	% of Limits
Alpha	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			
Beta	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			

*** Note: Decay Corrected MDC Method -** **Tb = Ts < 10**
Error = 0.00 **x sd**

Low Level Alpha/Beta Count Results
Sample Activity Report

Protean 12-15 - D **Address:** ***15***

Sample ID ***ICABT-6322;B5*** **Repeat** ***13***

Batch ID ***122627***

Count Routine ***Gross Alpha Beta*** **Detector Volts** ***1,515.0***

Sample Qty 0.000 **sd** 0.000

Residual Wt 0.000 ***mg*** **sd** 0.000 ***mg***

Count Date 3/27/2013 09:55 **Collection Date 1** **Half Life** 0.00 ***days***
Collection Date 2 **Decay Factor** 1.000

Sample Count Time 1.01 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.047	1	0.990	0.943
sd	0.000			0.007	1.000	0.990	0.990
Alpha to Beta	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.480	16,601	16,436.634	16,436.154
sd	0.000			0.022	128.845	127.569	127.569

	Net Activity dpm	LLD dpm	Net Concentration *	MDC	Limits	% of Limits
Alpha	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			
Beta	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			

*** Note: Decay Corrected MDC Method -** **Tb = Ts < 10**
Error = 0.00 **x sd**

Low Level Alpha/Beta Count Results
Sample Activity Report

Protean 12-15 - D **Address:** ***15***

Sample ID ***ICABT-6322;B4*** **Repeat** ***14***

Batch ID ***122627***

Count Routine ***Gross Alpha Beta*** **Detector Volts** ***1,515.0***

Sample Qty 0.000 **sd** 0.000

Residual Wt 0.000 ***mg*** **sd** 0.000 ***mg***

Count Date 3/27/2013 10:05 **Collection Date 1** **Half Life** 0.00 ***days***
Collection Date 2 **Decay Factor** 1.000

Sample Count Time 1.01 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.047	0	0.000	-0.047
sd	0.000			0.007	0.000	0.000	0.305
Alpha to Beta	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.480	16,883	16,715.842	16,715.362
sd	0.000			0.022	129.935	128.648	128.648

	Net Activity dpm	LLD dpm	Net Concentration *	MDC	Limits	% of Limits
Alpha	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			
Beta	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			

*** Note: Decay Corrected MDC Method -** **Tb = Ts < 10**
Error = 0.00 **x sd**

Low Level Alpha/Beta Count Results
Sample Activity Report

Protean 12-15 - D **Address:** ***15***

Sample ID ***ICABT-6322;B3*** **Repeat** ***15***

Batch ID ***122627***

Count Routine ***Gross Alpha Beta*** **Detector Volts** ***1,515.0***

Sample Qty 0.000 **sd** 0.000

Residual Wt 0.000 ***mg*** **sd** 0.000 ***mg***

Count Date 3/27/2013 10:13 **Collection Date 1** **Half Life** 0.00 ***days***
Collection Date 2 **Decay Factor** 1.000

Sample Count Time 1.01 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.047	1	0.990	0.943
sd	0.000			0.007	1.000	0.990	0.990
Alpha to Beta	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.480	17,823	17,646.535	17,646.055
sd	0.000			0.022	133.503	132.181	132.181

	Net Activity dpm	LLD dpm	Net Concentration *	MDC	Limits	% of Limits
Alpha	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			
Beta	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			

*** Note: Decay Corrected MDC Method -** **Tb = Ts < 10**
Error = 0.00 **x sd**

Low Level Alpha/Beta Count Results
Sample Activity Report

Protean 12-15 - D **Address:** ***15***

Sample ID ***ICABT-6322;B2*** **Repeat** ***16***

Batch ID ***122627***

Count Routine ***Gross Alpha Beta*** **Detector Volts** ***1,515.0***

Sample Qty 0.000 **sd** 0.000

Residual Wt 0.000 ***mg*** **sd** 0.000 ***mg***

Count Date 3/27/2013 10:20 **Collection Date 1** **Half Life** 0.00 ***days***
Collection Date 2 **Decay Factor** 1.000

Sample Count Time 1.01 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.047	2	1.980	1.933
sd	0.000			0.007	1.414	1.400	1.400
Alpha to Beta	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.480	17,651	17,476.238	17,475.758
sd	0.000			0.022	132.857	131.542	131.542

	Net Activity dpm	LLD dpm	Net Concentration *	MDC	Limits	% of Limits
Alpha	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			
Beta	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			

*** Note: Decay Corrected MDC Method -** **Tb = Ts < 10**
Error = 0.00 **x sd**

Low Level Alpha/Beta Count Results
Sample Activity Report

Protean 12-15 - D **Address:** ***15***

Sample ID ***ICABT-6322;B1*** **Repeat** ***17***

Batch ID ***122627***

Count Routine ***Gross Alpha Beta*** **Detector Volts** ***1,515.0***

Sample Qty 0.000 **sd** 0.000

Residual Wt 0.000 ***mg*** **sd** 0.000 ***mg***

Count Date 3/27/2013 10:27 **Collection Date 1** **Half Life** 0.00 ***days***
Collection Date 2 **Decay Factor** 1.000

Sample Count Time 1.01 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.047	0	0.000	-0.047
sd	0.000			0.007	0.000	0.000	0.305
Alpha to Beta	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.480	18,443	18,260.396	18,259.916
sd	0.000			0.022	135.805	134.460	134.460

	Net Activity dpm	LLD dpm	Net Concentration *	MDC	Limits	% of Limits
Alpha	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			
Beta	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			

*** Note: Decay Corrected MDC Method -** **Tb = Ts < 10**
Error = 0.00 **x sd**

Low Level Alpha/Beta Count Results
Sample Activity Report

Protean 12-15 - D **Address:** ***15***

Sample ID ***ICABT-51465l;A1*** **Repeat** ***2***

Batch ID ***M132731***

Count Routine ***Gross Alpha Beta*** **Detector Volts** ***1,515.0***

Sample Qty 0.000 **sd** 0.000

Residual Wt 0.000 ***mg*** **sd** 0.000 ***mg***

Count Date 8/9/2013 14:52 **Collection Date 1** **Half Life** 0.00 ***days***
Collection Date 2 **Decay Factor** 1.000

Sample Count Time 50.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.043	16,971	339.420	339.377
sd	0.000			0.007	130.273	2.605	2.605
Alpha to Beta	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.521	6,658	133.160	132.639
sd	0.000			0.023	81.597	1.632	1.632

	Net Activity dpm	LLD dpm	Net Concentration *	MDC	Limits	% of Limits
Alpha	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			
Beta	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			

*** Note: Decay Corrected MDC Method -** **Tb = Ts < 10**
Error = 0.00 **x sd**

Low Level Alpha/Beta Count Results
Sample Activity Report

Protean 12-15 - D **Address:** ***15***

Sample ID ***ICABT-51465l;A2*** **Repeat** ***3***

Batch ID ***M132731***

Count Routine ***Gross Alpha Beta*** **Detector Volts** ***1,515.0***

Sample Qty 0.000 **sd** 0.000

Residual Wt 0.000 ***mg*** **sd** 0.000 ***mg***

Count Date 8/9/2013 16:37 **Collection Date 1** **Half Life** 0.00 ***days***
Collection Date 2 **Decay Factor** 1.000

Sample Count Time 50.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.043	16,459	329.180	329.137
sd	0.000			0.007	128.293	2.566	2.566
Alpha to Beta	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.521	6,522	130.440	129.919
sd	0.000			0.023	80.759	1.615	1.615

	Net Activity dpm	LLD dpm	Net Concentration *	MDC	Limits	% of Limits
Alpha	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			
Beta	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			

*** Note: Decay Corrected MDC Method -** **Tb = Ts < 10**
Error = 0.00 **x sd**

Low Level Alpha/Beta Count Results
Sample Activity Report

Protean 12-15 - D **Address:** ***15***

Sample ID ***ICABT-51465l;A3*** **Repeat** ***4***

Batch ID ***M132731***

Count Routine ***Gross Alpha Beta*** **Detector Volts** ***1,515.0***

Sample Qty 0.000 **sd** 0.000

Residual Wt 0.000 ***mg*** **sd** 0.000 ***mg***

Count Date 8/9/2013 17:43 **Collection Date 1** **Half Life** 0.00 ***days***
Collection Date 2 **Decay Factor** 1.000

Sample Count Time 50.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.043	13,826	276.520	276.477
sd	0.000			0.007	117.584	2.352	2.352
Alpha to Beta	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.521	5,812	116.240	115.719
sd	0.000			0.023	76.236	1.525	1.525

	Net Activity dpm	LLD dpm	Net Concentration *	MDC	Limits	% of Limits
Alpha	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			
Beta	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			

*** Note: Decay Corrected MDC Method -** **Tb = Ts < 10**
Error = 0.00 **x sd**

Low Level Alpha/Beta Count Results
Sample Activity Report

Protean 12-15 - D **Address:** ***15***

Sample ID ***ICABT-51465l;A8*** **Repeat** ***5***

Batch ID ***M132731***

Count Routine ***Gross Alpha Beta*** **Detector Volts** ***1,515.0***

Sample Qty 0.000 **sd** 0.000

Residual Wt 0.000 ***mg*** **sd** 0.000 ***mg***

Count Date 8/11/2013 20:22 **Collection Date 1** **Half Life** 0.00 ***days***
Collection Date 2 **Decay Factor** 1.000

Sample Count Time 50.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.043	19,058	381.160	381.117
sd	0.000			0.007	138.051	2.761	2.761
Alpha to Beta	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.521	8,782	175.640	175.119
sd	0.000			0.023	93.712	1.874	1.874

	Net Activity dpm	LLD dpm	Net Concentration *	MDC	Limits	% of Limits
Alpha	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			
Beta	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			

*** Note: Decay Corrected MDC Method -** **Tb = Ts < 10**
Error = 0.00 **x sd**

Low Level Alpha/Beta Count Results
Sample Activity Report

Protean 12-15 - D **Address:** ***15***

Sample ID ***ICABT-51465l;A7*** **Repeat** ***6***

Batch ID ***M132731***

Count Routine ***Gross Alpha Beta*** **Detector Volts** ***1,515.0***

Sample Qty 0.000 **sd** 0.000

Residual Wt 0.000 ***mg*** **sd** 0.000 ***mg***

Count Date 8/11/2013 22:18 **Collection Date 1** **Half Life** 0.00 ***days***
Collection Date 2 **Decay Factor** 1.000

Sample Count Time 50.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.043	18,532	370.640	370.597
sd	0.000			0.007	136.132	2.723	2.723
Alpha to Beta	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.521	8,867	177.340	176.819
sd	0.000			0.023	94.165	1.883	1.883

	Net Activity dpm	LLD dpm	Net Concentration *	MDC	Limits	% of Limits
Alpha	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			
Beta	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			

*** Note: Decay Corrected MDC Method -** **Tb = Ts < 10**
Error = 0.00 **x sd**

Low Level Alpha/Beta Count Results
Sample Activity Report

Protean 12-15 - D **Address:** ***15***

Sample ID ***ICABT-51465l;A6*** **Repeat** ***7***

Batch ID ***M132731***

Count Routine ***Gross Alpha Beta*** **Detector Volts** ***1,515.0***

Sample Qty 0.000 **sd** 0.000

Residual Wt 0.000 ***mg*** **sd** 0.000 ***mg***

Count Date 8/11/2013 23:10 **Collection Date 1** **Half Life** 0.00 ***days***
Collection Date 2 **Decay Factor** 1.000

Sample Count Time 50.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.043	23,987	479.740	479.697
sd	0.000			0.007	154.877	3.098	3.098
Alpha to Beta	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.521	10,499	209.980	209.459
sd	0.000			0.023	102.465	2.049	2.049

	Net Activity dpm	LLD dpm	Net Concentration *	MDC	Limits	% of Limits
Alpha	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			
Beta	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			

*** Note: Decay Corrected MDC Method -** **Tb = Ts < 10**
Error = 0.00 **x sd**

Low Level Alpha/Beta Count Results
Sample Activity Report

Protean 12-15 - D **Address:** ***15***

Sample ID ***ICABT-51465l;A5*** **Repeat** ***8***

Batch ID ***M132731***

Count Routine ***Gross Alpha Beta*** **Detector Volts** ***1,515.0***

Sample Qty 0.000 **sd** 0.000

Residual Wt 0.000 ***mg*** **sd** 0.000 ***mg***

Count Date 8/12/2013 10:46 **Collection Date 1** **Half Life** 0.00 ***days***
Collection Date 2 **Decay Factor** 1.000

Sample Count Time 50.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.043	25,324	506.480	506.437
sd	0.000			0.007	159.135	3.183	3.183
Alpha to Beta	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.521	10,673	213.460	212.939
sd	0.000			0.023	103.310	2.066	2.066

	Net Activity dpm	LLD dpm	Net Concentration *	MDC	Limits	% of Limits
Alpha	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			
Beta	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			

*** Note: Decay Corrected MDC Method -** **Tb = Ts < 10**
Error = 0.00 **x sd**

Low Level Alpha/Beta Count Results
Sample Activity Report

Protean 12-15 - D **Address:** ***15***

Sample ID ***ICABT-51465l;A4*** **Repeat** ***9***

Batch ID ***M132731***

Count Routine ***Gross Alpha Beta*** **Detector Volts** ***1,515.0***

Sample Qty 0.000 **sd** 0.000

Residual Wt 0.000 ***mg*** **sd** 0.000 ***mg***

Count Date 8/12/2013 17:54 **Collection Date 1** **Half Life** 0.00 ***days***
Collection Date 2 **Decay Factor** 1.000

Sample Count Time 50.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.043	13,778	275.560	275.517
sd	0.000			0.007	117.380	2.348	2.348
Alpha to Beta	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.521	5,499	109.980	109.459
sd	0.000			0.023	74.155	1.483	1.483

	Net Activity dpm	LLD dpm	Net Concentration *	MDC	Limits	% of Limits
Alpha	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			
Beta	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			

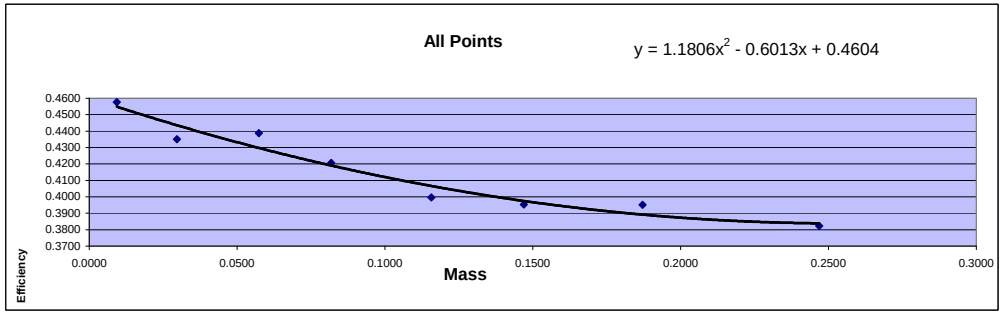
*** Note: Decay Corrected MDC Method -** **Tb = Ts < 10**
Error = 0.00 **x sd**

Curve is for Gross Beta
Strontium 90
and
Total Strontium

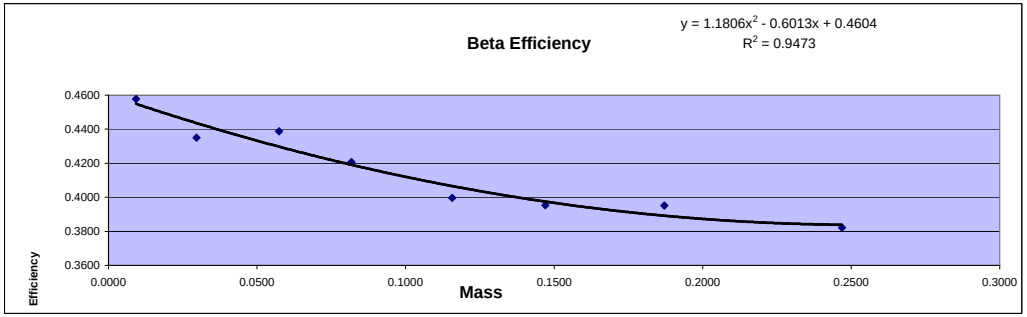
Purple 8

Detector ID	Std ID	Count Date	Sample Wt	Count Time	Beta Counts	DPM 41558.018 CPM	Sr-90 Eff	Standard Aliquot
8	B1	2/3/2013 17:22	0.0093	5	95105	19021.000	0.4577	1mL
8	B2	2/3/2013 18:51	0.0296	5	90382	18076.400	0.4350	1mL
8	B3	2/3/2013 18:32	0.0574	5	91181	18236.200	0.4388	1mL
8	B4	2/3/2013 18:19	0.0818	5	87402	17480.400	0.4206	1mL
8	B5	2/3/2013 18:07	0.1157	5	83044	16608.800	0.3997	1mL
8	B6	2/3/2013 17:51	0.1470	5	82141	16428.200	0.3953	1mL
8	B7	2/3/2013 17:43	0.1871	5	82112	16422.400	0.3952	1mL
8	B8	2/3/2013 17:29	0.2469	5	79414	15882.800	0.3822	1mL

Mass	Measured Efficiency	Theoretical Efficiency	Percent Δ Efficiency
0.0093	0.4577	0.4549	0.61%
0.0296	0.4350	0.4436	-1.95%
0.0574	0.4388	0.4298	2.10%
0.0818	0.4206	0.4191	0.36%
0.1157	0.3997	0.4066	-1.72%
0.1470	0.3953	0.3975	-0.56%
0.1871	0.3952	0.3892	1.53%
0.2469	0.3822	0.3839	-0.45%



Mass	Efficiency
0.0093	0.4577
0.0296	0.4350
0.0574	0.4388
0.0818	0.4206
0.1157	0.3997
0.1470	0.3953
0.1871	0.3952
0.2469	0.3822



Standard ID
Strontium 90
Sr-90_00004 #6322
Cert# 80573-334 Ref. date 9/172009

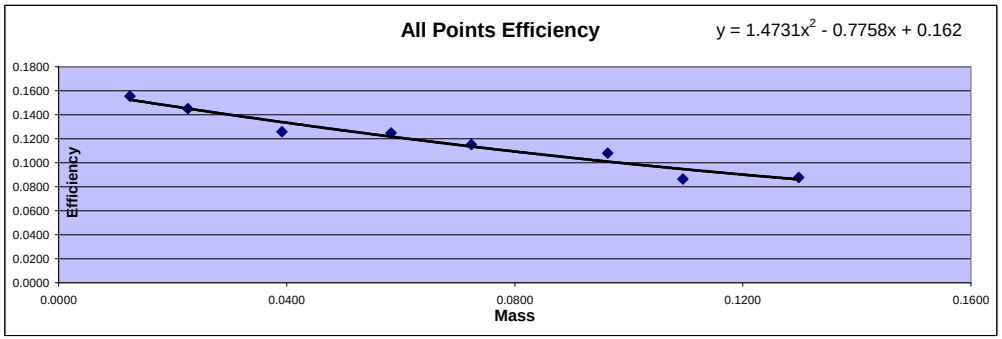
Initial Activity:	22560 dpm/mL
Reference Date:	9/17/2009
Count Date:	2/3/2013
Elapsed Time:	1235.000 days
Half Life:	10409.625 days
Exponential Term:	0.921055374
Corrected Activity:	20779.00924 dpm/mL
Decay Activity (Sr/Y-90)	41558.01848 dpm

Curve is for Gross Alpha

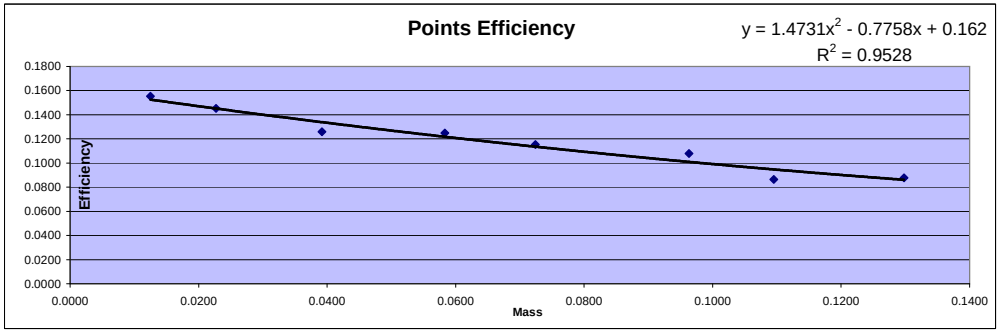
Purple 8

Detector ID	Sample ID	Count Date	Mass	Count Time	Alpha Counts	Net CPM	DPM	Th-230 Efficiency	Standard Aliquot
8	A1	7/30/2013 14:18	0.0125	50	18448	368.960	2374.5	0.1554	1mL
8	A2	7/30/2013 21:59	0.0227	50	17232	344.640	2374.5	0.1451	1mL
8	A3	7/30/2013 21:06	0.0392	50	14959	299.180	2374.5	0.1260	1mL
8	A4	7/30/2013 19:48	0.0583	50	14820	296.400	2374.5	0.1248	1mL
8	A5	7/30/2013 18:35	0.0724	50	27383	547.660	4749.0	0.1153	2mL
8	A6	7/30/2013 17:36	0.0963	50	25614	512.280	4749.0	0.1079	2mL
8	A7	7/30/2013 16:40	0.1095	50	20524	410.480	4749.0	0.0864	2mL
8	A8	7/30/2013 15:34	0.1298	50	20840	416.800	4749.0	0.0878	2mL

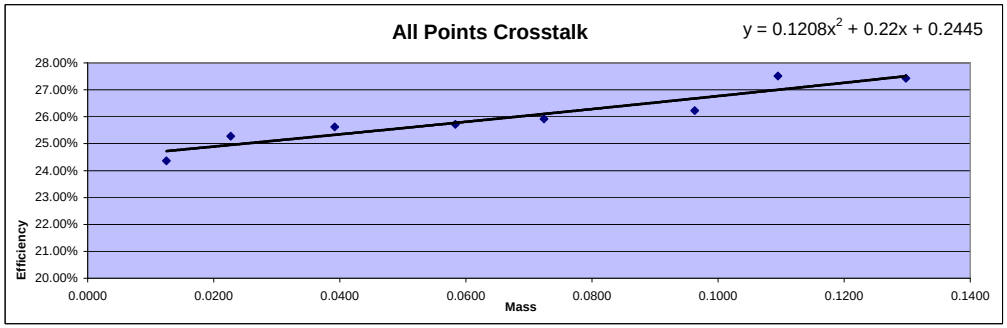
Mass	Measured Efficiency	Theoretical Efficiency	Percent Δ Efficiency
0.0125	0.1554	0.1525	1.87%
0.0227	0.1451	0.1451	0.00%
0.0392	0.1260	0.1339	-5.87%
0.0583	0.1248	0.1218	2.50%
0.0724	0.1153	0.1136	1.56%
0.0963	0.1079	0.1010	6.85%
0.1095	0.0864	0.0947	-8.74%
0.1298	0.0878	0.0861	1.91%



Mass	Efficiency
0.0125	0.1554
0.0227	0.1451
0.0392	0.1260
0.0583	0.1248
0.0724	0.1153
0.0963	0.1079
0.1095	0.0864
0.1298	0.0878



Detector ID	Sample ID	Mass	Count Time	Alpha Counts	Beta Counts	Alpha CPM	Beta CPM	% α into β	
8	A1	0.0125	40.00	18448	5942	461.20	148.55	24.36%	Min
8	A2	0.0227	40.00	17232	5831	430.80	145.78	25.28%	24.36%
8	A3	0.0392	40.00	14959	5153	373.98	128.83	25.62%	
8	A4	0.0583	40.00	14820	5130	370.50	128.25	25.71%	Max
8	A5	0.0724	40.00	27383	9581	684.58	239.53	25.92%	27.51%
8	A6	0.0963	40.00	25614	9109	640.35	227.73	26.23%	
8	A7	0.1095	40.00	20524	7790	513.10	194.75	27.51%	Mean
8	A8	0.1298	40.00	20840	7875	521.00	196.88	27.42%	26.01%



Standard ID
Thorium-230
Th-230_00016 #51465
Cert # 92523 Ref. date 11/29/2012
Activity 2374.5 dpm/mL

Alpha/Beta Count Results

Sample Activity Report

Purple 8-11 - A

Addr: 8

Sample ID ICABT-6322;B1

Repeat 36

Carrier No. 0

Batch ID M122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***Sample***	**sd**	0 ***Sample***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 2/3/2013 5:22:27 PM

Count Ended 2/3/2013 5:27:38 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 5.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.079	456	91.200	91.121
sd	0.000			0.009	21.354	4.271	4.271
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.344	95,105	19,021.000	19,020.656
sd	0.000			0.019	308.391	61.678	61.678

	Net Activity dpm	LLD dpm	MDC DPM	MPC DPM	Net Concentration * DPM	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Currie

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Purple 8-11 - A

Addr: 8

Sample ID ICABT-6322;B8

Repeat 36

Carrier No. 0

Batch ID M122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 ***Sample*** **sd** 0 ***Sample***

Residual Wt 0 ***mg*** **sd** 0 ***mg***

Count Began 2/3/2013 5:29:21 PM

Count Ended 2/3/2013 5:34:30 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 5.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.079	308	61.600	61.521
sd	0.000			0.009	17.550	3.510	3.510
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.344	79,414	15,882.800	15,882.456
sd	0.000			0.019	281.805	56.361	56.361

	Net Activity dpm	LLD dpm	MDC DPM	MPC DPM	Net Concentration * DPM	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Currie

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Purple 8-11 - A

Addr: 8

Sample ID ICABT-6322;B7

Repeat 37

Carrier No. 0

Batch ID M122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 ***Sample*** **sd** 0 ***Sample***

Residual Wt 0 ***mg*** **sd** 0 ***mg***

Count Began 2/3/2013 5:43:28 PM

Count Ended 2/3/2013 5:48:37 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 5.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.079	338	67.600	67.521
sd	0.000			0.009	18.385	3.677	3.677
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.344	82,112	16,422.400	16,422.056
sd	0.000			0.019	286.552	57.310	57.310

	Net Activity dpm	LLD dpm	MDC DPM	MPC DPM	Net Concentration * DPM	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Currie

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Purple 8-11 - A

Addr: 8

Sample ID ICABT-6322;B6

Repeat 38

Carrier No. 0

Batch ID M122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 ***Sample*** **sd** 0 ***Sample***

Residual Wt 0 ***mg*** **sd** 0 ***mg***

Count Began 2/3/2013 5:51:27 PM

Count Ended 2/3/2013 5:56:35 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 5.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.079	335	67.000	66.921
sd	0.000			0.009	18.303	3.661	3.661
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.344	82,141	16,428.200	16,427.856
sd	0.000			0.019	286.603	57.321	57.321

	Net Activity dpm	LLD dpm	MDC DPM	MPC DPM	Net Concentration * DPM	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Currie

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Purple 8-11 - A

Addr: 8

Sample ID ICABT-6322;B5

Repeat 39

Carrier No. 0

Batch ID M122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 ***Sample*** **sd** 0 ***Sample***

Residual Wt 0 ***mg*** **sd** 0 ***mg***

Count Began 2/3/2013 6:07:00 PM

Count Ended 2/3/2013 6:12:09 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 5.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.079	357	71.400	71.321
sd	0.000			0.009	18.894	3.779	3.779
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.344	83,044	16,608.800	16,608.456
sd	0.000			0.019	288.174	57.635	57.635

	Net Activity dpm	LLD dpm	MDC DPM	MPC DPM	Net Concentration * DPM	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Currie

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Purple 8-11 - A

Addr: 8

Sample ID ICABT-6322;B4 **Repeat** 41

Carrier No. 0

Batch ID M122627

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 ***Sample*** **sd** 0 ***Sample***

Residual Wt 0 ***mg*** **sd** 0 ***mg***

Count Began 2/3/2013 6:19:46 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 2/3/2013 6:24:55 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.079	407	81.400	81.321
sd	0.000			0.009	20.174	4.035	4.035
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.344	87,402	17,480.400	17,480.056
sd	0.000			0.019	295.638	59.128	59.128

	Net Activity dpm	LLD dpm	MDC DPM	MPC DPM	Net Concentration * DPM	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Currie **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Purple 8-11 - A

Addr: 8

Sample ID ICABT-6322;B3

Repeat 42

Carrier No. 0

Batch ID M122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 ***Sample*** **sd** 0 ***Sample***

Residual Wt 0 ***mg*** **sd** 0 ***mg***

Count Began 2/3/2013 6:32:16 PM

Count Ended 2/3/2013 6:37:27 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 5.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.079	396	79.200	79.121
sd	0.000			0.009	19.900	3.980	3.980
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.344	91,181	18,236.200	18,235.856
sd	0.000			0.019	301.962	60.392	60.392

	Net Activity dpm	LLD dpm	MDC DPM	MPC DPM	Net Concentration * DPM	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Currie

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Purple 8-11 - A

Addr: 8

Sample ID ICABT-6322;B2 **Repeat** 43

Carrier No. 0

Batch ID M122627

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 ***Sample*** **sd** 0 ***Sample***

Residual Wt 0 ***mg*** **sd** 0 ***mg***

Count Began 2/3/2013 6:51:01 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 2/3/2013 6:56:10 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.079	416	83.200	83.121
sd	0.000			0.009	20.396	4.079	4.079
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.344	90,382	18,076.400	18,076.056
sd	0.000			0.019	300.636	60.127	60.127

	Net Activity dpm	LLD dpm	MDC DPM	MPC DPM	Net Concentration * DPM	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Currie **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Purple 8-11 - A

Addr: 8

Sample ID ICABT-51465;A1

Repeat 8

Carrier No. 0

Batch ID m132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 ***Sample*** **sd** 0 ***Sample***

Residual Wt 0 ***mg*** **sd** 0 ***mg***

Count Began 7/30/2013 2:18:20 PM

Count Ended 7/30/2013 3:08:27 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 50.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.073	18,448	368.960	368.887
sd	0.000			0.009	135.823	2.716	2.716
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.410	5,942	118.840	118.430
sd	0.000			0.020	77.084	1.542	1.542

	Net Activity dpm	LLD dpm	MDC DPM	MPC DPM	Net Concentration * DPM	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Currie

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Purple 8-11 - A

Addr: 8

Sample ID ICABT-51465;A8

Repeat 9

Carrier No. 0

Batch ID m132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 ***Sample*** **sd** 0 ***Sample***

Residual Wt 0 ***mg*** **sd** 0 ***mg***

Count Began 7/30/2013 3:34:46 PM

Count Ended 7/30/2013 4:24:52 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 50.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.073	20,840	416.800	416.727
sd	0.000			0.009	144.361	2.887	2.887
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.410	7,875	157.500	157.090
sd	0.000			0.020	88.741	1.775	1.775

	Net Activity dpm	LLD dpm	MDC DPM	MPC DPM	Net Concentration * DPM	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Currie

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Purple 8-11 - A

Addr: 8

Sample ID ICABT-51465;A7

Repeat 10

Carrier No. 0

Batch ID m132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***Sample***	**sd**	0 ***Sample***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/30/2013 4:40:40 PM

Count Ended 7/30/2013 5:30:46 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 50.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.073	20,524	410.480	410.407
sd	0.000			0.009	143.262	2.865	2.865
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.410	7,790	155.800	155.390
sd	0.000			0.020	88.261	1.765	1.765

	Net Activity dpm	LLD dpm	MDC DPM	MPC DPM	Net Concentration * DPM	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Currie

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Purple 8-11 - A

Addr: 8

Sample ID ICABT-51465;A6 **Repeat** 11

Carrier No. 0

Batch ID m132731

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***Sample***	**sd**	0 ***Sample***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/30/2013 5:36:10 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 7/30/2013 6:26:16 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 50.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.073	25,614	512.280	512.207
sd	0.000			0.009	160.044	3.201	3.201
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.410	9,109	182.180	181.770
sd	0.000			0.020	95.441	1.909	1.909

	Net Activity dpm	LLD dpm	MDC DPM	MPC DPM	Net Concentration * DPM	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Currie **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Purple 8-11 - A

Addr: 8

Sample ID ICABT-51465;A5 **Repeat** 12

Carrier No. 0

Batch ID m132731

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***Sample***	**sd**	0 ***Sample***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/30/2013 6:35:38 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 7/30/2013 7:25:46 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 50.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.073	27,383	547.660	547.587
sd	0.000			0.009	165.478	3.310	3.310
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.410	9,581	191.620	191.210
sd	0.000			0.020	97.883	1.958	1.958

	Net Activity dpm	LLD dpm	MDC DPM	MPC DPM	Net Concentration * DPM	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Currie **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Purple 8-11 - A

Addr: 8

Sample ID ICABT-51465;A4

Repeat 13

Carrier No. 0

Batch ID m132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 ***Sample*** **sd** 0 ***Sample***

Residual Wt 0 ***mg*** **sd** 0 ***mg***

Count Began 7/30/2013 7:48:19 PM

Count Ended 7/30/2013 8:38:26 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 50.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.073	14,820	296.400	296.327
sd	0.000			0.009	121.737	2.435	2.435
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.410	5,130	102.600	102.190
sd	0.000			0.020	71.624	1.432	1.433

	Net Activity dpm	LLD dpm	MDC DPM	MPC DPM	Net Concentration * DPM	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Currie

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Purple 8-11 - A

Addr: 8

Sample ID ICABT-51465;A3

Repeat 14

Carrier No. 0

Batch ID m132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 ***Sample*** **sd** 0 ***Sample***

Residual Wt 0 ***mg*** **sd** 0 ***mg***

Count Began 7/30/2013 9:06:59 PM

Count Ended 7/30/2013 9:57:06 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 50.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.073	14,959	299.180	299.107
sd	0.000			0.009	122.307	2.446	2.446
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.410	5,153	103.060	102.650
sd	0.000			0.020	71.784	1.436	1.436

	Net Activity dpm	LLD dpm	MDC DPM	MPC DPM	Net Concentration * DPM	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Currie

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Purple 8-11 - A

Addr: 8

Sample ID ICABT-51465;A2

Repeat 15

Carrier No. 0

Batch ID m132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 ***Sample*** **sd** 0 ***Sample***

Residual Wt 0 ***mg*** **sd** 0 ***mg***

Count Began 7/30/2013 9:59:07 PM

Count Ended 7/30/2013 10:49:12 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 50.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.073	17,232	344.640	344.567
sd	0.000			0.009	131.271	2.625	2.625
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.410	5,831	116.620	116.210
sd	0.000			0.020	76.361	1.527	1.527

	Net Activity dpm	LLD dpm	MDC DPM	MPC DPM	Net Concentration * DPM	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Currie

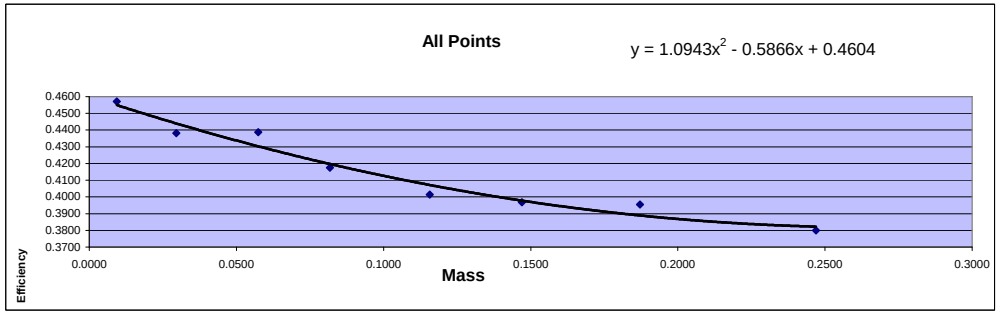
Error = .00 **x sd**

Curve is for Gross Beta
Strontium 90
and
Total Strontium

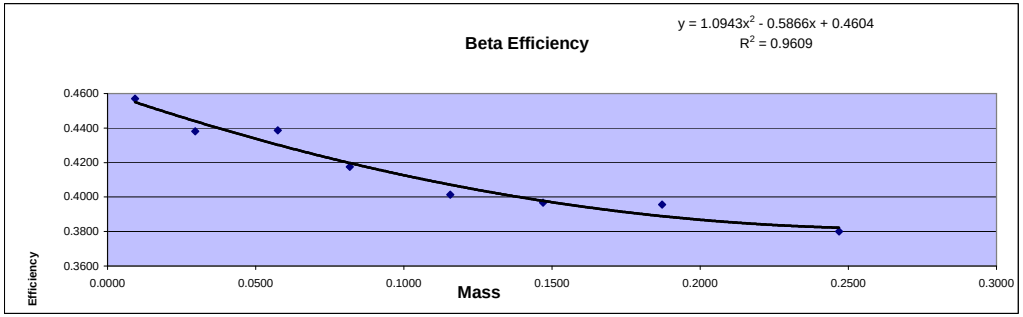
Purple 10

Detector ID	Std ID	Count Date	Sample Wt	Count Time	Beta Counts	DPM 41558.018 CPM	Sr-90 Eff	Standard Aliquot
10	B1	2/3/2013 17:43	0.0093	5	94979	18995.800	0.4571	1mL
10	B2	2/3/2013 17:29	0.0296	5	91052	18210.400	0.4382	1mL
10	B3	2/3/2013 17:22	0.0574	5	91150	18230.000	0.4387	1mL
10	B4	2/3/2013 18:51	0.0818	5	86754	17350.800	0.4175	1mL
10	B5	2/3/2013 18:32	0.1157	5	83407	16681.400	0.4014	1mL
10	B6	2/3/2013 18:19	0.1470	5	82434	16486.800	0.3967	1mL
10	B7	2/3/2013 18:07	0.1871	5	82188	16437.600	0.3955	1mL
10	B8	2/3/2013 17:51	0.2469	5	78950	15790.000	0.3800	1mL

Mass	Measured Efficiency	Theoretical Efficiency	Percent Δ Efficiency
0.0093	0.4571	0.4550	0.45%
0.0296	0.4382	0.4440	-1.31%
0.0574	0.4387	0.4303	1.94%
0.0818	0.4175	0.4197	-0.53%
0.1157	0.4014	0.4072	-1.42%
0.1470	0.3967	0.3978	-0.28%
0.1871	0.3955	0.3890	1.69%
0.2469	0.3800	0.3823	-0.61%



Mass	Efficiency
0.0093	0.4571
0.0296	0.4382
0.0574	0.4387
0.0818	0.4175
0.1157	0.4014
0.1470	0.3967
0.1871	0.3955
0.2469	0.3800



Standard ID
Strontium 90
Sr-90_00004 #6322
Cert# 80573-334 Ref. date 9/172009

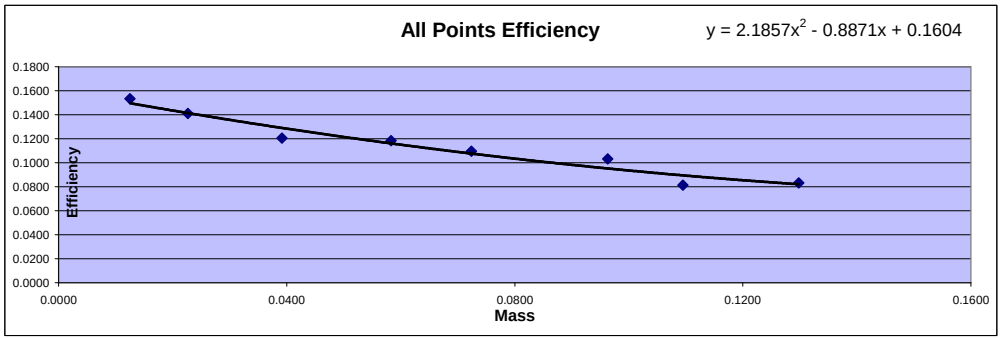
Initial Activity:	22560	dpm/mL
Reference Date:	9/17/2009	
Count Date:	2/3/2013	
Elapsed Time:	1235.000	days
Half Life:	10409.625	days
Exponential Term:	0.921055374	
Corrected Activity:	20779.00924	dpm/mL
Decay Activity (Sr/Y-90)	41558.01848	dpm

Curve is for Gross Alpha

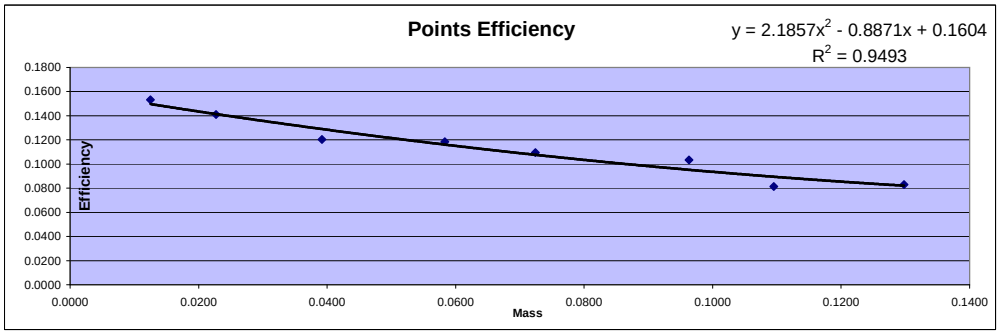
Purple 10

Detector ID	Sample ID	Count Date	Mass	Count Time	Alpha Counts	Net CPM	DPM	Th-230 Efficiency	Standard Aliquot
10	A1	7/30/2013 16:40	0.0125	50	18202	364.040	2374.5	0.1533	1mL
10	A2	7/30/2013 15:34	0.0227	50	16742	334.840	2374.5	0.1410	1mL
10	A3	7/30/2013 14:18	0.0392	50	14302	286.040	2374.5	0.1205	1mL
10	A4	7/30/2013 21:59	0.0583	50	14063	281.260	2374.5	0.1185	1mL
10	A5	7/30/2013 21:07	0.0724	50	26022	520.440	4749.0	0.1096	2mL
10	A6	7/30/2013 19:48	0.0963	50	24535	490.700	4749.0	0.1033	2mL
10	A7	7/30/2013 18:35	0.1095	50	19320	386.400	4749.0	0.0814	2mL
10	A8	7/30/2013 17:36	0.1298	50	19731	394.620	4749.0	0.0831	2mL

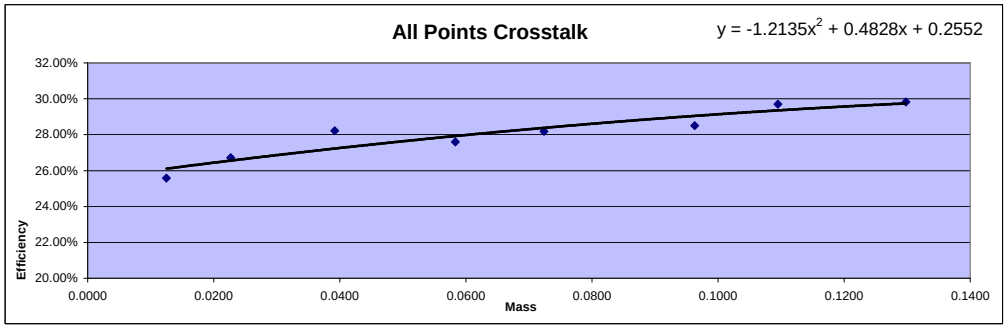
Mass	Measured Efficiency	Theoretical Efficiency	Percent Δ Efficiency
0.0125	0.1533	0.1497	2.45%
0.0227	0.1410	0.1414	-0.26%
0.0392	0.1205	0.1290	-6.61%
0.0583	0.1185	0.1161	2.01%
0.0724	0.1096	0.1076	1.82%
0.0963	0.1033	0.0952	8.49%
0.1095	0.0814	0.0895	-9.06%
0.1298	0.0831	0.0821	1.24%



Mass	Efficiency
0.0125	0.1533
0.0227	0.1410
0.0392	0.1205
0.0583	0.1185
0.0724	0.1096
0.0963	0.1033
0.1095	0.0814
0.1298	0.0831



Detector ID	Sample ID	Mass	Count Time	Alpha Counts	Beta Counts	Alpha CPM	Beta CPM	% α into β	
10	A1	0.0125	40.00	18202	6256	455.05	156.40	25.58%	Min
10	A2	0.0227	40.00	16742	6106	418.55	152.65	26.72%	25.58%
10	A3	0.0392	40.00	14302	5623	357.55	140.58	28.22%	
10	A4	0.0583	40.00	14063	5362	351.58	134.05	27.60%	Max
10	A5	0.0724	40.00	26022	10208	650.55	255.20	28.18%	29.83%
10	A6	0.0963	40.00	24535	9785	613.38	244.63	28.51%	
10	A7	0.1095	40.00	19320	8164	483.00	204.10	29.70%	Mean
10	A8	0.1298	40.00	19731	8388	493.28	209.70	29.83%	28.04%



Standard ID
Thorium-230
Th-230_00016 #51465
Cert # 92523 Ref. date 11/29/2012
Activity 2374.5 dpm/mL

Alpha/Beta Count Results

Sample Activity Report

Purple 8-11 - C

Addr: 10

Sample ID ICABT-6322;B3

Repeat 36

Carrier No. 0

Batch ID M122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***Sample***	**sd**	0 ***Sample***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 2/3/2013 5:22:36 PM

Count Ended 2/3/2013 5:27:45 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 5.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.058	141	28.200	28.142
sd	0.000			0.008	11.874	2.375	2.375
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.297	91,150	18,230.000	18,229.703
sd	0.000			0.017	301.911	60.382	60.382

	Net Activity dpm	LLD dpm	MDC DPM	MPC DPM	Net Concentration * DPM	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Currie

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Purple 8-11 - C

Addr: 10

Sample ID ICABT-6322;B2

Repeat 37

Carrier No. 0

Batch ID M122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 ***Sample*** **sd** 0 ***Sample***

Residual Wt 0 ***mg*** **sd** 0 ***mg***

Count Began 2/3/2013 5:29:32 PM

Count Ended 2/3/2013 5:34:42 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 5.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.058	160	32.000	31.942
sd	0.000			0.008	12.649	2.530	2.530
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.297	91,052	18,210.400	18,210.103
sd	0.000			0.017	301.748	60.350	60.350

	Net Activity dpm	LLD dpm	MDC DPM	MPC DPM	Net Concentration * DPM	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Currie

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Purple 8-11 - C

Addr: 10

Sample ID ICABT-6322;B1

Repeat 38

Carrier No. 0

Batch ID M122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***Sample***	**sd**	0 ***Sample***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 2/3/2013 5:43:37 PM

Count Ended 2/3/2013 5:48:46 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 5.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.058	182	36.400	36.342
sd	0.000			0.008	13.491	2.698	2.698
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.297	94,979	18,995.800	18,995.503
sd	0.000			0.017	308.187	61.637	61.637

	Net Activity dpm	LLD dpm	MDC DPM	MPC DPM	Net Concentration * DPM	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Currie

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Purple 8-11 - C

Addr: 10

Sample ID ICABT-6322;B8 **Repeat** 38

Carrier No. 0

Batch ID M122627

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 ***Sample*** **sd** 0 ***Sample***

Residual Wt 0 ***mg*** **sd** 0 ***mg***

Count Began 2/3/2013 5:51:36 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 2/3/2013 5:56:45 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.058	117	23.400	23.342
sd	0.000			0.008	10.817	2.163	2.163
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.297	78,950	15,790.000	15,789.703
sd	0.000			0.017	280.980	56.196	56.196

	Net Activity dpm	LLD dpm	MDC DPM	MPC DPM	Net Concentration * DPM	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Currie **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Purple 8-11 - C

Addr: 10

Sample ID ICABT-6322;B7

Repeat 39

Carrier No. 0

Batch ID M122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***Sample***	**sd**	0 ***Sample***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 2/3/2013 6:07:09 PM

Count Ended 2/3/2013 6:12:19 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 5.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.058	154	30.800	30.742
sd	0.000			0.008	12.410	2.482	2.482
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.297	82,188	16,437.600	16,437.303
sd	0.000			0.017	286.684	57.337	57.337

	Net Activity dpm	LLD dpm	MDC DPM	MPC DPM	Net Concentration * DPM	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Currie

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Purple 8-11 - C

Addr: 10

Sample ID ICABT-6322;B6

Repeat 40

Carrier No. 0

Batch ID M122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***Sample***	**sd**	0 ***Sample***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 2/3/2013 6:19:54 PM

Count Ended 2/3/2013 6:25:04 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 5.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.058	143	28.600	28.542
sd	0.000			0.008	11.958	2.392	2.392
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.297	82,434	16,486.800	16,486.503
sd	0.000			0.017	287.113	57.423	57.423

	Net Activity dpm	LLD dpm	MDC DPM	MPC DPM	Net Concentration * DPM	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Currie

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Purple 8-11 - C

Addr: 10

Sample ID ICABT-6322;B5

Repeat 41

Carrier No. 0

Batch ID M122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***Sample***	**sd**	0 ***Sample***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 2/3/2013 6:32:25 PM

Count Ended 2/3/2013 6:37:34 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 5.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.058	126	25.200	25.142
sd	0.000			0.008	11.225	2.245	2.245
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.297	83,407	16,681.400	16,681.103
sd	0.000			0.017	288.803	57.761	57.761

	Net Activity dpm	LLD dpm	MDC DPM	MPC DPM	Net Concentration * DPM	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Currie

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Purple 8-11 - C

Addr: 10

Sample ID ICABT-6322;B4

Repeat 43

Carrier No. 0

Batch ID M122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***Sample***	**sd**	0 ***Sample***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 2/3/2013 6:51:10 PM

Count Ended 2/3/2013 6:56:19 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 5.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.058	129	25.800	25.742
sd	0.000			0.008	11.358	2.272	2.272
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.297	86,754	17,350.800	17,350.503
sd	0.000			0.017	294.540	58.908	58.908

	Net Activity dpm	LLD dpm	MDC DPM	MPC DPM	Net Concentration * DPM	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Currie

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Purple 8-11 - C

Addr: 10

Sample ID ICABT-51465;A3

Repeat 8

Carrier No. 0

Batch ID m132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 ***Sample*** **sd** 0 ***Sample***

Residual Wt 0 ***mg*** **sd** 0 ***mg***

Count Began 7/30/2013 2:18:32 PM

Count Ended 7/30/2013 3:08:37 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 50.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.056	14,302	286.040	285.984
sd	0.000			0.007	119.591	2.392	2.392
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.299	5,623	112.460	112.161
sd	0.000			0.017	74.987	1.500	1.500

	Net Activity dpm	LLD dpm	MDC DPM	MPC DPM	Net Concentration * DPM	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Currie

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Purple 8-11 - C

Addr: 10

Sample ID ICABT-51465;A2 **Repeat** 9

Carrier No. 0

Batch ID m132731

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 ***Sample*** **sd** 0 ***Sample***

Residual Wt 0 ***mg*** **sd** 0 ***mg***

Count Began 7/30/2013 3:34:15 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 7/30/2013 4:24:20 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 50.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.056	16,742	334.840	334.784
sd	0.000			0.007	129.391	2.588	2.588
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.299	6,106	122.120	121.821
sd	0.000			0.017	78.141	1.563	1.563

	Net Activity dpm	LLD dpm	MDC DPM	MPC DPM	Net Concentration * DPM	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Currie **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Purple 8-11 - C

Addr: 10

Sample ID ICABT-51465;A1

Repeat 10

Carrier No. 0

Batch ID m132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***Sample***	**sd**	0 ***Sample***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/30/2013 4:40:10 PM

Count Ended 7/30/2013 5:30:16 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 50.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.056	18,202	364.040	363.984
sd	0.000			0.007	134.915	2.698	2.698
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.299	6,256	125.120	124.821
sd	0.000			0.017	79.095	1.582	1.582

	Net Activity dpm	LLD dpm	MDC DPM	MPC DPM	Net Concentration * DPM	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Currie

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Purple 8-11 - C

Addr: 10

Sample ID ICABT-51465;A8 **Repeat** 11

Carrier No. 0

Batch ID m132731

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 ***Sample*** **sd** 0 ***Sample***

Residual Wt 0 ***mg*** **sd** 0 ***mg***

Count Began 7/30/2013 5:36:23 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 7/30/2013 6:26:28 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 50.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.056	19,731	394.620	394.564
sd	0.000			0.007	140.467	2.809	2.809
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.299	8,388	167.760	167.461
sd	0.000			0.017	91.586	1.832	1.832

	Net Activity dpm	LLD dpm	MDC DPM	MPC DPM	Net Concentration * DPM	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Currie **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Purple 8-11 - C

Addr: 10

Sample ID ICABT-51465;A7 **Repeat** 12

Carrier No. 0

Batch ID m132731

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 ***Sample*** **sd** 0 ***Sample***

Residual Wt 0 ***mg*** **sd** 0 ***mg***

Count Began 7/30/2013 6:35:48 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 7/30/2013 7:25:55 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 50.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.056	19,320	386.400	386.344
sd	0.000			0.007	138.996	2.780	2.780
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.299	8,164	163.280	162.981
sd	0.000			0.017	90.355	1.807	1.807

	Net Activity dpm	LLD dpm	MDC DPM	MPC DPM	Net Concentration * DPM	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Currie **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Purple 8-11 - C

Addr: 10

Sample ID ICABT-51465;A6 **Repeat** 13

Carrier No. 0

Batch ID m132731

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 ***Sample*** **sd** 0 ***Sample***

Residual Wt 0 ***mg*** **sd** 0 ***mg***

Count Began 7/30/2013 7:48:29 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 7/30/2013 8:38:36 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 50.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.056	24,535	490.700	490.644
sd	0.000			0.007	156.637	3.133	3.133
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.299	9,785	195.700	195.401
sd	0.000			0.017	98.919	1.978	1.978

	Net Activity dpm	LLD dpm	MDC DPM	MPC DPM	Net Concentration * DPM	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Currie **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Purple 8-11 - C

Addr: 10

Sample ID ICABT-51465;A5 **Repeat** 14

Carrier No. 0

Batch ID m132731

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 ***Sample*** **sd** 0 ***Sample***

Residual Wt 0 ***mg*** **sd** 0 ***mg***

Count Began 7/30/2013 9:07:09 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 7/30/2013 9:57:17 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 50.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.056	26,022	520.440	520.384
sd	0.000			0.007	161.313	3.226	3.226
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.299	10,208	204.160	203.861
sd	0.000			0.017	101.035	2.021	2.021

	Net Activity dpm	LLD dpm	MDC DPM	MPC DPM	Net Concentration * DPM	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Currie **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Purple 8-11 - C

Addr: 10

Sample ID ICABT-51465;A4 **Repeat** 15

Carrier No. 0

Batch ID m132731

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 ***Sample*** **sd** 0 ***Sample***

Residual Wt 0 ***mg*** **sd** 0 ***mg***

Count Began 7/30/2013 9:59:15 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 7/30/2013 10:49:21 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 50.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.056	14,063	281.260	281.204
sd	0.000			0.007	118.588	2.372	2.372
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.299	5,362	107.240	106.941
sd	0.000			0.017	73.226	1.465	1.465

	Net Activity dpm	LLD dpm	MDC DPM	MPC DPM	Net Concentration * DPM	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Currie **Error =** .00 **x sd**

Alpha Beta Calibration Verifications

ICV is for Gross Beta
Strontium 90
and
Total Strontium

Orange Beta ICV 2013						
Detector	Low Mass Recovery	Medium Mass Recovery	High Mass Recovery	Mean Recovery	Beta Activity	2009.34 pCi
23	98.69%	98.64%	101.53%	99.62%		

Standard ID

Strontium 90
Sr-90_00018 #51512 (Rad12-0043)
Cert# 92352 Ref. date 11/29/12

Initial Activity:	2238.7	dpm	
Reference Date:	11/29/2012		
Current Date:	1/24/2013		(or date at which you wish to determine activity)
Elapsed Time:	56.000	days	
Half Life:	10409.625	days	
Exponential Term:	0.996278064		
Corrected Activity:	2230.367701	dpm	
Decay Activity (Sr/Y-90)	4460.735402	dpm	2009.34 pCi

ICV is for Gross Alpha

Orange Alpha ICV 2013				
Detector	Low Mass Recovery	Medium Mass Recovery	High Mass Recovery	Mean Recovery
23	120.31%	97.89%	80.54%	99.58%

Standard ID

Thorium-230
Th-230_00003 #6340
Cert # 84460-334 Ref. date 4/11/11
Activity 1079.73 pCi/mL

Alpha/Beta Count Results

Sample Activity Report

Orange 20-23 - D

Addr: 23

Sample ID ICV-51512;Beta 3 **Repeat** 22

Carrier No. 0

Batch ID m122640

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/24/2013 10:51:11 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 1/24/2013 10:56:14 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.046	3	0.600	0.554
sd	0.000			0.007	1.732	0.346	0.346
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.330	8,756	1,751.200	1,750.870
sd	0.000			0.018	93.574	18.715	18.715

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 20-23 - D

Addr: 23

Sample ID ICV-51512;Beta 2

Repeat 23

Carrier No. 0

Batch ID m122640

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/24/2013 11:01:28 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 1/24/2013 11:06:30 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.046	5	1.000	0.954
sd	0.000			0.007	2.236	0.447	0.447
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.330	8,918	1,783.600	1,783.270
sd	0.000			0.018	94.435	18.887	18.887

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 20-23 - D

Addr: 23

Sample ID ICV-51512;Beta 1 **Repeat** 24

Carrier No. 0

Batch ID m122640

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/24/2013 11:07:36 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 1/24/2013 11:12:38 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.046	3	0.600	0.554
sd	0.000			0.007	1.732	0.346	0.346
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.330	9,421	1,884.200	1,883.870
sd	0.000			0.018	97.062	19.412	19.412

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 20-23 - D

Addr: 23

Sample ID ICVABT-6340;A2 **Repeat** 28

Carrier No. 0

Batch ID m132736

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 7/25/2013 9:23:05 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 7/25/2013 9:53:09 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 30.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.053	8,175	272.500	272.447
sd	0.000			0.007	90.416	3.014	3.014
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.398	3,254	108.467	108.069
sd	0.000			0.020	57.044	1.901	1.902

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 20-23 - D

Addr: 23

Sample ID ICVABT-6340;A1 **Repeat** 29

Carrier No. 0

Batch ID m132736

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 7/25/2013 10:23:49 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 7/25/2013 10:53:54 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 30.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.053	11,856	395.200	395.147
sd	0.000			0.007	108.885	3.630	3.630
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.398	4,186	139.533	139.135
sd	0.000			0.020	64.699	2.157	2.157

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 20-23 - D

Addr: 23

Sample ID ICVABT-6340;A3 **Repeat** 29

Carrier No. 0

Batch ID m132736

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/26/2013 12:06:39 AM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 7/26/2013 12:36:43 AM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 30.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.053	6,135	204.500	204.447
sd	0.000			0.007	78.326	2.611	2.611
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.398	2,771	92.367	91.969
sd	0.000			0.020	52.640	1.755	1.755

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

ICV is for Gross Alpha

Protean Alpha ICV - 2013				
	Low	Medium	High	Mean
	Mass	Mass	Mass	Recovery
Detector	Recovery	Recovery	Recovery	
15	122.25%	103.82%	87.14%	104.41%

Standard ID

Thorium-230
Th-230_00003 #6340
Cert # 84460-334 Ref. date 4/11/11

Activity 1079.73 pCi/mL

ICV is for Gross Beta
Strontium 90
and
Total Strontium

Protean Beta ICV - 2013				
Detector	Low Mass Recovery	Medium Mass Recovery	High Mass Recovery	Mean Recovery
15	97.91%	97.45%	99.00%	98.12%

Beta Activity 2000.929 pCi

Beta Activity 2000.796 pCi

Standard ID

Strontium 90
Sr-90_00018 #51512
Cert# 92352 Ref. date 11/29/12

Initial Activity:	2238.7	dpm	
Reference Date:	11/29/2012		
Current Date:	3/28/2013		(or date at which you wish to determine activity)
Elapsed Time:	119.000	days	
Half Life:	10409.625	days	
Exponential Term:	0.992107441		
Corrected Activity:	2221.030929	dpm	
Decay Activity (Sr/Y-90)	4442.061857	dpm	2000.929 pCi

Initial Activity:	2238.7	dpm	
Reference Date:	11/29/2012		
Current Date:	3/29/2013		(or date at which you wish to determine activity)
Elapsed Time:	120.000	days	
Half Life:	10409.625	days	
Exponential Term:	0.992041382		
Corrected Activity:	2220.883041	dpm	
Decay Activity (Sr/Y-90)	4441.766083	dpm	2000.796 pCi

Low Level Alpha/Beta Count Results
Sample Activity Report

Protean 12-15 - D **Address:** ***15***

Sample ID ***ICVABT-51512;Beta 3*** **Repeat** ***17***

Batch ID ***122640***

Count Routine ***Gross Alpha Beta*** **Detector Volts** ***1,515.0***

Sample Qty 0.000 **sd** 0.000

Residual Wt 0.000 ***mg*** **sd** 0.000 ***mg***

Count Date 3/28/2013 23:53 **Collection Date 1** **Half Life** 0.00 ***days***
Collection Date 2 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.047	0	0.000	-0.047
sd	0.000			0.007	0.000	0.000	0.137
Alpha to Beta	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.480	8,408	1,681.600	1,681.120
sd	0.000			0.022	91.695	18.339	18.339

	Net Activity dpm	LLD dpm	Net Concentration *	MDC	Limits	% of Limits
Alpha	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			
Beta	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			

*** Note: Decay Corrected MDC Method -** **Tb = Ts < 10**
Error = 0.00 **x sd**

Low Level Alpha/Beta Count Results
Sample Activity Report

Protean 12-15 - D **Address:** ***15***

Sample ID ***ICVABT-51512;Beta 2*** **Repeat** ***18***

Batch ID ***122640***

Count Routine ***Gross Alpha Beta*** **Detector Volts** ***1,515.0***

Sample Qty 0.000 **sd** 0.000

Residual Wt 0.000 ***mg*** **sd** 0.000 ***mg***

Count Date 3/28/2013 23:59 **Collection Date 1** **Half Life** 0.00 ***days***
Collection Date 2 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.047	5	1.000	0.953
sd	0.000			0.007	2.236	0.447	0.447
Alpha to Beta	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.480	8,642	1,728.400	1,727.920
sd	0.000			0.022	92.962	18.592	18.592

	Net Activity dpm	LLD dpm	Net Concentration *	MDC	Limits	% of Limits
Alpha	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			
Beta	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			

*** Note: Decay Corrected MDC Method -** **Tb = Ts < 10**
Error = 0.00 **x sd**

Low Level Alpha/Beta Count Results
Sample Activity Report

Protean 12-15 - D **Address:** ***15***

Sample ID ***ICVABT-51512;Beta 1*** **Repeat** ***19***

Batch ID ***122640***

Count Routine ***Gross Alpha Beta*** **Detector Volts** ***1,515.0***

Sample Qty 0.000 **sd** 0.000

Residual Wt 0.000 ***mg*** **sd** 0.000 ***mg***

Count Date 3/29/2013 00:05 **Collection Date 1** **Half Life** 0.00 ***days***
Collection Date 2 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.047	2	0.400	0.353
sd	0.000			0.007	1.414	0.283	0.283
Alpha to Beta	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.480	9,131	1,826.200	1,825.720
sd	0.000			0.022	95.556	19.111	19.111

	Net Activity dpm	LLD dpm	Net Concentration *	MDC	Limits	% of Limits
Alpha	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			
Beta	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			

*** Note: Decay Corrected MDC Method -** **Tb = Ts < 10**
Error = 0.00 **x sd**

Low Level Alpha/Beta Count Results
Sample Activity Report

Protean 12-15 - D **Address:** ***15***

Sample ID ***ICVABT-6340;A3*** **Repeat** ***6***

Batch ID ***M132736***

Count Routine ***Gross Alpha Beta*** **Detector Volts** ***1,515.0***

Sample Qty 0.000 **sd** 0.000

Residual Wt 0.000 ***mg*** **sd** 0.000 ***mg***

Count Date 8/18/2013 17:31 **Collection Date 1** **Half Life** 0.00 ***days***
Collection Date 2 **Decay Factor** 1.000

Sample Count Time 30.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.043	6,524	217.467	217.424
sd	0.000			0.007	80.771	2.692	2.692
Alpha to Beta	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.521	3,087	102.900	102.379
sd	0.000			0.023	55.561	1.852	1.852

	Net Activity dpm	LLD dpm	Net Concentration *	MDC	Limits	% of Limits
Alpha	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			
Beta	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			

*** Note: Decay Corrected MDC Method -** **Tb = Ts < 10**
Error = 0.00 **x sd**

Low Level Alpha/Beta Count Results
Sample Activity Report

Protean 12-15 - D **Address:** ***15***

Sample ID ***ICVABT-6340;A2*** **Repeat** ***7***

Batch ID ***M132736***

Count Routine ***Gross Alpha Beta*** **Detector Volts** ***1,515.0***

Sample Qty 0.000 **sd** 0.000

Residual Wt 0.000 ***mg*** **sd** 0.000 ***mg***

Count Date 8/18/2013 18:08 **Collection Date 1** **Half Life** 0.00 ***days***
Collection Date 2 **Decay Factor** 1.000

Sample Count Time 30.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.043	8,530	284.333	284.290
sd	0.000			0.007	92.358	3.079	3.079
Alpha to Beta	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.521	3,555	118.500	117.979
sd	0.000			0.023	59.624	1.987	1.988

	Net Activity dpm	LLD dpm	Net Concentration *	MDC	Limits	% of Limits
Alpha	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			
Beta	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			

*** Note: Decay Corrected MDC Method -** **Tb = Ts < 10**
Error = 0.00 **x sd**

Low Level Alpha/Beta Count Results
Sample Activity Report

Protean 12-15 - D **Address:** ***15***

Sample ID ***ICVABT-6340;A1*** **Repeat** ***8***

Batch ID ***M132736***

Count Routine ***Gross Alpha Beta*** **Detector Volts** ***1,515.0***

Sample Qty 0.000 **sd** 0.000

Residual Wt 0.000 ***mg*** **sd** 0.000 ***mg***

Count Date 8/18/2013 18:45 **Collection Date 1** **Half Life** 0.00 ***days***
Collection Date 2 **Decay Factor** 1.000

Sample Count Time 30.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.043	11,818	393.933	393.890
sd	0.000			0.007	108.711	3.624	3.624
Alpha to Beta	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.521	4,564	152.133	151.612
sd	0.000			0.023	67.557	2.252	2.252

	Net Activity dpm	LLD dpm	Net Concentration *	MDC	Limits	% of Limits
Alpha	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			
Beta	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			

*** Note: Decay Corrected MDC Method -** **Tb = Ts < 10**
Error = 0.00 **x sd**

ICV is for Gross Beta
Strontium 90
and
Total Strontium

Purple Beta ICV 2013						
Detector	Low Mass Recovery	Medium Mass Recovery	High Mass Recovery	Mean Recovery	Beta Activity	2007.869 pCi
8	99.06%	99.36%	101.55%	99.99%		

Standard ID

Strontium 90
Sr-90_00018 #51512
Cert# 92352 Ref. date 11/29/12

Initial Activity:	2238.7	dpm	
Reference Date:	11/29/2012		
Current Date:	2/4/2013		(or date at which you wish to determine activity)
Elapsed Time:	67.000	days	
Half Life:	10409.625	days	
Exponential Term:	0.995548598		
Corrected Activity:	2228.734647	dpm	
Decay Activity (Sr/Y-90)	4457.469295	dpm	2007.869 pCi

ICV is for Gross Alpha

Purple Alpha ICV 2013				
	Low	Medium	High	Mean
	Mass	Mass	Mass	Recovery
Detector	Recovery	Recovery	Recovery	
8	122.72%	102.34%	86.26%	103.77%

Standard ID

Thorium-230
Th-230_00003 #6340
Cert # 84460-334 Ref. date 4/11/11

Activity 1079.73 pCi/mL

Alpha/Beta Count Results

Sample Activity Report

Purple 8-11 - A

Addr: 8

Sample ID ICVABT-51512;Beta 1 **Repeat** 3

Carrier No. 0

Batch ID m122640

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***Sample***	**sd**	0 ***Sample***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 2/4/2013 6:34:45 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 2/4/2013 6:39:47 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.079	39	7.800	7.721
sd	0.000			0.009	6.245	1.249	1.249
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.344	9,556	1,911.200	1,910.856
sd	0.000			0.019	97.755	19.551	19.551

	Net Activity dpm	LLD dpm	MDC DPM	MPC DPM	Net Concentration * DPM	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Currie **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Purple 8-11 - A

Addr: 8

Sample ID ICVABT-51512;Beta 3 **Repeat** 27

Carrier No. 0

Batch ID m122640

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***Sample***	**sd**	0 ***Sample***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 2/4/2013 8:23:43 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 2/4/2013 8:28:46 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.079	42	8.400	8.321
sd	0.000			0.009	6.481	1.296	1.296
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.344	8,832	1,766.400	1,766.056
sd	0.000			0.019	93.979	18.796	18.796

	Net Activity dpm	LLD dpm	MDC DPM	MPC DPM	Net Concentration * DPM	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Currie **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Purple 8-11 - A

Addr: 8

Sample ID ICVABT-51512;Beta 2 | **Repeat** 10 | **Carrier No.** 0

Batch ID m122640

Count Method Gross Alpha Beta | **Detector Volts** 1515

Sample Qty	0 ***Sample***	**sd**	0 ***Sample***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 2/4/2013 8:32:58 PM | **Collection Date 1** 1/1/1900 | **Half Life** 0.00 ***days***

Count Ended 2/4/2013 8:38:00 PM | **Collection Date 2** 1/1/1900 | **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** | **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.079	50	10.000	9.921
sd	0.000			0.009	7.071	1.414	1.414
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.344	9,039	1,807.800	1,807.456
sd	0.000			0.019	95.074	19.015	19.015

	Net Activity dpm	LLD dpm	MDC DPM	MPC DPM	Net Concentration * DPM	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** | **MDC Method** Currie | **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Purple 8-11 - A

Addr: 8

Sample ID ICVABT-6340;A1

Repeat 9

Carrier No. 0

Batch ID M132736

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***Sample***	**sd**	0 ***Sample***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 8/5/2013 5:31:06 PM

Count Ended 8/5/2013 6:01:10 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 30.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.084	12,858	428.600	428.516
sd	0.000			0.009	113.393	3.780	3.780
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.376	4,155	138.500	138.124
sd	0.000			0.019	64.459	2.149	2.149

	Net Activity dpm	LLD dpm	MDC DPM	MPC DPM	Net Concentration * DPM	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Currie

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Purple 8-11 - A

Addr: 8

Sample ID ICVABT-6340;A3 **Repeat** 15

Carrier No. 0

Batch ID M132736

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***Sample***	**sd**	0 ***Sample***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 8/5/2013 10:44:43 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 8/5/2013 11:14:46 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 30.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.084	7,067	235.567	235.483
sd	0.000			0.009	84.065	2.802	2.802
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.376	2,643	88.100	87.724
sd	0.000			0.019	51.410	1.714	1.714

	Net Activity dpm	LLD dpm	MDC DPM	MPC DPM	Net Concentration * DPM	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Currie **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Purple 8-11 - A

Addr: 8

Sample ID ICVABT-6340;A2

Repeat 16

Carrier No. 0

Batch ID M132736

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 ***Sample*** **sd** 0 ***Sample***

Residual Wt 0 ***mg*** **sd** 0 ***mg***

Count Began 8/5/2013 11:15:18 PM

Count Ended 8/5/2013 11:45:22 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 30.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.084	9,145	304.833	304.749
sd	0.000			0.009	95.629	3.188	3.188
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.376	3,232	107.733	107.357
sd	0.000			0.019	56.851	1.895	1.895

	Net Activity dpm	LLD dpm	MDC DPM	MPC DPM	Net Concentration * DPM	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Currie

Error = .00 **x sd**

ICV is for Gross Beta
Strontium 90
and
Total Strontium

Purple Beta ICV 2013						
Detector	Low Mass Recovery	Medium Mass Recovery	High Mass Recovery	Mean Recovery	Beta Activity	2007.869 pCi
10	98.06%	98.56%	98.06%	98.23%		

Standard ID

Strontium 90
Sr-90_00018 #51512
Cert# 92352 Ref. date 11/29/12

Initial Activity:	2238.7	dpm	
Reference Date:	11/29/2012		
Current Date:	2/4/2013		(or date at which you wish to determine activity)
Elapsed Time:	67.000	days	
Half Life:	10409.625	days	
Exponential Term:	0.995548598		
Corrected Activity:	2228.734647	dpm	
Decay Activity (Sr/Y-90)	4457.469295	dpm	2007.869 pCi

ICV is for Gross Alpha

Purple Alpha ICV 2013				
	Low	Medium	High	Mean
	Mass	Mass	Mass	Recovery
Detector	Recovery	Recovery	Recovery	
10	119.66%	103.08%	86.87%	103.20%

Standard ID

Thorium-230
Th-230_00003 #6340
Cert # 84460-334 Ref. date 4/11/11

Activity 1079.73 pCi/mL

Alpha/Beta Count Results

Sample Activity Report

Purple 8-11 - C

Addr: 10

Sample ID ICVABT-51512;Beta 3 **Repeat** 21

Carrier No. 0

Batch ID m122640

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***Sample***	**sd**	0 ***Sample***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 2/4/2013 6:35:10 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 2/4/2013 6:40:12 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.058	19	3.800	3.742
sd	0.000			0.008	4.359	0.872	0.872
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.297	8,525	1,705.000	1,704.703
sd	0.000			0.017	92.331	18.466	18.466

	Net Activity dpm	LLD dpm	MDC DPM	MPC DPM	Net Concentration * DPM	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Currie **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Purple 8-11 - C

Addr: 10

Sample ID ICVABT-51512;Beta 2

Repeat 4

Carrier No. 0

Batch ID m122640

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 ***Sample*** **sd** 0 ***Sample***

Residual Wt 0 ***mg*** **sd** 0 ***mg***

Count Began 2/4/2013 6:57:08 PM

Count Ended 2/4/2013 7:02:09 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 5.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.058	17	3.400	3.342
sd	0.000			0.008	4.123	0.825	0.825
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.297	8,978	1,795.600	1,795.303
sd	0.000			0.017	94.752	18.950	18.950

	Net Activity dpm	LLD dpm	MDC DPM	MPC DPM	Net Concentration * DPM	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Currie

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Purple 8-11 - C

Addr: 10

Sample ID ICVABT-51512;Beta 1 **Repeat** 5

Carrier No. 0

Batch ID m122640

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***Sample***	**sd**	0 ***Sample***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 2/4/2013 7:02:55 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 2/4/2013 7:07:57 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.058	22	4.400	4.342
sd	0.000			0.008	4.690	0.938	0.938
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.297	9,468	1,893.600	1,893.303
sd	0.000			0.017	97.304	19.461	19.461

	Net Activity dpm	LLD dpm	MDC DPM	MPC DPM	Net Concentration * DPM	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Currie **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Purple 8-11 - C

Addr: 10

Sample ID ICVABT-6340;A3 **Repeat** 9

Carrier No. 0

Batch ID M132736

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 ***Sample*** **sd** 0 ***Sample***

Residual Wt 0 ***mg*** **sd** 0 ***mg***

Count Began 8/5/2013 5:31:16 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 8/5/2013 6:01:25 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 30.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.058	6,747	224.900	224.842
sd	0.000			0.008	82.140	2.738	2.738
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.306	2,894	96.467	96.161
sd	0.000			0.017	53.796	1.793	1.793

	Net Activity dpm	LLD dpm	MDC DPM	MPC DPM	Net Concentration * DPM	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Currie **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Purple 8-11 - C

Addr: 10

Sample ID ICVABT-6340;A2 **Repeat** 10

Carrier No. 0

Batch ID M132736

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***Sample***	**sd**	0 ***Sample***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 8/5/2013 6:03:38 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 8/5/2013 6:33:42 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 30.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.058	8,807	293.567	293.509
sd	0.000			0.008	93.846	3.128	3.128
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.306	3,382	112.733	112.427
sd	0.000			0.017	58.155	1.938	1.939

	Net Activity dpm	LLD dpm	MDC DPM	MPC DPM	Net Concentration * DPM	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Currie **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Purple 8-11 - C

Addr: 10

Sample ID ICVABT-6340;A1

Repeat 11

Carrier No. 0

Batch ID M132736

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 ***Sample*** **sd** 0 ***Sample***

Residual Wt 0 ***mg*** **sd** 0 ***mg***

Count Began 8/5/2013 7:24:39 PM

Count Ended 8/5/2013 7:54:43 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 30.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.058	12,220	407.333	407.275
sd	0.000			0.008	110.544	3.685	3.685
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.306	4,232	141.067	140.761
sd	0.000			0.017	65.054	2.168	2.169

	Net Activity dpm	LLD dpm	MDC DPM	MPC DPM	Net Concentration * DPM	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Currie

Error = .00 **x sd**

Alpha Beta Annual Calibration Verifications

Orange Alpha ACV 2014				
Detector	Low Mass Recovery	Medium Mass Recovery	High Mass Recovery	Mean Recovery
23	120.03%	98.91%	82.34%	100.43%

Standard ID

Thorium-230

Th-230_00003 #6340

Cert # 84460-334 Ref. date 4/11/11

Activity 1079.73 pCi/mL

Orange Beta ACV 2014

Detector	Low Mass Recovery	Medium Mass Recovery	High Mass Recovery	Mean Recovery
23	96.59%	93.63%	95.78%	95.33%

Beta Activity 1958.744 pCi

Standard ID

Strontium 90
Sr-90_00018 #51512
Cert# 92352 Ref. date 11/29/12

Initial Activity:	2238.7	dpm	
Reference Date:	11/29/2012		
Current Date:	2/11/2014		(or date at which you wish to determine activity)
Elapsed Time:	439.000	days	
Half Life:	10409.625	days	
Exponential Term:	0.971191359		
Corrected Activity:	2174.206097	dpm	
Decay Activity (Sr/Y-90)	4348.412193	dpm	1958.744 pCi

Alpha/Beta Count Results

Sample Activity Report

Orange 20-23 - D

Addr: 23

Sample ID ACVABT-51512;B3

Repeat 22

Carrier No. 0

Batch ID M142810

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 2/11/2014 8:38:25 PM

Count Ended 2/11/2014 8:43:27 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 5.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.056	3	0.600	0.544
sd	0.000			0.007	1.732	0.346	0.346
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.366	8,053	1,610.600	1,610.234
sd	0.000			0.019	89.739	17.948	17.948

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 20-23 - D

Addr: 23

Sample ID ACVABT-51512;B2

Repeat 23

Carrier No. 0

Batch ID M142810

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 2/11/2014 8:44:11 PM

Count Ended 2/11/2014 8:49:14 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 5.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.056	1	0.200	0.144
sd	0.000			0.007	1.000	0.200	0.200
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.366	8,251	1,650.200	1,649.834
sd	0.000			0.019	90.835	18.167	18.167

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 20-23 - D

Addr: 23

Sample ID ACVABT-51512;B1

Repeat 24

Carrier No. 0

Batch ID M142810

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 2/11/2014 8:51:48 PM

Count Ended 2/11/2014 8:56:49 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 5.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.056	6	1.200	1.144
sd	0.000			0.007	2.449	0.490	0.490
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.366	8,985	1,797.000	1,796.634
sd	0.000			0.019	94.789	18.958	18.958

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 20-23 - D

Addr: 23

Sample ID ACVABT-6340;A3 **Repeat** 22

Carrier No. 0

Batch ID M142808

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 2/12/2014 10:06:35 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 2/12/2014 10:36:38 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 30.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.056	6,273	209.100	209.044
sd	0.000			0.007	79.202	2.640	2.640
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.366	2,985	99.500	99.134
sd	0.000			0.019	54.635	1.821	1.821

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 20-23 - D

Addr: 23

Sample ID ACVABT-6340;A2

Repeat 23

Carrier No. 0

Batch ID M142808

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 2/12/2014 10:45:25 PM

Collection Date 1 1/1/1900

Half Life 0.00 ***days***

Count Ended 2/12/2014 11:15:29 PM

Collection Date 2 1/1/1900

Decay Factor 1.000

Sample Count Time 30.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.056	8,258	275.267	275.211
sd	0.000			0.007	90.874	3.029	3.029
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.366	3,291	109.700	109.334
sd	0.000			0.019	57.367	1.912	1.912

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 20-23 - D

Addr: 23

Sample ID ACVABT-6340;A1

Repeat 24

Carrier No. 0

Batch ID M142808

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 2/12/2014 11:16:31 PM

Collection Date 1 1/1/1900

Half Life 0.00 ***days***

Count Ended 2/12/2014 11:46:34 PM

Collection Date 2 1/1/1900

Decay Factor 1.000

Sample Count Time 30.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.056	11,824	394.133	394.077
sd	0.000			0.007	108.738	3.625	3.625
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.366	4,129	137.633	137.267
sd	0.000			0.019	64.257	2.142	2.142

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

ICV is for Gross Alpha

Protean Alpha ACV - 2014				
	Low	Medium	High	Mean
	Mass	Mass	Mass	Recovery
Detector	Recovery	Recovery	Recovery	
15	126.05%	105.95%	93.08%	108.36%

Standard ID

Thorium-230
Th-230_00003 #6340
Cert # 84460-334 Ref. date 4/11/11

Activity 1079.73 pCi/mL

ICV is for Gross Beta
Strontium 90
and
Total Strontium

Protean Beta ACV - 2014						
Detector	Low Mass Recovery	Medium Mass Recovery	High Mass Recovery	Mean Recovery	Beta Activity	1952.884 pCi
15	97.45%	94.63%	95.81%	95.96%		

Standard ID

Strontium 90
Sr-90_00018 #51512
Cert# 92352 Ref. date 11/29/12

Initial Activity:	2238.7	dpm	
Reference Date:	11/29/2012		
Current Date:	3/28/2014		(or date at which you wish to determine activity)
Elapsed Time:	484.000	days	
Half Life:	10409.625	days	
Exponential Term:	0.968285617		
Corrected Activity:	2167.70101	dpm	
Decay Activity (Sr/Y-90)	4335.402019	dpm	1952.884 pCi

Low Level Alpha/Beta Count Results
Sample Activity Report

Protean 12-15 - D **Address:** ***15***

Sample ID ***ACVABT-51512;B3*** **Repeat** ***14***

Batch ID ***M142810***

Count Routine ***Gross Alpha Beta*** **Detector Volts** ***1,515.0***

Sample Qty 0.000 **sd** 0.000

Residual Wt 0.000 ***mg*** **sd** 0.000 ***mg***

Count Date 3/28/2014 10:45 **Collection Date 1** **Half Life** 0.00 ***days***
Collection Date 2 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	4	0.800	0.732
sd	0.000			0.008	2.000	0.400	0.400
Alpha to Beta	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.507	7,942	1,588.400	1,587.893
sd	0.000			0.023	89.118	17.824	17.824

	Net Activity dpm	LLD dpm	Net Concentration *	MDC	Limits	% of Limits
Alpha	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			
Beta	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			

*** Note: Decay Corrected MDC Method -** **Tb = Ts < 10**
Error = 0.00 **x sd**

Low Level Alpha/Beta Count Results
Sample Activity Report

Protean 12-15 - D **Address:** ***15***

Sample ID ***ACVABT-51512;B2*** **Repeat** ***15***

Batch ID ***M142810***

Count Routine ***Gross Alpha Beta*** **Detector Volts** ***1,515.0***

Sample Qty 0.000 **sd** 0.000

Residual Wt 0.000 ***mg*** **sd** 0.000 ***mg***

Count Date 3/28/2014 10:55 **Collection Date 1** **Half Life** 0.00 ***days***
Collection Date 2 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	0	0.000	-0.068
sd	0.000			0.008	0.000	0.000	0.165
Alpha to Beta	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.507	8,191	1,638.200	1,637.693
sd	0.000			0.023	90.504	18.101	18.101

	Net Activity dpm	LLD dpm	Net Concentration *	MDC	Limits	% of Limits
Alpha	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			
Beta	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			

*** Note: Decay Corrected MDC Method -** **Tb = Ts < 10**
Error = 0.00 **x sd**

Low Level Alpha/Beta Count Results
Sample Activity Report

Protean 12-15 - D **Address:** ***15***

Sample ID ***ACVABT-51512;B1*** **Repeat** ***16***

Batch ID ***M142810***

Count Routine ***Gross Alpha Beta*** **Detector Volts** ***1,515.0***

Sample Qty 0.000 **sd** 0.000

Residual Wt 0.000 ***mg*** **sd** 0.000 ***mg***

Count Date 3/28/2014 11:14 **Collection Date 1** **Half Life** 0.00 ***days***
Collection Date 2 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	3	0.600	0.532
sd	0.000			0.008	1.732	0.346	0.347
Alpha to Beta	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.507	8,871	1,774.200	1,773.693
sd	0.000			0.023	94.186	18.837	18.837

	Net Activity dpm	LLD dpm	Net Concentration *	MDC	Limits	% of Limits
Alpha	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			
Beta	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			

*** Note: Decay Corrected MDC Method -** **Tb = Ts < 10**
Error = 0.00 **x sd**

Low Level Alpha/Beta Count Results
Sample Activity Report

Protean 12-15 - D **Address:** ***15***

Sample ID ***ACVABT-6340;A3*** **Repeat** ***14***

Batch ID ***M142808***

Count Routine ***Gross Alpha Beta*** **Detector Volts** ***1,515.0***

Sample Qty 0.000 **sd** 0.000

Residual Wt 0.000 ***mg*** **sd** 0.000 ***mg***

Count Date 3/31/2014 22:41 **Collection Date 1** **Half Life** 0.00 ***days***
Collection Date 2 **Decay Factor** 1.000

Sample Count Time 30.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	6,968	232.267	232.199
sd	0.000			0.008	83.475	2.782	2.782
Alpha to Beta	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.507	3,169	105.633	105.126
sd	0.000			0.023	56.294	1.876	1.877

	Net Activity dpm	LLD dpm	Net Concentration *	MDC	Limits	% of Limits
Alpha	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			
Beta	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			

*** Note: Decay Corrected MDC Method -** **Tb = Ts < 10**
Error = 0.00 **x sd**

Low Level Alpha/Beta Count Results
Sample Activity Report

Protean 12-15 - D **Address:** ***15***

Sample ID ***ACVABT-6340;A2*** **Repeat** ***15***

Batch ID ***M142808***

Count Routine ***Gross Alpha Beta*** **Detector Volts** ***1,515.0***

Sample Qty 0.000 **sd** 0.000

Residual Wt 0.000 ***mg*** **sd** 0.000 ***mg***

Count Date 3/31/2014 23:13 **Collection Date 1** **Half Life** 0.00 ***days***
Collection Date 2 **Decay Factor** 1.000

Sample Count Time 30.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	8,709	290.300	290.232
sd	0.000			0.008	93.322	3.111	3.111
Alpha to Beta	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.507	3,521	117.367	116.860
sd	0.000			0.023	59.338	1.978	1.978

	Net Activity dpm	LLD dpm	Net Concentration *	MDC	Limits	% of Limits
Alpha	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			
Beta	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			

*** Note: Decay Corrected MDC Method -** **Tb = Ts < 10**
Error = 0.00 **x sd**

Low Level Alpha/Beta Count Results
Sample Activity Report

Protean 12-15 - D **Address:** ***15***

Sample ID ***ACVABT-6340;A1*** **Repeat** ***16***

Batch ID ***M142808***

Count Routine ***Gross Alpha Beta*** **Detector Volts** ***1,515.0***

Sample Qty 0.000 **sd** 0.000

Residual Wt 0.000 ***mg*** **sd** 0.000 ***mg***

Count Date 3/31/2014 23:55 **Collection Date 1** **Half Life** 0.00 ***days***
Collection Date 2 **Decay Factor** 1.000

Sample Count Time 30.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	12,187	406.233	406.165
sd	0.000			0.008	110.395	3.680	3.680
Alpha to Beta	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.507	4,593	153.100	152.593
sd	0.000			0.023	67.772	2.259	2.259

	Net Activity dpm	LLD dpm	Net Concentration *	MDC	Limits	% of Limits
Alpha	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			
Beta	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			

*** Note: Decay Corrected MDC Method -** **Tb = Ts < 10**
Error = 0.00 **x sd**

ICV is for Gross Alpha

Purple Alpha ACV 2014				
	Low	Medium	High	Mean
	Mass	Mass	Mass	Recovery
Detector	Recovery	Recovery	Recovery	
8	126.61%	107.90%	94.75%	109.75%

Standard ID

Thorium-230
Th-230_00003 #6340
Cert # 84460-334 Ref. date 4/11/11

Activity 1079.73 dpm/L

ICV is for Gross Beta
Strontium 90
and
Total Strontium

Purple Beta ACV 2014						
Detector	Low Mass Recovery	Medium Mass Recovery	High Mass Recovery	Mean Recovery	Beta Activity	1955.747 pCi
8	97.81%	94.85%	96.59%	96.42%		

Standard ID

Strontium 90
Sr-90_00018 #51512
Cert# 92352 Ref. date 11/29/12

Initial Activity:	2238.7	dpm	
Reference Date:	11/29/2012		
Current Date:	3/6/2014		(or date at which you wish to determine activity)
Elapsed Time:	462.000	days	
Half Life:	10409.625	days	
Exponential Term:	0.969705114		
Corrected Activity:	2170.878839	dpm	
Decay Activity (Sr/Y-90)	4341.757678	dpm	1955.747 pCi

Alpha/Beta Count Results

Sample Activity Report

Purple 8-11 - A

Addr: 8

Sample ID ACVABT-51512;B1

Repeat 9

Carrier No. 0

Batch ID m142810

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***Sample***	**sd**	0 ***Sample***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 3/6/2014 9:41:32 PM

Count Ended 3/6/2014 9:46:34 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 5.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.085	38	7.600	7.515
sd	0.000			0.009	6.164	1.233	1.233
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.383	9,191	1,838.200	1,837.817
sd	0.000			0.020	95.870	19.174	19.174

	Net Activity dpm	LLD dpm	MDC DPM	MPC DPM	Net Concentration * DPM	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Currie

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Purple 8-11 - A

Addr: 8

Sample ID ACVABT-51512;B3

Repeat 15

Carrier No. 0

Batch ID m142810

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 ***Sample*** **sd** 0 ***Sample***

Residual Wt 0 ***mg*** **sd** 0 ***mg***

Count Began 3/6/2014 10:15:53 PM

Count Ended 3/6/2014 10:20:55 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 5.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.085	39	7.800	7.715
sd	0.000			0.009	6.245	1.249	1.249
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.383	8,182	1,636.400	1,636.017
sd	0.000			0.020	90.454	18.091	18.091

	Net Activity dpm	LLD dpm	MDC DPM	MPC DPM	Net Concentration * DPM	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Currie

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Purple 8-11 - A

Addr: 8

Sample ID ACVABT-51512;B2

Repeat 16

Carrier No. 0

Batch ID m142810

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 ***Sample*** **sd** 0 ***Sample***

Residual Wt 0 ***mg*** **sd** 0 ***mg***

Count Began 3/6/2014 10:21:28 PM

Count Ended 3/6/2014 10:26:29 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 5.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.085	38	7.600	7.515
sd	0.000			0.009	6.164	1.233	1.233
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.383	8,406	1,681.200	1,680.817
sd	0.000			0.020	91.684	18.337	18.337

	Net Activity dpm	LLD dpm	MDC DPM	MPC DPM	Net Concentration * DPM	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Currie

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Purple 8-11 - A

Addr: 8

Sample ID ACVABT-6340;A1 **Repeat** 10

Carrier No. 0

Batch ID m142808

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 ***Sample*** **sd** 0 ***Sample***

Residual Wt 0 ***mg*** **sd** 0 ***mg***

Count Began 3/11/2014 12:30:34 AM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 3/11/2014 1:00:38 AM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 30.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.085	13,262	442.067	441.982
sd	0.000			0.009	115.161	3.839	3.839
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.383	4,146	138.200	137.817
sd	0.000			0.020	64.389	2.146	2.146

	Net Activity dpm	LLD dpm	MDC DPM	MPC DPM	Net Concentration * DPM	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Currie **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Purple 8-11 - A

Addr: 8

Sample ID ACVABT-6340;A3

Repeat 17

Carrier No. 0

Batch ID m142808

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 ***Sample*** **sd** 0 ***Sample***

Residual Wt 0 ***mg*** **sd** 0 ***mg***

Count Began 3/11/2014 9:29:15 PM

Count Ended 3/11/2014 9:59:18 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 30.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.085	7,764	258.800	258.715
sd	0.000			0.009	88.114	2.937	2.937
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.383	2,764	92.133	91.750
sd	0.000			0.020	52.574	1.752	1.753

	Net Activity dpm	LLD dpm	MDC DPM	MPC DPM	Net Concentration * DPM	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

Beta	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Currie

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Purple 8-11 - A

Addr: 8

Sample ID ACVABT-6340;A2

Repeat 17

Carrier No. 0

Batch ID m142808

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***Sample***	**sd**	0 ***Sample***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 3/11/2014 10:29:04 PM

Count Ended 3/11/2014 10:59:07 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 30.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.085	9,646	321.533	321.448
sd	0.000			0.009	98.214	3.274	3.274
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.383	3,221	107.367	106.984
sd	0.000			0.020	56.754	1.892	1.892

	Net Activity dpm	LLD dpm	MDC DPM	MPC DPM	Net Concentration * DPM	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Currie

Error = .00 **x sd**

ICV is for Gross Alpha

Purple Alpha ACV 2014				
	Low	Medium	High	Mean
	Mass	Mass	Mass	Recovery
Detector	Recovery	Recovery	Recovery	
10	126.61%	110.31%	93.82%	110.24%

Standard ID

Thorium-230
Th-230_00003 #6340
Cert # 84460-334 Ref. date 4/11/11

Activity 1079.73 dpm/L

ICV is for Gross Beta
Strontium 90
and
Total Strontium

Purple Beta ACV 2014						
Detector	Low Mass Recovery	Medium Mass Recovery	High Mass Recovery	Mean Recovery	Beta Activity	1955.747 pCi
10	98.33%	96.33%	95.97%	96.88%		

Standard ID

Strontium 90
Sr-90_00018 #51512
Cert# 92352 Ref. date 11/29/12

Initial Activity:	2238.7	dpm	
Reference Date:	11/29/2012		
Current Date:	3/6/2014		(or date at which you wish to determine activity)
Elapsed Time:	462.000	days	
Half Life:	10409.625	days	
Exponential Term:	0.969705114		
Corrected Activity:	2170.878839	dpm	
Decay Activity (Sr/Y-90)	4341.757678	dpm	1955.747 pCi

Alpha/Beta Count Results

Sample Activity Report

Purple 8-11 - C

Addr: 10

Sample ID ACVABT-51512;B3

Repeat 9

Carrier No. 0

Batch ID m142810

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***Sample***	**sd**	0 ***Sample***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 3/6/2014 9:41:42 PM

Count Ended 3/6/2014 9:46:44 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 5.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.091	12	2.400	2.309
sd	0.000			0.010	3.464	0.693	0.693
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.376	8,129	1,625.800	1,625.424
sd	0.000			0.019	90.161	18.032	18.032

	Net Activity dpm	LLD dpm	MDC DPM	MPC DPM	Net Concentration * DPM	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Currie

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Purple 8-11 - C

Addr: 10

Sample ID ACVABT-51512;B2

Repeat 10

Carrier No. 0

Batch ID m142810

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***Sample***	**sd**	0 ***Sample***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 3/6/2014 9:47:16 PM

Count Ended 3/6/2014 9:52:17 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 5.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.091	12	2.400	2.309
sd	0.000			0.010	3.464	0.693	0.693
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.376	8,546	1,709.200	1,708.824
sd	0.000			0.019	92.445	18.489	18.489

	Net Activity dpm	LLD dpm	MDC DPM	MPC DPM	Net Concentration * DPM	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Currie

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Purple 8-11 - C

Addr: 10

Sample ID ACVABT-51512;B1

Repeat 11

Carrier No. 0

Batch ID m142810

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***Sample***	**sd**	0 ***Sample***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 3/6/2014 9:52:54 PM

Count Ended 3/6/2014 9:57:56 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 5.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.091	20	4.000	3.909
sd	0.000			0.010	4.472	0.894	0.894
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.376	9,247	1,849.400	1,849.024
sd	0.000			0.019	96.161	19.232	19.232

	Net Activity dpm	LLD dpm	MDC DPM	MPC DPM	Net Concentration * DPM	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Currie

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Purple 8-11 - C

Addr: 10

Sample ID ACVABT-6340;A3

Repeat 11

Carrier No. 0

Batch ID m142808

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 ***Sample*** **sd** 0 ***Sample***

Residual Wt 0 ***mg*** **sd** 0 ***mg***

Count Began 3/11/2014 12:30:42 AM

Count Ended 3/11/2014 1:00:46 AM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 30.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.091	7,284	242.800	242.709
sd	0.000			0.010	85.346	2.845	2.845
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.376	2,774	92.467	92.091
sd	0.000			0.019	52.669	1.756	1.756

	Net Activity dpm	LLD dpm	MDC DPM	MPC DPM	Net Concentration * DPM	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

Beta	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Currie

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Purple 8-11 - C

Addr: 10

Sample ID ACVABT-6340;A2

Repeat 11

Carrier No. 0

Batch ID m142808

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***Sample***	**sd**	0 ***Sample***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 3/11/2014 1:09:35 AM

Count Ended 3/11/2014 1:39:39 AM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 30.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.091	9,425	314.167	314.076
sd	0.000			0.010	97.082	3.236	3.236
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.376	3,234	107.800	107.424
sd	0.000			0.019	56.868	1.896	1.896

	Net Activity dpm	LLD dpm	MDC DPM	MPC DPM	Net Concentration * DPM	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

Beta	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Currie

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Purple 8-11 - C

Addr: 10

Sample ID ACVABT-6340;A1

Repeat 12

Carrier No. 0

Batch ID M142808

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 ***Sample*** **sd** 0 ***Sample***

Residual Wt 0 ***mg*** **sd** 0 ***mg***

Count Began 3/11/2014 2:01:16 AM

Count Ended 3/11/2014 2:31:20 AM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 30.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.091	12,921	430.700	430.609
sd	0.000			0.010	113.671	3.789	3.789
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.376	4,403	146.767	146.391
sd	0.000			0.019	66.355	2.212	2.212

	Net Activity dpm	LLD dpm	MDC DPM	MPC DPM	Net Concentration * DPM	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	0.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Currie

Error = .00 **x sd**

Monthly Backgrounds

Alpha/Beta Count Results

Source Count Report

Orange 20-23 - D

Addr: 23

Sample ID ICB
ICB;Monthly Background Check

Batch ID ICB;Monthly Background

Repeat 759
Carrier No. 0
Detector Volts 1515

Residual Wt 0 ***mg***
Count Began 10/3/2014 4:37:29 PM
Count Ended 10/4/2014 9:18:26 AM
Sample Count Time 1,000.00 ***mins***

Calibration Date 8/4/2012 9:20:16 AM
Backgrounds From
Background Count Time 0.00

Half Life 0.00 ***Years***
Decay Factor 1.000

	Gross counts	Gross cpm	Background cpm	Net cpm
Alpha	65	0.065	0.000	0.065
sd	8.062	0.008	0.000	0.008
Beta	410	0.410	0.000	0.410
sd	20.248	0.020	0.000	0.020

	Uncorrected DPM	Corrected DPM	Corrected dpm	Efficiency %
Alpha	0.000	0.000	0.000	0.000
sd	0.000	0.000	0.000	0.000
Alpha to Beta				0.000
sd				0.000
Beta	0.000	0.000	0.000	0.000
sd	0.000	0.000	0.000	0.000

Low Level Alpha/Beta Count Results
Sample Activity Report

Protean 4-7 - B **Address:** *5*

Sample ID ***ICB; 05*** **Repeat** ***8***

Batch ID ***99140038***

Count Routine ***Gross Alpha Beta*** **Detector Volts** ***1,515.0***

Sample Qty 0.000 **sd** 0.000

Residual Wt 0.000 ***mg*** **sd** 0.000 ***mg***

Count Date 10/3/2014 16:46 **Collection Date 1** **Half Life** 0.00 ***days***
Collection Date 2 **Decay Factor** 1.000

Sample Count Time 1,000.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.066	70	0.070	0.004
sd	0.000			0.008	8.367	0.008	0.012
Alpha to Beta	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.430	422	0.422	-0.008
sd	0.000			0.021	20.543	0.021	0.029

	Net Activity dpm	LLD dpm	Net Concentration *	MDC	Limits	% of Limits
Alpha	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			
Beta	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			

*** Note: Decay Corrected MDC Method -** **Tb = Ts < 10**
Error = 0.00 **x sd**

Low Level Alpha/Beta Count Results
Sample Activity Report

Protean 4-7 - C **Address:** *6*

Sample ID *ICB; 06* **Repeat** *9*

Batch ID *99140038*

Count Routine *Gross Alpha Beta* **Detector Volts** *1,515.0*

Sample Qty 0.000 **sd** 0.000

Residual Wt 0.000 *mg* **sd** 0.000 *mg*

Count Date 10/3/2014 16:46 **Collection Date 1** **Half Life** 0.00 *days*
Collection Date 2 **Decay Factor** 1.000

Sample Count Time 1,000.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.101	108	0.108	0.007
sd	0.000			0.010	10.392	0.010	0.014
Alpha to Beta	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.527	497	0.497	-0.030
sd	0.000			0.023	22.293	0.022	0.033

	Net Activity dpm	LLD dpm	Net Concentration *	MDC	Limits	% of Limits
Alpha	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			
Beta	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			

*** Note: Decay Corrected MDC Method -** **Tb = Ts < 10**
Error = 0.00 **x sd**

Low Level Alpha/Beta Count Results
Sample Activity Report

Protean 12-15 - D **Address:** ***15***

Sample ID ***ICB; 15*** **Repeat** ***8***

Batch ID ***99140038***

Count Routine ***Gross Alpha Beta*** **Detector Volts** ***1,515.0***

Sample Qty 0.000 **sd** 0.000

Residual Wt 0.000 ***mg*** **sd** 0.000 ***mg***

Count Date 10/3/2014 16:47 **Collection Date 1** **Half Life** 0.00 ***days***
Collection Date 2 **Decay Factor** 1.000

Sample Count Time 1,000.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.095	74	0.074	-0.021
sd	0.000			0.010	8.602	0.009	0.015
Alpha to Beta	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.536	452	0.452	-0.084
sd	0.000			0.023	21.260	0.021	0.034

	Net Activity dpm	LLD dpm	Net Concentration *	MDC	Limits	% of Limits
Alpha	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			
Beta	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			

*** Note: Decay Corrected MDC Method -** **Tb = Ts < 10**
Error = 0.00 **x sd**

Alpha/Beta Count Results

Source Count Report

Purple 8-11 - A

Addr: 8

Sample ID ICB
ICB;Monthly Background

Batch ID ICB;Monthly Background

Repeat 676
Carrier No. 0
Detector Volts 1515

Residual Wt 0 ***mg***
Count Began 10/3/2014 4:52:23 PM
Count Ended 10/4/2014 9:33:23 AM
Sample Count Time 1,000.00 ***mins***

Calibration Date 8/3/2012 9:00:25 PM
Backgrounds From
Background Count Time 0.00

Half Life 0.00 ***Years***
Decay Factor 1.000

	Gross counts	Gross cpm	Background cpm	Net cpm
Alpha	119	0.119	0.000	0.119
sd	10.909	0.011	0.000	0.011
Beta	381	0.381	0.000	0.381
sd	19.519	0.020	0.000	0.020

	Uncorrected DPM	Corrected DPM	Corrected dpm	Efficiency %
Alpha	0.000	0.000	0.000	0.000
sd	0.000	0.000	0.000	0.000
Alpha to Beta				0.000
sd				0.000
Beta	0.000	0.000	0.000	0.000
sd	0.000	0.000	0.000	0.000

Alpha/Beta Count Results

Source Count Report

Purple 8-11 - C

Addr: 10

Sample ID ICB
ICB;Monthly Background

Batch ID ICB;Monthly Background

Repeat 678
Carrier No. 0
Detector Volts 1515

Residual Wt 0 *mg*
Count Began 10/3/2014 4:52:48 PM
Count Ended 10/4/2014 9:33:47 AM
Sample Count Time 1,000.00 *mins*

Calibration Date 8/3/2012 9:00:25 PM
Backgrounds From
Background Count Time 0.00

Half Life 0.00 *Years*
Decay Factor 1.000

	Gross counts	Gross cpm	Background cpm	Net cpm
Alpha	102	0.102	0.000	0.102
sd	10.100	0.010	0.000	0.010
Beta	374	0.374	0.000	0.374
sd	19.339	0.019	0.000	0.019

	Uncorrected DPM	Corrected DPM	Corrected dpm	Efficiency %
Alpha	0.000	0.000	0.000	0.000
sd	0.000	0.000	0.000	0.000
Alpha to Beta				0.000
sd				0.000
Beta	0.000	0.000	0.000	0.000
sd	0.000	0.000	0.000	0.000

Alpha/Beta Count Results

Source Count Report

Purple 20-23 - B

Addr: 21

Sample ID ICB
ICB;Monthly Background

Batch ID ICB;Monthly Background

Repeat 685
Carrier No. 0

Detector Volts 1515

Residual Wt 0 ***mg***
Count Began 10/3/2014 4:54:27 PM
Count Ended 10/4/2014 9:35:26 AM

Calibration Date 8/3/2012 9:00:25 PM
Backgrounds From

Half Life 0.00 ***Years***
Decay Factor 1.000

Sample Count Time 1,000.00 ***mins***
Background Count Time 0.00

	Gross counts	Gross cpm	Background cpm	Net cpm
Alpha	141	0.141	0.000	0.141
sd	11.874	0.012	0.000	0.012
Beta	358	0.358	0.000	0.358
sd	18.921	0.019	0.000	0.019

	Uncorrected DPM	Corrected DPM	Corrected dpm	Efficiency %
Alpha	0.000	0.000	0.000	0.000
sd	0.000	0.000	0.000	0.000
Alpha to Beta				0.000
sd				0.000
Beta	0.000	0.000	0.000	0.000
sd	0.000	0.000	0.000	0.000

Run Logs

Gas Flow Proportional Counter Run Log

Detector: Orange23

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
01/23/13 12:20	5	ICABT 160-63228/12		63228			JLW
01/23/13 12:30	5	ICABT 160-63228/13		63228			JLW
01/23/13 12:38	5	ICABT 160-63228/14		63228			JLW
01/23/13 12:46	5	ICABT 160-63228/15		63228			JLW
01/23/13 12:53	5	ICABT 160-63228/16		63228			JLW
01/23/13 13:00	5	ICABT 160-63228/17		63228			JLW
01/23/13 13:07	5	ICABT 160-63228/18		63228			JLW
01/23/13 13:14	5	ICABT 160-63228/19		63228			JLW
01/24/13 22:51	5	ICVABT 160-63228/20		63228			JLW
01/24/13 23:01	5	ICVABT 160-63228/21		63228			JLW
01/24/13 23:07	5	ICVABT 160-63228/22		63228			JLW
07/24/13 19:27	50	ICABT 160-63228/1		63228			JLW
07/24/13 20:20	50	ICABT 160-63228/2		63228			JLW
07/24/13 21:32	50	ICABT 160-63228/3		63228			JLW
07/24/13 22:35	50	ICABT 160-63228/4		63228			JLW
07/24/13 23:30	50	ICABT 160-63228/5		63228			JLW
07/25/13 07:05	50	ICABT 160-63228/6		63228			JLW
07/25/13 08:56	50	ICABT 160-63228/7		63228			JLW
07/25/13 09:50	50	ICABT 160-63228/8		63228			JLW
07/25/13 21:23	30	ICVABT 160-63228/9		63228			JLW
07/25/13 22:23	30	ICVABT 160-63228/10		63228			JLW
07/26/13 00:06	30	ICVABT 160-63228/11		63228			JLW
02/11/14 20:38	5	ACVABT 160-106038/1		106038			LES
02/11/14 20:44	5	ACVABT 160-106038/2		106038			LES
02/11/14 20:51	5	ACVABT 160-106038/3		106038			LES
02/12/14 22:06	30	ACVABT 160-106038/4		106038			LES
02/12/14 22:45	30	ACVABT 160-106038/5		106038			LES
02/12/14 23:16	30	ACVABT 160-106038/6		106038			LES
10/03/14 16:37	1000	ICB 160-147400/24		147400			PS
11/04/14 00:23	2	CCVB 160-154081/85		154081			AS1
11/04/14 00:28	2	CCVA 160-154081/63		154081			AS1
11/04/14 00:36	200	CCB 160-154081/39		154081			AS1
11/04/14 06:42	200	ZZZZZ		154081			
11/04/14 11:38	200	ZZZZZ		154081			
11/04/14 18:14	200	MB 160-153948/1-A		154081	153948	9310	AS1

Detector: Protean5

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
03/27/13 00:24	1.01	ICABT 160-80793/12		80793			LES
03/27/13 00:33	1.01	ICABT 160-80793/13		80793			LES
03/27/13 00:51	1.01	ICABT 160-80793/14		80793			LES
03/27/13 01:06	1.01	ZZZZZ		80793			
03/27/13 01:09	1.01	ICABT 160-80793/16		80793			LES
03/27/13 02:15	1.01	ICABT 160-80793/17		80793			LES
03/27/13 08:50	1.01	ICABT 160-80793/18		80793			LES
03/27/13 08:55	1.01	ICABT 160-80793/19		80793			LES
03/27/13 09:20	1.01	ICABT 160-80793/20		80793			LES
03/28/13 12:32	5	ICVABT 160-80793/21		80793			LES
03/28/13 12:46	5	ICVABT 160-80793/22		80793			LES
03/28/13 13:04	5	ICVABT 160-80793/23		80793			LES
08/12/13 19:25	50	ICABT 160-80793/1		80793			LES
08/12/13 20:56	50	ICABT 160-80793/2		80793			LES

Gas Flow Proportional Counter Run Log

Detector: Protean5 (Continued)

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
08/12/13 22:08	50	ICABT 160-80793/3		80793			LES
08/12/13 23:00	50	ICABT 160-80793/4		80793			LES
08/13/13 10:16	50	ICABT 160-80793/5		80793			LES
08/13/13 18:35	50	ICABT 160-80793/6		80793			LES
08/13/13 19:42	50	ICABT 160-80793/7		80793			LES
08/14/13 20:56	50	ICABT 160-80793/8		80793			LES
08/18/13 21:56	30	ICVABT 160-80793/9		80793			LES
08/18/13 22:32	30	ICVABT 160-80793/10		80793			LES
08/18/13 23:03	30	ICVABT 160-80793/11		80793			LES
03/28/14 08:43	5	ACVABT 160-114315/1		114315			PS
03/28/14 08:51	5	ACVABT 160-114315/2		114315			PS
03/28/14 09:20	5	ACVABT 160-114315/3		114315			PS
03/30/14 23:39	30	ACVABT 160-114315/4		114315			PS
03/31/14 01:02	30	ACVABT 160-114315/5		114315			PS
03/31/14 02:27	30	ACVABT 160-114315/6		114315			PS
10/03/14 16:46	1000	ICB 160-147399/6		147399			PS
11/05/14 00:55	2	CCVA 160-154305/25		154305			AS1
11/05/14 00:59	2	CCVB 160-154305/35		154305			AS1
11/05/14 01:06	200	CCB 160-154305/10		154305			AS1
11/05/14 07:20	200	ZZZZZ		154305			
11/05/14 12:18	200	ZZZZZ		154305			
11/05/14 18:01	200	ZZZZZ		154305			

Detector: Protean6

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
03/27/13 00:24	1.01	ICABT 160-80794/12		80794			LES
03/27/13 00:33	1.01	ICABT 160-80794/13		80794			LES
03/27/13 00:51	1.01	ICABT 160-80794/14		80794			LES
03/27/13 01:06	1.01	ZZZZZ		80794			
03/27/13 01:09	1.01	ICABT 160-80794/16		80794			LES
03/27/13 02:15	1.01	ICABT 160-80794/17		80794			LES
03/27/13 08:50	1.01	ICABT 160-80794/18		80794			LES
03/27/13 08:56	1.01	ICABT 160-80794/19		80794			LES
03/27/13 09:20	1.01	ICABT 160-80794/20		80794			LES
03/28/13 12:46	5	ICVABT 160-80794/21		80794			LES
03/28/13 13:04	5	ICVABT 160-80794/22		80794			LES
03/28/13 13:21	5	ICVABT 160-80794/23		80794			LES
08/12/13 19:25	50	ICABT 160-80794/1		80794			LES
08/12/13 20:56	50	ICABT 160-80794/2		80794			LES
08/12/13 22:08	50	ICABT 160-80794/3		80794			LES
08/12/13 23:00	50	ICABT 160-80794/4		80794			LES
08/13/13 10:16	50	ICABT 160-80794/5		80794			LES
08/13/13 18:35	50	ICABT 160-80794/6		80794			LES
08/13/13 19:42	50	ICABT 160-80794/7		80794			LES
08/13/13 23:04	50	ICABT 160-80794/8		80794			LES
08/18/13 22:32	30	ICVABT 160-80794/9		80794			LES
08/18/13 23:03	30	ICVABT 160-80794/10		80794			LES
08/19/13 19:19	30	ICVABT 160-80794/11		80794			LES
03/28/14 08:44	5	ACVABT 160-114316/1		114316			PS
03/28/14 08:53	5	ACVABT 160-114316/2		114316			PS
03/28/14 09:00	5	ACVABT 160-114316/3		114316			PS
03/31/14 01:02	30	ACVABT 160-114316/4		114316			PS

Gas Flow Proportional Counter Run Log

Detector: Protean6 (Continued)

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
03/31/14 02:27	30	ACVABT 160-114316/5		114316			PS
03/31/14 03:05	30	ACVABT 160-114316/6		114316			PS
10/03/14 16:46	1000	ICB 160-147399/7		147399			PS
11/05/14 00:55	2	CCVA 160-154305/27		154305			AS1
11/05/14 00:59	2	CCVB 160-154305/37		154305			AS1
11/05/14 01:06	200	CCB 160-154305/11		154305			AS1
11/05/14 07:20	200	ZZZZZ		154305			
11/05/14 12:18	200	ZZZZZ		154305			
11/05/14 18:01	200	ZZZZZ		154305			
11/06/14 00:04	2	CCVA 160-154743/31		154743			RTM
11/06/14 00:08	2	CCVB 160-154743/42		154743			RTM
11/06/14 00:16	200	CCB 160-154743/11		154743			RTM
11/06/14 07:35	200	ZZZZZ		154743			
11/06/14 12:07	400	ZZZZZ		154743			
11/06/14 18:54	200	ZZZZZ		154743			

Detector: Protean15

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
03/27/13 09:26	1.01	ICABT 160-80803/13		80803			LES
03/27/13 09:35	1.01	ICABT 160-80803/14		80803			LES
03/27/13 09:48	1.01	ICABT 160-80803/15		80803			LES
03/27/13 09:55	1.01	ICABT 160-80803/16		80803			LES
03/27/13 10:05	1.01	ICABT 160-80803/17		80803			LES
03/27/13 10:13	1.01	ICABT 160-80803/18		80803			LES
03/27/13 10:20	1.01	ICABT 160-80803/19		80803			LES
03/27/13 10:27	1.01	ICABT 160-80803/20		80803			LES
03/28/13 23:53	5	ICVABT 160-80803/21		80803			LES
03/28/13 23:59	5	ICVABT 160-80803/22		80803			LES
03/29/13 00:05	5	ICVABT 160-80803/23		80803			LES
08/09/13 13:35	50	ZZZZZ		80803			
08/09/13 14:52	50	ICABT 160-80803/2		80803			LES
08/09/13 16:37	50	ICABT 160-80803/3		80803			LES
08/09/13 17:43	50	ICABT 160-80803/4		80803			LES
08/11/13 20:22	50	ICABT 160-80803/5		80803			LES
08/11/13 22:18	50	ICABT 160-80803/6		80803			LES
08/11/13 23:10	50	ICABT 160-80803/7		80803			LES
08/12/13 10:46	50	ICABT 160-80803/8		80803			LES
08/12/13 17:54	50	ICABT 160-80803/9		80803			LES
08/18/13 17:31	30	ICVABT 160-80803/10		80803			LES
08/18/13 18:08	30	ICVABT 160-80803/11		80803			LES
08/18/13 18:45	30	ICVABT 160-80803/12		80803			LES
03/28/14 10:45	5	ACVABT 160-114325/1		114325			PS
03/28/14 10:55	5	ACVABT 160-114325/2		114325			PS
03/28/14 11:14	5	ACVABT 160-114325/3		114325			PS
03/31/14 22:41	30	ACVABT 160-114325/4		114325			PS
03/31/14 23:13	30	ACVABT 160-114325/5		114325			PS
03/31/14 23:55	30	ACVABT 160-114325/6		114325			PS
10/03/14 16:47	1000	ICB 160-147399/16		147399			PS
11/05/14 00:56	2	CCVB 160-154305/40		154305			AS1
11/05/14 01:00	2	CCVA 160-154305/30		154305			AS1
11/05/14 01:07	200	CCB 160-154305/18		154305			AS1
11/05/14 07:21	200	160-9071-1	SMC-09-20141027-21	154305	153948	9310	AS1

Gas Flow Proportional Counter Run Log

Detector: Purple8

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
02/03/13 17:22	5	ICABT 160-65573/22		65573			PS
02/03/13 17:29	5	ICABT 160-65573/15		65573			PS
02/03/13 17:43	5	ICABT 160-65573/16		65573			PS
02/03/13 17:51	5	ICABT 160-65573/17		65573			PS
02/03/13 18:07	5	ICABT 160-65573/18		65573			PS
02/03/13 18:19	5	ICABT 160-65573/19		65573			PS
02/03/13 18:32	5	ICABT 160-65573/20		65573			PS
02/03/13 18:51	5	ICABT 160-65573/21		65573			PS
02/04/13 18:34	5	ICVABT 160-65573/14		65573			PS
02/04/13 20:23	5	ICVABT 160-65573/12		65573			PS
02/04/13 20:32	5	ICVABT 160-65573/13		65573			PS
07/30/13 14:18	50	ICABT 160-65573/11		65573			PS
07/30/13 15:34	50	ICABT 160-65573/4		65573			PS
07/30/13 16:40	50	ICABT 160-65573/5		65573			PS
07/30/13 17:36	50	ICABT 160-65573/6		65573			PS
07/30/13 18:35	50	ICABT 160-65573/7		65573			PS
07/30/13 19:48	50	ICABT 160-65573/8		65573			PS
07/30/13 21:06	50	ICABT 160-65573/9		65573			PS
07/30/13 21:59	50	ICABT 160-65573/10		65573			PS
08/05/13 17:31	30	ICVABT 160-65573/3		65573			PS
08/05/13 22:44	30	ICVABT 160-65573/1		65573			PS
08/05/13 23:15	30	ICVABT 160-65573/2		65573			PS
03/06/14 21:41	5	ACVABT 160-110987/1		110987			PS
03/06/14 22:15	5	ACVABT 160-110987/2		110987			PS
03/06/14 22:21	5	ACVABT 160-110987/3		110987			PS
03/11/14 00:30	30	ACVABT 160-110987/4		110987			PS
03/11/14 21:29	30	ACVABT 160-110987/5		110987			PS
03/11/14 22:29	30	ACVABT 160-110987/6		110987			PS
10/03/14 16:52	1000	ICB 160-147401/13		147401			PS
11/04/14 00:00	2	CCVB 160-154079/70		154079			AS1
11/04/14 00:04	2	CCVA 160-154079/49		154079			AS1
11/04/14 00:16	200	CCB 160-154079/29		154079			
11/04/14 06:21	200	CCB 160-154079/30		154079			AS1
11/04/14 11:49	200	ZZZZZ		154079			
11/04/14 18:15	200	LCS 160-153948/2-A		154079	153948	9310	AS1

Detector: Purple10

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
02/03/13 17:22	5	ICABT 160-65575/20		65575			PS
02/03/13 17:29	5	ICABT 160-65575/21		65575			PS
02/03/13 17:43	5	ICABT 160-65575/22		65575			PS
02/03/13 17:51	5	ICABT 160-65575/15		65575			PS
02/03/13 18:07	5	ICABT 160-65575/16		65575			PS
02/03/13 18:19	5	ICABT 160-65575/17		65575			PS
02/03/13 18:32	5	ICABT 160-65575/18		65575			PS
02/03/13 18:51	5	ICABT 160-65575/19		65575			PS
02/04/13 18:35	5	ICVABT 160-65575/12		65575			PS
02/04/13 18:57	5	ICVABT 160-65575/13		65575			PS
02/04/13 19:02	5	ICVABT 160-65575/14		65575			PS
07/30/13 14:18	50	ICABT 160-65575/9		65575			PS
07/30/13 15:34	50	ICABT 160-65575/10		65575			PS
07/30/13 16:40	50	ICABT 160-65575/11		65575			PS

Gas Flow Proportional Counter Run Log

Detector: Purple10 (Continued)

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
07/30/13 17:36	50	ICABT 160-65575/4		65575			PS
07/30/13 18:35	50	ICABT 160-65575/5		65575			PS
07/30/13 19:48	50	ICABT 160-65575/6		65575			PS
07/30/13 21:07	50	ICABT 160-65575/7		65575			PS
07/30/13 21:59	50	ICABT 160-65575/8		65575			PS
08/05/13 17:31	30	ICVABT 160-65575/1		65575			PS
08/05/13 18:03	30	ICVABT 160-65575/2		65575			PS
08/05/13 19:24	30	ICVABT 160-65575/3		65575			PS
03/06/14 21:41	5	ACVABT 160-110988/1		110988			PS
03/06/14 21:47	5	ACVABT 160-110988/2		110988			PS
03/06/14 21:52	5	ACVABT 160-110988/3		110988			PS
03/11/14 00:30	30	ACVABT 160-110988/4		110988			PS
03/11/14 01:09	30	ACVABT 160-110988/5		110988			PS
03/11/14 02:01	30	ACVABT 160-110988/6		110988			PS
10/03/14 16:52	1000	ICB 160-147401/15		147401			PS
11/04/14 00:00	2	CCVB 160-154079/75		154079			AS1
11/04/14 00:04	2	CCVA 160-154079/54		154079			AS1
11/04/14 00:16	200	CCB 160-154079/33		154079			AS1
11/04/14 06:41	200	ZZZZZ		154079			
11/04/14 11:49	200	ZZZZZ		154079			
11/04/14 18:15	200	LCSB 160-153948/3-A		154079	153948	9310	AS1

Detector: Purple21

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
02/03/13 19:05	5	ICABT 160-65587/17		65587			PS
02/03/13 19:14	5	ICABT 160-65587/18		65587			PS
02/03/13 19:21	5	ICABT 160-65587/19		65587			PS
02/03/13 19:53	5	ICABT 160-65587/20		65587			PS
02/03/13 20:01	5	ICABT 160-65587/21		65587			PS
02/03/13 20:08	5	ICABT 160-65587/22		65587			PS
02/03/13 20:18	5	ICABT 160-65587/15		65587			PS
02/03/13 20:25	5	ICABT 160-65587/16		65587			PS
02/04/13 21:06	5	ICVABT 160-65587/12		65587			PS
02/04/13 21:12	5	ICVABT 160-65587/13		65587			PS
02/04/13 21:22	5	ICVABT 160-65587/14		65587			PS
07/31/13 08:22	50	ICABT 160-65587/6		65587			PS
07/31/13 10:44	50	ICABT 160-65587/7		65587			PS
07/31/13 18:13	50	ICABT 160-65587/8		65587			PS
07/31/13 19:30	50	ICABT 160-65587/9		65587			PS
07/31/13 20:31	50	ICABT 160-65587/10		65587			PS
07/31/13 21:26	50	ICABT 160-65587/11		65587			PS
07/31/13 22:20	50	ICABT 160-65587/4		65587			PS
08/01/13 00:51	50	ICABT 160-65587/5		65587			PS
08/06/13 13:44	30	ICVABT 160-65587/1		65587			PS
08/06/13 15:50	30	ICVABT 160-65587/2		65587			PS
08/06/13 17:57	30	ICVABT 160-65587/3		65587			PS
03/06/14 22:50	5	ACVABT 160-110999/1		110999			PS
03/06/14 22:55	5	ACVABT 160-110999/2		110999			PS
03/06/14 23:01	5	ACVABT 160-110999/3		110999			PS
03/12/14 00:11	30	ACVABT 160-110999/4		110999			PS
03/12/14 00:42	30	ACVABT 160-110999/5		110999			PS
03/12/14 01:53	30	ACVABT 160-110999/6		110999			PS

Gas Flow Proportional Counter Run Log

Detector: Purple21 (Continued)

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
10/03/14 16:54	1000	ICB 160-147401/21		147401			PS
11/04/14 00:07	2	CCVA 160-154079/64		154079			AS1
11/04/14 00:10	2	CCVB 160-154079/83		154079			AS1
11/04/14 00:17	200	CCB 160-154079/45		154079			AS1
11/04/14 06:41	200	ZZZZZ		154079			
11/04/14 18:16	200	ZZZZZ		154079			

Shipping and Receiving Documents

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
Phone (314) 298-8566 Fax (314) 298-8757

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Shannon Boesch	Lab PM: Gish, Erika K	Carrier Tracking No(s):	COC No: 160-1936-959.3
Client Contact: Mrs. Kristie Warr	Phone: (512) 633-9522	E-Mail: erika.gish@testamericainc.com		Page: Page 3 of 3
Company: Weston Solutions, Inc.				Job #:
Address: 5599 San Felipe Suite 700	Due Date Requested:			
City: Houston	TAT Requested (days):			
State, Zip: TX, 77056				
Phone: 713-985-6636(Tel) 713-985-6703(Fax)	PO #: Purchase Order Requested			
Email: k.warr@westonsolutions.com	WO #: 20406.012.019.0833.03			
Project Name: START Site in New Mexico	Project #: 16003713			
Site: Grants, NM	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2SO3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - ph 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	A01R_U-Iso Uranium	A01R_Th-Iso Thorium	9315_Ra226-Ra226	9320_Ra228-Ra228	310.1, 150.1, 160.1_Calcd, 300	6010C, 7470A-Metals+Hg	9310-Gross Alpha/Beta	6010C-Dissolved Metals+Hg					Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	D	D	D	N	D	D	N						
SMC9A-20141027-21	10/27/14	1055	G	W	N	N	X	X	X	X	X	X	X	X					8	500D/o/p
																				3X500D HNO3
																				2XLD HNO3
																				250D HNO3
																				250D filtered metals

160-9071 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
S. Boesch	10/27/14 1420	Weston	[signature]	10/28/14 0910	TA STL

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Gish, Erika

From: Warr (Kettler), Kristie [K.Warr@WestonSolutions.com]
Sent: Thursday, November 13, 2014 1:37 PM
To: Gish, Erika
Subject: RE: TestAmerica confirmation files from 160-9071-2 START Site in New Mexico

Erika,

I need to make a sample ID revision. The sample in this SDG is labeled as

SMC9A-20141027-21

The correct ID should be

SMC-09-20141027-21

Thanks!
Kristie

From: Gish, Erika [mailto:erika.gish@testamericainc.com]
Sent: Tuesday, October 28, 2014 3:51 PM
To: Warr (Kettler), Kristie
Subject: TestAmerica confirmation files from 160-9071-2 START Site in New Mexico

Hello,

Attached please find the confirmation files for job 160-9071-2; START Site in New Mexico

Please feel free to contact me if you have any questions.

Thank you.

Please let us know if we met your expectations by rating the service you received from TestAmerica on this project by visiting our website at: Project Feedback

ERIKA K GISH
Project Manager II

TestAmerica St. Louis
THE LEADER IN ENVIRONMENTAL TESTING

Tel: 314.298.8566
www.testamericainc.com

Reference: [022110]
Attachments: 2

CONFIDENTIALITY: This email and attachments may contain information which is confidential and proprietary. Disclosure or use of any such confidential or proprietary information without the written permission of Weston Solutions, Inc. is strictly prohibited. If you received this email in error, please notify the sender by return e-mail and delete this email from your system. Thank you.

Login Sample Receipt Checklist

Client: Weston Solutions, Inc.

Job Number: 160-9071-1

Login Number: 9071

List Source: TestAmerica St. Louis

List Number: 1

Creator: Clarke, Jill C

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 160-9438-1

Job Description: START Site in New Mexico

For:
Weston Solutions, Inc.
5599 San Felipe
Suite 700
Houston, TX 77056

Attention: Mrs. Kristie Warr

Approved for release.
Erika K Gish
Project Manager II
2/18/2015 1:13 PM

Erika K Gish, Project Manager II
13715 Rider Trail North, Earth City, MO, 63045
(314)298-8566
erika.gish@testamericainc.com
02/18/2015
Revision: 1

The test results in this report meet NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted. Results pertain only to samples listed in this report. Pursuant to NELAP, this report shall not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of TestAmerica and its client. All questions regarding this report should be directed to the TestAmerica Project Manager.

Louisiana Lab Certification ID (Non-Potable, Solid/Haz. Material): 106151
Florida Lab Certification ID (Drinking Water): E87689.

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Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F1	MS and/or MSD Recovery exceeds the control limits

General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
H	Sample was prepped or analyzed beyond the specified holding time
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.
G	The Sample MDC is greater than the requested RL.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

CASE NARRATIVE

Client: Weston Solutions, Inc.

Project: START Site in New Mexico

Report Number: 160-9438-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

TestAmerica St. Louis attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

Revision 1: The "final volume" was filled out for the Alkalinity analysis in TALS. This column is not used for the calculation of data and does not affect the final results. The volume was changed to 50ml and the report was revised per client request.

RECEIPT

The samples were received on 11/14/2014 9:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.4° C.

DISSOLVED METALS (ICP)

Samples MW358-20141113-21 (160-9438-1) and MW359-20141113-21 (160-9438-2) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 12/05/2014 and analyzed on 12/10/2014.

Analytical Batch 162455

The following sample(s) was diluted to bring the concentration of target analytes within the calibration range: (160-9438-2 MS), (160-9438-2 MSD), (160-9438-2 SD), MW358-20141113-21 (160-9438-1), MW359-20141113-21 (160-9438-2). Elevated reporting limits (RLs) are provided.

Thallium was detected in method blank LB 160-157719/1-C at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged.

Due to the high concentration of calcium, magnesium, and sodium the matrix spike / matrix spike duplicate (MS/MSD) could not be evaluated for accuracy and precision. The presence of the '4' qualifier in the data indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount. The associated laboratory control sample (LCS) met acceptance criteria.

The matrix spike / matrix spike duplicate (MS/MSD) recoveries for uranium were outside control limits. Sample matrix interference are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL METALS (ICP)
Samples MW358-20141113-21 (160-9438-1) and MW359-20141113-21 (160-9438-2) were analyzed for total metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 12/01/2014 and analyzed on 12/05/2014.

Analytical Batch 161515
The following sample(s) was diluted to bring the concentration of target analytes within the calibration range: (160-9438-1 MS), (160-9438-1 MSD), (160-9438-1 SD), MW358-20141113-21 (160-9438-1), MW359-20141113-21 (160-9438-2). Elevated reporting limits (RLs) are provided.

Lead and Zinc were detected in method blank MB 160-160137/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged.

Due to the high concentration of calcium and sodium the matrix spike / matrix spike duplicate (MS/MSD) could not be evaluated for accuracy and precision. The presence of the '4' qualifier in the data indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount. The associated laboratory control sample (LCS) met acceptance criteria.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

DISSOLVED MERCURY (CVAA)
Samples MW358-20141113-21 (160-9438-1) and MW359-20141113-21 (160-9438-2) were analyzed for dissolved mercury (CVAA) in accordance with EPA SW-846 Methods 7470A. The samples were prepared and analyzed on 11/19/2014.

No additional analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

TOTAL MERCURY
Samples MW358-20141113-21 (160-9438-1) and MW359-20141113-21 (160-9438-2) were analyzed for total mercury in accordance with EPA SW-846 Methods 7470A. The samples were prepared and analyzed on 11/19/2014.

No additional analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

PH
Samples MW358-20141113-21 (160-9438-1) and MW359-20141113-21 (160-9438-2) were analyzed for pH in accordance with EPA Method 150.1. The samples were analyzed on 11/14/2014.

The following samples in pH batch 157000 are flagged with an "HF" flag to indicate that sample holding time for pH is immediate and expired in the field: MW358-20141113-21 (160-9438-1), MW359-20141113-21 (160-9438-2).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL DISSOLVED SOLIDS
Samples MW358-20141113-21 (160-9438-1) and MW359-20141113-21 (160-9438-2) were analyzed for total dissolved solids in accordance with EPA Method 160.1. The samples were analyzed on 11/20/2014.

No additional analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

ANIONS
Samples MW358-20141113-21 (160-9438-1) and MW359-20141113-21 (160-9438-2) were analyzed for anions in accordance with EPA Method 300.0. The samples were analyzed on 11/14/2014 and 11/15/2014.

Analytical Batch 158759
The following samples were diluted to bring the concentration of target analytes within the calibration range: MW358-20141113-21 (160-9438-1), MW359-20141113-21 (160-9438-2). Elevated reporting limits (RLs) are provided.

Samples MW358-20141113-21 (160-9438-1), MW359-20141113-21 (160-9438-2) were run outside the holding time for the analysis of Nitrate due to the dilution not being prepped correctly in the initial run. Sample MW359-20141113-21 (160-9438-2) was also run out of hold for the analysis of Nitrite due to the dilution not being prepped correctly in the initial run. However, these samples were run within the 2x hold for these anions.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ALKALINITY
Samples MW358-20141113-21 (160-9438-1) and MW359-20141113-21 (160-9438-2) were analyzed for alkalinity in accordance with EPA Method 310.1. The samples were analyzed on 11/21/2014.

Alkalinity and Bicarbonate Alkalinity as CaCO3 were detected in method blank MB 160-158800/1 at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GROSS ALPHA AND GROSS BETA RADIOACTIVITY

Samples MW358-20141113-21 (160-9438-1) and MW359-20141113-21 (160-9438-2) were analyzed for Gross Alpha and Gross Beta Radioactivity in accordance with SW-846 Method 9310. The samples were prepared on 11/19/2014 and analyzed on 11/23/2014 and 11/25/2014.

The gross alpha and beta detection goal was not met for the following samples due to a reduction of the sample size attiributed to high residual mass:MW358-20141113-21 (160-9438-1), MW359-20141113-21 (160-9438-2). Analytical results are reported with the detection limit achieved.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ISOTOPIC THORIUM (ALPHA SPECTROMETRY)

Samples MW358-20141113-21 (160-9438-1) and MW359-20141113-21 (160-9438-2) were analyzed for Isotopic Thorium (Alpha Spectrometry) in accordance with DOE. The samples were prepared on 11/19/2014 and analyzed on 11/23/2014 and 11/24/2014.

Samples MW358-20141113-21 (160-9438-1), MW359-20141113-21 (160-9438-2) appear to be "soapy". A reduced aliquot was used to prevent a large amount of precipitate from forming.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ISOTOPIC URANIUM (ALPHA SPECTROMETRY)

Samples MW358-20141113-21 (160-9438-1) and MW359-20141113-21 (160-9438-2) were analyzed for Isotopic Uranium (Alpha Spectrometry) in accordance with DOE. The samples were prepared on 11/19/2014 and analyzed on 11/21/2014.

Samples MW358-20141113-21 (160-9438-1), MW359-20141113-21 (160-9438-2) appear to be "soapy". A reduced aliquot was used to prevent a large amount of precipitate from forming.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Weston Solutions, Inc.
Project/Site: START Site in New Mexico

TestAmerica Job ID: 160-9438-1

Client Sample ID: MW358-20141113-21 — Lab Sample ID: 160-9438-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	350	J	500	72	ug/L	10		6010C	Total/NA
Calcium	550000		10000	540	ug/L	10		6010C	Total/NA
Iron	260	J	1000	130	ug/L	10		6010C	Total/NA
Lead	12	J B	100	6.0	ug/L	10		6010C	Total/NA
Magnesium	160000		10000	510	ug/L	10		6010C	Total/NA
Manganese	43	J	150	10	ug/L	10		6010C	Total/NA
Sodium	270000		10000	1100	ug/L	10		6010C	Total/NA
Silicon	6900		4000	200	ug/L	10		6010C	Total/NA
Titanium	18	J	200	13	ug/L	10		6010C	Total/NA
Arsenic	20	J	100	18	ug/L	10		6010C	Dissolved
Boron	320	J	500	72	ug/L	10		6010C	Dissolved
Calcium	520000		10000	540	ug/L	10		6010C	Dissolved
Lead	8.0	J	100	6.0	ug/L	10		6010C	Dissolved
Magnesium	130000		10000	510	ug/L	10		6010C	Dissolved
Manganese	29	J	150	10	ug/L	10		6010C	Dissolved
Silicon	5600		4000	200	ug/L	10		6010C	Dissolved
Sodium	250000		10000	1100	ug/L	10		6010C	Dissolved
Thallium	24	J B	200	24	ug/L	10		6010C	Dissolved
Mercury	0.12	J	0.20	0.060	ug/L	1		7470A	Dissolved
pH	7.24	HF	0.100	0.100	SU	1		150.1	Total/NA
Total Dissolved Solids (TDS)	3600		5.0	3.5	mg/L	1		160.1	Total/NA
Fluoride	0.69		0.10	0.010	mg/L	1		300.0	Total/NA
Bromide	0.52		0.25	0.025	mg/L	1		300.0	Total/NA
Alkalinity	160	B	5.0	0.54	mg/L	1		310.1	Total/NA
Bicarbonate Alkalinity as CaCO3	160	B	5.0	0.54	mg/L	1		310.1	Total/NA
Nitrate as N - DL	4.0	H	2.0	0.40	mg/L	100		300.0	Total/NA
Chloride - DL	48		20	2.0	mg/L	100		300.0	Total/NA
Sulfate - DL2	2100		250	25	mg/L	500		300.0	Total/NA

Client Sample ID: MW359-20141113-21 — Lab Sample ID: 160-9438-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	410	J	2000	220	ug/L	10		6010C	Total/NA
Boron	260	J	500	72	ug/L	10		6010C	Total/NA
Calcium	460000		10000	540	ug/L	10		6010C	Total/NA
Copper	28	J	250	21	ug/L	10		6010C	Total/NA
Iron	460	J	1000	130	ug/L	10		6010C	Total/NA
Lead	16	J B	100	6.0	ug/L	10		6010C	Total/NA
Magnesium	210000		10000	510	ug/L	10		6010C	Total/NA
Manganese	150		150	10	ug/L	10		6010C	Total/NA
Potassium	6200	J	50000	4600	ug/L	10		6010C	Total/NA
Sodium	330000		10000	1100	ug/L	10		6010C	Total/NA
Silicon	4500		4000	200	ug/L	10		6010C	Total/NA
Titanium	18	J	200	13	ug/L	10		6010C	Total/NA
Arsenic	24	J	100	18	ug/L	10		6010C	Dissolved
Boron	300	J	500	72	ug/L	10		6010C	Dissolved
Calcium	470000		10000	540	ug/L	10		6010C	Dissolved
Iron	130	J	1000	130	ug/L	10		6010C	Dissolved
Magnesium	220000		10000	510	ug/L	10		6010C	Dissolved
Manganese	110	J	150	10	ug/L	10		6010C	Dissolved

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW359-20141113-21 (Continued)

Lab Sample ID: 160-9438-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Potassium	5800	J	50000	4600	ug/L	10		6010C	Dissolved
Silicon	3800	J	4000	200	ug/L	10		6010C	Dissolved
Sodium	350000		10000	1100	ug/L	10		6010C	Dissolved
Thallium	28	J B	200	24	ug/L	10		6010C	Dissolved
Titanium	22	J	200	13	ug/L	10		6010C	Dissolved
pH	7.20	HF	0.100	0.100	SU	1		150.1	Total/NA
Total Dissolved Solids (TDS)	4600		5.0	3.5	mg/L	1		160.1	Total/NA
Fluoride	0.42		0.10	0.010	mg/L	1		300.0	Total/NA
Bromide	0.96		0.25	0.025	mg/L	1		300.0	Total/NA
Alkalinity	200	B	5.0	0.54	mg/L	1		310.1	Total/NA
Bicarbonate Alkalinity as CaCO3	200	B	5.0	0.54	mg/L	1		310.1	Total/NA
Nitrate as N - DL	1.2	H	0.40	0.080	mg/L	20		300.0	Total/NA
Nitrite as N - DL	0.61	H	0.40	0.060	mg/L	20		300.0	Total/NA
Chloride - DL	61		4.0	0.40	mg/L	20		300.0	Total/NA
Sulfate - DL3	2800		250	25	mg/L	500		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

Client: Weston Solutions, Inc.
Project/Site: START Site in New Mexico

TestAmerica Job ID: 160-9438-1

Client Sample ID: MW358-20141113-21
Date Collected: 11/13/14 12:05
Date Received: 11/14/14 09:20

Lab Sample ID: 160-9438-1
Matrix: Water

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		2000	220	ug/L		12/01/14 10:49	12/05/14 15:44	10
Antimony	ND		100	37	ug/L		12/01/14 10:49	12/05/14 15:44	10
Arsenic	ND		100	18	ug/L		12/01/14 10:49	12/05/14 15:44	10
Barium	ND		500	21	ug/L		12/01/14 10:49	12/05/14 15:44	10
Boron	**350**	**J**	500	72	ug/L		12/01/14 10:49	12/05/14 15:44	10
Beryllium	ND		50	2.8	ug/L		12/01/14 10:49	12/05/14 15:44	10
Cadmium	ND		50	3.4	ug/L		12/01/14 10:49	12/05/14 15:44	10
Calcium	**550000**		10000	540	ug/L		12/01/14 10:49	12/05/14 15:44	10
Chromium	ND		100	34	ug/L		12/01/14 10:49	12/05/14 15:44	10
Cobalt	ND		500	27	ug/L		12/01/14 10:49	12/05/14 15:44	10
Copper	ND		250	21	ug/L		12/01/14 10:49	12/05/14 15:44	10
Iron	**260**	**J**	1000	130	ug/L		12/01/14 10:49	12/05/14 15:44	10
Lead	**12**	**J B**	100	6.0	ug/L		12/01/14 10:49	12/05/14 15:44	10
Magnesium	**160000**		10000	510	ug/L		12/01/14 10:49	12/05/14 15:44	10
Manganese	**43**	**J**	150	10	ug/L		12/01/14 10:49	12/05/14 15:44	10
Nickel	ND		400	26	ug/L		12/01/14 10:49	12/05/14 15:44	10
Molybdenum	ND		400	19	ug/L		12/01/14 10:49	12/05/14 15:44	10
Potassium	ND		50000	4600	ug/L		12/01/14 10:49	12/05/14 15:44	10
Selenium	ND		150	21	ug/L		12/01/14 10:49	12/05/14 15:44	10
Silver	ND		100	9.9	ug/L		12/01/14 10:49	12/05/14 15:44	10
Phosphorus	ND		2500	140	ug/L		12/01/14 10:49	12/05/14 15:44	10
Sodium	**270000**		10000	1100	ug/L		12/01/14 10:49	12/05/14 15:44	10
Thallium	ND		200	24	ug/L		12/01/14 10:49	12/05/14 15:44	10
Vanadium	ND		500	44	ug/L		12/01/14 10:49	12/05/14 15:44	10
Zinc	ND		200	83	ug/L		12/01/14 10:49	12/05/14 15:44	10
Silicon	**6900**		4000	200	ug/L		12/01/14 10:49	12/05/14 15:44	10
Tin	ND		1000	50	ug/L		12/01/14 10:49	12/05/14 15:44	10
Titanium	**18**	**J**	200	13	ug/L		12/01/14 10:49	12/05/14 15:44	10
Uranium	ND		5000	260	ug/L		12/01/14 10:49	12/05/14 15:44	10

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		2000	220	ug/L		12/05/14 12:09	12/10/14 09:39	10
Antimony	ND		100	37	ug/L		12/05/14 12:09	12/10/14 09:39	10
Arsenic	**20**	**J**	100	18	ug/L		12/05/14 12:09	12/10/14 09:39	10
Barium	ND		500	21	ug/L		12/05/14 12:09	12/10/14 09:39	10
Beryllium	ND		50	2.8	ug/L		12/05/14 12:09	12/10/14 09:39	10
Boron	**320**	**J**	500	72	ug/L		12/05/14 12:09	12/10/14 09:39	10
Cadmium	ND		50	3.4	ug/L		12/05/14 12:09	12/10/14 09:39	10
Calcium	**520000**		10000	540	ug/L		12/05/14 12:09	12/10/14 09:39	10
Chromium	ND		100	34	ug/L		12/05/14 12:09	12/10/14 09:39	10
Cobalt	ND		500	27	ug/L		12/05/14 12:09	12/10/14 09:39	10
Copper	ND		250	21	ug/L		12/05/14 12:09	12/10/14 09:39	10
Iron	ND		1000	130	ug/L		12/05/14 12:09	12/10/14 09:39	10
Lead	**8.0**	**J**	100	6.0	ug/L		12/05/14 12:09	12/10/14 09:39	10
Magnesium	**130000**		10000	510	ug/L		12/05/14 12:09	12/10/14 09:39	10
Manganese	**29**	**J**	150	10	ug/L		12/05/14 12:09	12/10/14 09:39	10
Molybdenum	ND		400	19	ug/L		12/05/14 12:09	12/10/14 09:39	10
Nickel	ND		400	26	ug/L		12/05/14 12:09	12/10/14 09:39	10

Client Sample ID: MW358-20141113-21
Date Collected: 11/13/14 12:05
Date Received: 11/14/14 09:20

Lab Sample ID: 160-9438-1
Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phosphorus	ND		2500	140	ug/L		12/05/14 12:09	12/10/14 09:39	10
Potassium	ND		50000	4600	ug/L		12/05/14 12:09	12/10/14 09:39	10
Selenium	ND		150	21	ug/L		12/05/14 12:09	12/10/14 09:39	10
Silicon	**5600**		4000	200	ug/L		12/05/14 12:09	12/10/14 09:39	10
Silver	ND		100	9.9	ug/L		12/05/14 12:09	12/10/14 09:39	10
Sodium	**250000**		10000	1100	ug/L		12/05/14 12:09	12/10/14 09:39	10
Thallium	**24**	**J B**	200	24	ug/L		12/05/14 12:09	12/10/14 09:39	10
Tin	ND		1000	50	ug/L		12/05/14 12:09	12/10/14 09:39	10
Titanium	ND		200	13	ug/L		12/05/14 12:09	12/10/14 09:39	10
Uranium	ND		5000	260	ug/L		12/05/14 12:09	12/10/14 09:39	10
Vanadium	ND		500	44	ug/L		12/05/14 12:09	12/10/14 09:39	10
Zinc	ND		200	83	ug/L		12/05/14 12:09	12/10/14 09:39	10

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.060	ug/L		11/19/14 11:07	11/19/14 15:58	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.12**	**J**	0.20	0.060	ug/L		11/19/14 11:06	11/19/14 15:26	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.24**	**HF**	0.100	0.100	SU			11/14/14 11:57	1
Total Dissolved Solids (TDS)	**3600**		5.0	3.5	mg/L			11/20/14 08:30	1
Nitrite as N	ND		0.020	0.0030	mg/L			11/14/14 17:47	1
Fluoride	**0.69**		0.10	0.010	mg/L			11/14/14 17:47	1
Bromide	**0.52**		0.25	0.025	mg/L			11/14/14 17:47	1
Orthophosphate	ND		0.50	0.078	mg/L			11/14/14 17:47	1
Alkalinity	**160**	**B**	5.0	0.54	mg/L			11/21/14 14:46	1
Bicarbonate Alkalinity as CaCO3	**160**	**B**	5.0	0.54	mg/L			11/21/14 14:46	1
Carbonate Alkalinity as CaCO3	ND		5.0	0.54	mg/L			11/21/14 14:46	1

General Chemistry - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	**4.0**	**H**	2.0	0.40	mg/L			11/15/14 19:12	100
Chloride	**48**		20	2.0	mg/L			11/15/14 19:12	100

General Chemistry - DL2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**2100**		250	25	mg/L			11/15/14 19:26	500

Method: 9310 - Gross Alpha / Beta (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	17.6	U G	12.6	12.7	3.00	18.3	pCi/L	11/19/14 12:09	11/25/14 07:52	1
Gross Beta	-1.35	U G	5.42	5.42	4.00	9.57	pCi/L	11/19/14 12:09	11/25/14 07:52	1

Client Sample ID: MW358-20141113-21

Lab Sample ID: 160-9438-1

Date Collected: 11/13/14 12:05

Matrix: Water

Date Received: 11/14/14 09:20

Method: A-01-R - Isotopic Thorium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Thorium-228	0.147	U	0.360	0.360	1.00	0.668	pCi/L	11/19/14 11:12	11/24/14 19:53	1
Thorium-230	**0.790**		0.395	0.401	1.00	0.263	pCi/L	11/19/14 11:12	11/24/14 19:53	1
Thorium-232	0.0949	U	0.134	0.134	1.00	0.142	pCi/L	11/19/14 11:12	11/24/14 19:53	1
Thorium-227	0.150	U	0.321	0.322	1.00	0.592	pCi/L	11/19/14 11:12	11/24/14 19:53	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Thorium-229	*92.5*		*30 - 110*	*11/19/14 11:12*	*11/24/14 19:53*	*1*

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Uranium-233/234	**9.01**		1.39	1.58	1.00	0.350	pCi/L	11/19/14 11:12	11/21/14 16:13	1
Uranium-235/236	**0.265**		0.265	0.266	1.00	0.199	pCi/L	11/19/14 11:12	11/21/14 16:13	1
Uranium-238	**5.35**		1.07	1.16	1.00	0.294	pCi/L	11/19/14 11:12	11/21/14 16:13	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*79.7*		*30 - 110*	*11/19/14 11:12*	*11/21/14 16:13*	*1*

Client Sample ID: MW359-20141113-21

Lab Sample ID: 160-9438-2

Date Collected: 11/13/14 13:45

Matrix: Water

Date Received: 11/14/14 09:20

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**410**	**J**	2000	220	ug/L		12/01/14 10:49	12/05/14 16:00	10
Antimony	ND		100	37	ug/L		12/01/14 10:49	12/05/14 16:00	10
Arsenic	ND		100	18	ug/L		12/01/14 10:49	12/05/14 16:00	10
Barium	ND		500	21	ug/L		12/01/14 10:49	12/05/14 16:00	10
Boron	**260**	**J**	500	72	ug/L		12/01/14 10:49	12/05/14 16:00	10
Beryllium	ND		50	2.8	ug/L		12/01/14 10:49	12/05/14 16:00	10
Cadmium	ND		50	3.4	ug/L		12/01/14 10:49	12/05/14 16:00	10
Calcium	**460000**		10000	540	ug/L		12/01/14 10:49	12/05/14 16:00	10
Chromium	ND		100	34	ug/L		12/01/14 10:49	12/05/14 16:00	10
Cobalt	ND		500	27	ug/L		12/01/14 10:49	12/05/14 16:00	10
Copper	**28**	**J**	250	21	ug/L		12/01/14 10:49	12/05/14 16:00	10
Iron	**460**	**J**	1000	130	ug/L		12/01/14 10:49	12/05/14 16:00	10
Lead	**16**	**J B**	100	6.0	ug/L		12/01/14 10:49	12/05/14 16:00	10
Magnesium	**210000**		10000	510	ug/L		12/01/14 10:49	12/05/14 16:00	10
Manganese	**150**		150	10	ug/L		12/01/14 10:49	12/05/14 16:00	10
Nickel	ND		400	26	ug/L		12/01/14 10:49	12/05/14 16:00	10
Molybdenum	ND		400	19	ug/L		12/01/14 10:49	12/05/14 16:00	10
Potassium	**6200**	**J**	50000	4600	ug/L		12/01/14 10:49	12/05/14 16:00	10
Selenium	ND		150	21	ug/L		12/01/14 10:49	12/05/14 16:00	10
Silver	ND		100	9.9	ug/L		12/01/14 10:49	12/05/14 16:00	10
Phosphorus	ND		2500	140	ug/L		12/01/14 10:49	12/05/14 16:00	10
Sodium	**330000**		10000	1100	ug/L		12/01/14 10:49	12/05/14 16:00	10
Thallium	ND		200	24	ug/L		12/01/14 10:49	12/05/14 16:00	10

Client Sample ID: MW359-20141113-21
Date Collected: 11/13/14 13:45
Date Received: 11/14/14 09:20

Lab Sample ID: 160-9438-2
Matrix: Water

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vanadium	ND		500	44	ug/L		12/01/14 10:49	12/05/14 16:00	10
Zinc	ND		200	83	ug/L		12/01/14 10:49	12/05/14 16:00	10
Silicon	**4500**		4000	200	ug/L		12/01/14 10:49	12/05/14 16:00	10
Tin	ND		1000	50	ug/L		12/01/14 10:49	12/05/14 16:00	10
Titanium	**18**	**J**	200	13	ug/L		12/01/14 10:49	12/05/14 16:00	10
Uranium	ND		5000	260	ug/L		12/01/14 10:49	12/05/14 16:00	10

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		2000	220	ug/L		12/05/14 12:09	12/10/14 09:43	10
Antimony	ND		100	37	ug/L		12/05/14 12:09	12/10/14 09:43	10
Arsenic	**24**	**J**	100	18	ug/L		12/05/14 12:09	12/10/14 09:43	10
Barium	ND		500	21	ug/L		12/05/14 12:09	12/10/14 09:43	10
Beryllium	ND		50	2.8	ug/L		12/05/14 12:09	12/10/14 09:43	10
Boron	**300**	**J**	500	72	ug/L		12/05/14 12:09	12/10/14 09:43	10
Cadmium	ND		50	3.4	ug/L		12/05/14 12:09	12/10/14 09:43	10
Calcium	**470000**		10000	540	ug/L		12/05/14 12:09	12/10/14 09:43	10
Chromium	ND		100	34	ug/L		12/05/14 12:09	12/10/14 09:43	10
Cobalt	ND		500	27	ug/L		12/05/14 12:09	12/10/14 09:43	10
Copper	ND		250	21	ug/L		12/05/14 12:09	12/10/14 09:43	10
Iron	**130**	**J**	1000	130	ug/L		12/05/14 12:09	12/10/14 09:43	10
Lead	ND		100	6.0	ug/L		12/05/14 12:09	12/10/14 09:43	10
Magnesium	**220000**		10000	510	ug/L		12/05/14 12:09	12/10/14 09:43	10
Manganese	**110**	**J**	150	10	ug/L		12/05/14 12:09	12/10/14 09:43	10
Molybdenum	ND		400	19	ug/L		12/05/14 12:09	12/10/14 09:43	10
Nickel	ND		400	26	ug/L		12/05/14 12:09	12/10/14 09:43	10
Phosphorus	ND		2500	140	ug/L		12/05/14 12:09	12/10/14 09:43	10
Potassium	**5800**	**J**	50000	4600	ug/L		12/05/14 12:09	12/10/14 09:43	10
Selenium	ND		150	21	ug/L		12/05/14 12:09	12/10/14 09:43	10
Silicon	**3800**	**J**	4000	200	ug/L		12/05/14 12:09	12/10/14 09:43	10
Silver	ND		100	9.9	ug/L		12/05/14 12:09	12/10/14 09:43	10
Sodium	**350000**		10000	1100	ug/L		12/05/14 12:09	12/10/14 09:43	10
Thallium	**28**	**J B**	200	24	ug/L		12/05/14 12:09	12/10/14 09:43	10
Tin	ND		1000	50	ug/L		12/05/14 12:09	12/10/14 09:43	10
Titanium	**22**	**J**	200	13	ug/L		12/05/14 12:09	12/10/14 09:43	10
Uranium	ND		5000	260	ug/L		12/05/14 12:09	12/10/14 09:43	10
Vanadium	ND		500	44	ug/L		12/05/14 12:09	12/10/14 09:43	10
Zinc	ND		200	83	ug/L		12/05/14 12:09	12/10/14 09:43	10

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.060	ug/L		11/19/14 11:07	11/19/14 16:01	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.060	ug/L		11/19/14 11:06	11/19/14 15:36	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.20**	**HF**	0.100	0.100	SU			11/14/14 11:57	1

Client Sample ID: MW359-20141113-21

Date Collected: 11/13/14 13:45
Date Received: 11/14/14 09:20

Lab Sample ID: 160-9438-2

Matrix: Water

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	**4600**		5.0	3.5	mg/L			11/20/14 08:30	1
Fluoride	**0.42**		0.10	0.010	mg/L			11/14/14 18:29	1
Bromide	**0.96**		0.25	0.025	mg/L			11/14/14 18:29	1
Orthophosphate	ND		0.50	0.078	mg/L			11/14/14 18:29	1
Alkalinity	**200**	**B**	5.0	0.54	mg/L			11/21/14 14:46	1
Bicarbonate Alkalinity as CaCO3	**200**	**B**	5.0	0.54	mg/L			11/21/14 14:46	1
Carbonate Alkalinity as CaCO3	ND		5.0	0.54	mg/L			11/21/14 14:46	1

General Chemistry - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	**1.2**	**H**	0.40	0.080	mg/L			11/15/14 19:40	20
Nitrite as N	**0.61**	**H**	0.40	0.060	mg/L			11/15/14 19:40	20
Chloride	**61**		4.0	0.40	mg/L			11/15/14 19:40	20

General Chemistry - DL3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**2800**		250	25	mg/L			11/15/14 20:07	500

Method: 9310 - Gross Alpha / Beta (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	**49.6**	**G**	21.5	22.2	3.00	27.4	pCi/L	11/19/14 12:09	11/23/14 19:36	1
Gross Beta	12.3	U G	8.53	8.62	4.00	12.7	pCi/L	11/19/14 12:09	11/23/14 19:36	1

Method: A-01-R - Isotopic Thorium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Thorium-228	**0.591**		0.430	0.433	1.00	0.579	pCi/L	11/19/14 11:12	11/23/14 22:34	1
Thorium-230	**1.00**		0.469	0.477	1.00	0.397	pCi/L	11/19/14 11:12	11/23/14 22:34	1
Thorium-232	0.127	U	0.175	0.175	1.00	0.271	pCi/L	11/19/14 11:12	11/23/14 22:34	1
Thorium-227	-0.00818	U	0.235	0.235	1.00	0.540	pCi/L	11/19/14 11:12	11/23/14 22:34	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Thorium-229	*87.1*		*30 - 110*	*11/19/14 11:12*	*11/23/14 22:34*	*1*

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Uranium-233/234	**27.1**		2.42	3.32	1.00	0.396	pCi/L	11/19/14 11:12	11/21/14 16:13	1
Uranium-235/236	**1.54**		0.641	0.654	1.00	0.201	pCi/L	11/19/14 11:12	11/21/14 16:13	1
Uranium-238	**16.5**		1.89	2.34	1.00	0.296	pCi/L	11/19/14 11:12	11/21/14 16:13	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*80.5*		*30 - 110*	*11/19/14 11:12*	*11/21/14 16:13*	*1*

Default Detection Limits

Client: Weston Solutions, Inc.
Project/Site: START Site in New Mexico

TestAmerica Job ID: 160-9438-1

Method: 6010C - Metals (ICP)

Analyte	RL	MDL	Units	Method
Aluminum	200	22	ug/L	6010C
Antimony	10	3.7	ug/L	6010C
Arsenic	10	1.8	ug/L	6010C
Barium	50	2.1	ug/L	6010C
Beryllium	5.0	0.28	ug/L	6010C
Boron	50	7.2	ug/L	6010C
Cadmium	5.0	0.34	ug/L	6010C
Calcium	1000	54	ug/L	6010C
Chromium	10	3.4	ug/L	6010C
Cobalt	50	2.7	ug/L	6010C
Copper	25	2.1	ug/L	6010C
Iron	100	13	ug/L	6010C
Lead	10	0.60	ug/L	6010C
Magnesium	1000	51	ug/L	6010C
Manganese	15	1.0	ug/L	6010C
Molybdenum	40	1.9	ug/L	6010C
Nickel	40	2.6	ug/L	6010C
Phosphorus	250	14	ug/L	6010C
Potassium	5000	460	ug/L	6010C
Selenium	15	2.1	ug/L	6010C
Silicon	400	20	ug/L	6010C
Silver	10	0.99	ug/L	6010C
Sodium	1000	110	ug/L	6010C
Thallium	20	2.4	ug/L	6010C
Tin	100	5.0	ug/L	6010C
Titanium	20	1.3	ug/L	6010C
Uranium	500	26	ug/L	6010C
Vanadium	50	4.4	ug/L	6010C
Zinc	20	8.3	ug/L	6010C

Method: 6010C - Metals (ICP) - Dissolved

Analyte	RL	MDL	Units	Method
Aluminum	200	22	ug/L	6010C
Antimony	10	3.7	ug/L	6010C
Arsenic	10	1.8	ug/L	6010C
Barium	50	2.1	ug/L	6010C
Beryllium	5.0	0.28	ug/L	6010C
Boron	50	7.2	ug/L	6010C
Cadmium	5.0	0.34	ug/L	6010C
Calcium	1000	54	ug/L	6010C
Chromium	10	3.4	ug/L	6010C
Cobalt	50	2.7	ug/L	6010C
Copper	25	2.1	ug/L	6010C
Iron	100	13	ug/L	6010C
Lead	10	0.60	ug/L	6010C
Magnesium	1000	51	ug/L	6010C
Manganese	15	1.0	ug/L	6010C
Molybdenum	40	1.9	ug/L	6010C
Nickel	40	2.6	ug/L	6010C
Phosphorus	250	14	ug/L	6010C
Potassium	5000	460	ug/L	6010C

Default Detection Limits

Client: Weston Solutions, Inc.
Project/Site: START Site in New Mexico

TestAmerica Job ID: 160-9438-1

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	RL	MDL	Units	Method
Selenium	15	2.1	ug/L	6010C
Silicon	400	20	ug/L	6010C
Silver	10	0.99	ug/L	6010C
Sodium	1000	110	ug/L	6010C
Thallium	20	2.4	ug/L	6010C
Tin	100	5.0	ug/L	6010C
Titanium	20	1.3	ug/L	6010C
Uranium	500	26	ug/L	6010C
Vanadium	50	4.4	ug/L	6010C
Zinc	20	8.3	ug/L	6010C

Method: 7470A - Mercury (CVAA)

Analyte	RL	MDL	Units	Method
Mercury	0.20	0.060	ug/L	7470A

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	RL	MDL	Units	Method
Mercury	0.20	0.060	ug/L	7470A

General Chemistry

Analyte	RL	MDL	Units	Method
pH	0.100	0.100	SU	150.1
Total Dissolved Solids (TDS)	5.0	3.5	mg/L	160.1
Bromide	0.25	0.025	mg/L	300.0
Chloride	0.20	0.020	mg/L	300.0
Fluoride	0.10	0.010	mg/L	300.0
Nitrate as N	0.020	0.0040	mg/L	300.0
Nitrite as N	0.020	0.0030	mg/L	300.0
Orthophosphate	0.50	0.078	mg/L	300.0
Sulfate	0.50	0.050	mg/L	300.0
Alkalinity	5.0	0.54	mg/L	310.1
Bicarbonate Alkalinity as CaCO3	5.0	0.54	mg/L	310.1
Carbonate Alkalinity as CaCO3	5.0	0.54	mg/L	310.1

Tracer/Carrier Summary

Client: Weston Solutions, Inc.
Project/Site: START Site in New Mexico

TestAmerica Job ID: 160-9438-1

Method: A-01-R - Isotopic Thorium (Alpha Spectrometry)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		Th-229
Lab Sample ID	Client Sample ID	(30-110)
160-9438-1	MW358-20141113-21	92.5
160-9438-1 DU	MW358-20141113-21	83.8
160-9438-2	MW359-20141113-21	87.1
LCS 160-158130/2-A	Lab Control Sample	84.0
MB 160-158130/1-A	Method Blank	80.6

Tracer/Carrier Legend

Th-229 = Thorium-229

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		U-232
Lab Sample ID	Client Sample ID	(30-110)
160-9438-1	MW358-20141113-21	79.7
160-9438-1 DU	MW358-20141113-21	80.5
160-9438-2	MW359-20141113-21	80.5
LCS 160-158134/2-A	Lab Control Sample	72.8
MB 160-158134/1-A	Method Blank	86.1

Tracer/Carrier Legend

U-232 = Uranium-232

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 160-160137/1-A
Matrix: Water
Analysis Batch: 161515

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 160137

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		200	22	ug/L		12/01/14 10:49	12/05/14 15:29	1
Antimony	ND		10	3.7	ug/L		12/01/14 10:49	12/05/14 15:29	1
Arsenic	ND		10	1.8	ug/L		12/01/14 10:49	12/05/14 15:29	1
Barium	ND		50	2.1	ug/L		12/01/14 10:49	12/05/14 15:29	1
Beryllium	ND		5.0	0.28	ug/L		12/01/14 10:49	12/05/14 15:29	1
Boron	ND		50	7.2	ug/L		12/01/14 10:49	12/05/14 15:29	1
Cadmium	ND		5.0	0.34	ug/L		12/01/14 10:49	12/05/14 15:29	1
Calcium	ND		1000	54	ug/L		12/01/14 10:49	12/05/14 15:29	1
Chromium	ND		10	3.4	ug/L		12/01/14 10:49	12/05/14 15:29	1
Cobalt	ND		50	2.7	ug/L		12/01/14 10:49	12/05/14 15:29	1
Copper	ND		25	2.1	ug/L		12/01/14 10:49	12/05/14 15:29	1
Iron	ND		100	13	ug/L		12/01/14 10:49	12/05/14 15:29	1
Lead	1.50	J	10	0.60	ug/L		12/01/14 10:49	12/05/14 15:29	1
Magnesium	ND		1000	51	ug/L		12/01/14 10:49	12/05/14 15:29	1
Manganese	ND		15	1.0	ug/L		12/01/14 10:49	12/05/14 15:29	1
Molybdenum	ND		40	1.9	ug/L		12/01/14 10:49	12/05/14 15:29	1
Nickel	ND		40	2.6	ug/L		12/01/14 10:49	12/05/14 15:29	1
Potassium	ND		5000	460	ug/L		12/01/14 10:49	12/05/14 15:29	1
Selenium	ND		15	2.1	ug/L		12/01/14 10:49	12/05/14 15:29	1
Phosphorus	ND		250	14	ug/L		12/01/14 10:49	12/05/14 15:29	1
Silver	ND		10	0.99	ug/L		12/01/14 10:49	12/05/14 15:29	1
Sodium	ND		1000	110	ug/L		12/01/14 10:49	12/05/14 15:29	1
Thallium	ND		20	2.4	ug/L		12/01/14 10:49	12/05/14 15:29	1
Silicon	ND		400	20	ug/L		12/01/14 10:49	12/05/14 15:29	1
Tin	ND		100	5.0	ug/L		12/01/14 10:49	12/05/14 15:29	1
Titanium	ND		20	1.3	ug/L		12/01/14 10:49	12/05/14 15:29	1
Vanadium	ND		50	4.4	ug/L		12/01/14 10:49	12/05/14 15:29	1
Uranium	ND		500	26	ug/L		12/01/14 10:49	12/05/14 15:29	1
Zinc	10.1	J	20	8.3	ug/L		12/01/14 10:49	12/05/14 15:29	1

Lab Sample ID: LCS 160-160137/2-A
Matrix: Water
Analysis Batch: 161515

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 160137

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	10000	10000		ug/L		100	80 - 120
Antimony	500	506		ug/L		101	80 - 120
Arsenic	1000	1050		ug/L		105	80 - 120
Barium	1000	1030		ug/L		103	80 - 120
Beryllium	1000	1030		ug/L		103	80 - 120
Boron	2000	1990		ug/L		100	80 - 120
Cadmium	1000	1050		ug/L		105	80 - 120
Calcium	10000	11600		ug/L		116	80 - 120
Chromium	1000	1100		ug/L		110	80 - 120
Cobalt	1000	1160		ug/L		116	80 - 120
Copper	1000	1100		ug/L		110	80 - 120
Iron	10000	10500		ug/L		105	80 - 120
Lead	1000	1140		ug/L		114	80 - 120

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 160-160137/2-A
Matrix: Water
Analysis Batch: 161515

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 160137

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Magnesium	10000	10000		ug/L		100	80 - 120
Manganese	1000	1040		ug/L		104	80 - 120
Molybdenum	500	530		ug/L		106	80 - 120
Nickel	1000	1130		ug/L		113	80 - 120
Potassium	10000	10100		ug/L		101	80 - 120
Selenium	500	531		ug/L		106	80 - 120
Phosphorus	1000	1120		ug/L		112	80 - 120
Silver	200	199		ug/L		99	80 - 120
Sodium	10000	10100		ug/L		101	80 - 120
Thallium	200	230		ug/L		115	80 - 120
Silicon	5000	5030		ug/L		101	80 - 120
Tin	1000	1070		ug/L		107	80 - 120
Titanium	1000	978		ug/L		98	80 - 120
Vanadium	1000	1020		ug/L		102	80 - 120
Uranium	1000	1150		ug/L		115	80 - 120
Zinc	1000	1090		ug/L		109	80 - 120

Lab Sample ID: 160-9438-1 MS
Matrix: Water
Analysis Batch: 161515

Client Sample ID: MW358-20141113-21
Prep Type: Total/NA
Prep Batch: 160137

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	ND		10000	10400		ug/L		104	75 - 125
Antimony	ND		500	507		ug/L		101	75 - 125
Arsenic	ND		1000	1050		ug/L		105	75 - 125
Barium	ND		1000	995		ug/L		100	75 - 125
Beryllium	ND		1000	1000		ug/L		100	75 - 125
Boron	350	J	2000	2300		ug/L		97	75 - 125
Cadmium	ND		1000	1070		ug/L		107	75 - 125
Calcium	550000		10000	552000	4	ug/L		10	75 - 125
Chromium	ND		1000	1080		ug/L		108	75 - 125
Cobalt	ND		1000	1140		ug/L		114	75 - 125
Copper	ND		1000	1120		ug/L		112	75 - 125
Iron	260	J	10000	10800		ug/L		105	75 - 125
Lead	12	J B	1000	1140		ug/L		113	75 - 125
Magnesium	160000		10000	167000	4	ug/L		98	75 - 125
Manganese	43	J	1000	1070		ug/L		102	75 - 125
Molybdenum	ND		500	519		ug/L		104	75 - 125
Nickel	ND		1000	1120		ug/L		112	75 - 125
Potassium	ND		10000	11000	J	ug/L		110	75 - 125
Selenium	ND		500	526		ug/L		105	75 - 125
Phosphorus	ND		1000	1170	J	ug/L		117	75 - 125
Silver	ND		200	195		ug/L		98	75 - 125
Sodium	270000		10000	284000	4	ug/L		92	75 - 125
Thallium	ND		200	225		ug/L		113	75 - 125
Silicon	6900		5000	12700		ug/L		117	75 - 125
Tin	ND		1000	1060		ug/L		106	75 - 125
Titanium	18	J	1000	973		ug/L		96	75 - 125

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 160-9438-1 MS
Matrix: Water
Analysis Batch: 161515

Client Sample ID: MW358-20141113-21
Prep Type: Total/NA
Prep Batch: 160137

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Vanadium	ND		1000	1030		ug/L		103	75 - 125
Uranium	ND		1000	1130	J	ug/L		113	75 - 125
Zinc	ND		1000	1130		ug/L		113	75 - 125

Lab Sample ID: 160-9438-1 MSD
Matrix: Water
Analysis Batch: 161515

Client Sample ID: MW358-20141113-21
Prep Type: Total/NA
Prep Batch: 160137

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aluminum	ND		10000	10700		ug/L		107	75 - 125	2	20
Antimony	ND		500	521		ug/L		104	75 - 125	3	20
Arsenic	ND		1000	1050		ug/L		105	75 - 125	1	20
Barium	ND		1000	996		ug/L		100	75 - 125	0	20
Beryllium	ND		1000	1010		ug/L		101	75 - 125	0	20
Boron	350	J	2000	2300		ug/L		97	75 - 125	0	20
Cadmium	ND		1000	1060		ug/L		106	75 - 125	1	20
Calcium	550000		10000	542000	4	ug/L		-90	75 - 125	2	20
Chromium	ND		1000	1110		ug/L		111	75 - 125	2	20
Cobalt	ND		1000	1140		ug/L		114	75 - 125	0	20
Copper	ND		1000	1080		ug/L		108	75 - 125	3	20
Iron	260	J	10000	11000		ug/L		107	75 - 125	2	20
Lead	12	J B	1000	1130		ug/L		112	75 - 125	1	20
Magnesium	160000		10000	166000	4	ug/L		88	75 - 125	1	20
Manganese	43	J	1000	1070		ug/L		103	75 - 125	1	20
Molybdenum	ND		500	529		ug/L		106	75 - 125	2	20
Nickel	ND		1000	1120		ug/L		112	75 - 125	0	20
Potassium	ND		10000	11300	J	ug/L		113	75 - 125	2	20
Selenium	ND		500	523		ug/L		105	75 - 125	1	20
Phosphorus	ND		1000	1160	J	ug/L		116	75 - 125	1	20
Silver	ND		200	193		ug/L		97	75 - 125	1	20
Sodium	270000		10000	278000	4	ug/L		37	75 - 125	2	20
Thallium	ND		200	234		ug/L		117	75 - 125	4	20
Silicon	6900		5000	13000		ug/L		123	75 - 125	2	20
Tin	ND		1000	1060		ug/L		106	75 - 125	0	20
Titanium	18	J	1000	982		ug/L		96	75 - 125	1	20
Vanadium	ND		1000	1040		ug/L		104	75 - 125	1	20
Uranium	ND		1000	1240	J	ug/L		124	75 - 125	9	20
Zinc	ND		1000	1120		ug/L		112	75 - 125	1	20

Lab Sample ID: LCS 160-161405/2-A
Matrix: Water
Analysis Batch: 162455

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 161405

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	10000	10500		ug/L		105	80 - 120
Antimony	500	524		ug/L		105	80 - 120
Arsenic	1000	1050		ug/L		105	80 - 120
Barium	1000	1070		ug/L		107	80 - 120
Beryllium	1000	1060		ug/L		106	80 - 120

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 160-161405/2-A
Matrix: Water
Analysis Batch: 162455

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 161405

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	2000	2060		ug/L		103	80 - 120
Cadmium	1000	1060		ug/L		106	80 - 120
Calcium	10000	11500		ug/L		115	80 - 120
Chromium	1000	1100		ug/L		110	80 - 120
Cobalt	1000	1150		ug/L		115	80 - 120
Copper	1000	1100		ug/L		110	80 - 120
Iron	10000	10700		ug/L		107	80 - 120
Lead	1000	1130		ug/L		113	80 - 120
Magnesium	10000	10300		ug/L		103	80 - 120
Manganese	1000	1060		ug/L		106	80 - 120
Molybdenum	500	546		ug/L		109	80 - 120
Nickel	1000	1120		ug/L		112	80 - 120
Potassium	10000	10300		ug/L		103	80 - 120
Selenium	500	528		ug/L		106	80 - 120
Phosphorus	1000	1110		ug/L		111	80 - 120
Silver	200	215		ug/L		107	80 - 120
Sodium	10000	10500		ug/L		105	80 - 120
Thallium	200	227		ug/L		114	80 - 120
Silicon	5000	5140		ug/L		103	80 - 120
Tin	1000	1090		ug/L		109	80 - 120
Titanium	1000	1050		ug/L		105	80 - 120
Vanadium	1000	1050		ug/L		105	80 - 120
Uranium	1000	1120		ug/L		112	80 - 120
Zinc	1000	1090		ug/L		109	80 - 120

Lab Sample ID: LB 160-157719/1-C
Matrix: Water
Analysis Batch: 162455

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 161405

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		200	22	ug/L		12/05/14 12:09	12/10/14 09:32	1
Antimony	ND		10	3.7	ug/L		12/05/14 12:09	12/10/14 09:32	1
Arsenic	ND		10	1.8	ug/L		12/05/14 12:09	12/10/14 09:32	1
Barium	ND		50	2.1	ug/L		12/05/14 12:09	12/10/14 09:32	1
Beryllium	ND		5.0	0.28	ug/L		12/05/14 12:09	12/10/14 09:32	1
Boron	ND		50	7.2	ug/L		12/05/14 12:09	12/10/14 09:32	1
Cadmium	ND		5.0	0.34	ug/L		12/05/14 12:09	12/10/14 09:32	1
Calcium	ND		1000	54	ug/L		12/05/14 12:09	12/10/14 09:32	1
Chromium	ND		10	3.4	ug/L		12/05/14 12:09	12/10/14 09:32	1
Cobalt	ND		50	2.7	ug/L		12/05/14 12:09	12/10/14 09:32	1
Copper	ND		25	2.1	ug/L		12/05/14 12:09	12/10/14 09:32	1
Iron	ND		100	13	ug/L		12/05/14 12:09	12/10/14 09:32	1
Lead	ND		10	0.60	ug/L		12/05/14 12:09	12/10/14 09:32	1
Magnesium	ND		1000	51	ug/L		12/05/14 12:09	12/10/14 09:32	1
Manganese	ND		15	1.0	ug/L		12/05/14 12:09	12/10/14 09:32	1
Molybdenum	ND		40	1.9	ug/L		12/05/14 12:09	12/10/14 09:32	1
Nickel	ND		40	2.6	ug/L		12/05/14 12:09	12/10/14 09:32	1
Potassium	ND		5000	460	ug/L		12/05/14 12:09	12/10/14 09:32	1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LB 160-157719/1-C
Matrix: Water
Analysis Batch: 162455

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 161405

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	ND		15	2.1	ug/L		12/05/14 12:09	12/10/14 09:32	1
Phosphorus	ND		250	14	ug/L		12/05/14 12:09	12/10/14 09:32	1
Silver	ND		10	0.99	ug/L		12/05/14 12:09	12/10/14 09:32	1
Sodium	ND		1000	110	ug/L		12/05/14 12:09	12/10/14 09:32	1
Thallium	2.70	J	20	2.4	ug/L		12/05/14 12:09	12/10/14 09:32	1
Silicon	ND		400	20	ug/L		12/05/14 12:09	12/10/14 09:32	1
Tin	ND		100	5.0	ug/L		12/05/14 12:09	12/10/14 09:32	1
Titanium	ND		20	1.3	ug/L		12/05/14 12:09	12/10/14 09:32	1
Vanadium	ND		50	4.4	ug/L		12/05/14 12:09	12/10/14 09:32	1
Uranium	ND		500	26	ug/L		12/05/14 12:09	12/10/14 09:32	1
Zinc	ND		20	8.3	ug/L		12/05/14 12:09	12/10/14 09:32	1

Lab Sample ID: 160-9438-2 MS
Matrix: Water
Analysis Batch: 162455

Client Sample ID: MW359-20141113-21
Prep Type: Dissolved
Prep Batch: 161405

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	ND		10000	8620		ug/L		86	75 - 125
Antimony	ND		500	477		ug/L		95	75 - 125
Arsenic	24	J	1000	952		ug/L		93	75 - 125
Barium	ND		1000	865		ug/L		87	75 - 125
Beryllium	ND		1000	858		ug/L		86	75 - 125
Boron	300	J	2000	2010		ug/L		85	75 - 125
Cadmium	ND		1000	932		ug/L		93	75 - 125
Calcium	470000		10000	490000	4	ug/L		157	75 - 125
Chromium	ND		1000	882		ug/L		88	75 - 125
Cobalt	ND		1000	1000		ug/L		100	75 - 125
Copper	ND		1000	960		ug/L		96	75 - 125
Iron	130	J	10000	8970		ug/L		90	75 - 125
Lead	ND		1000	978		ug/L		98	75 - 125
Magnesium	220000		10000	233000	4	ug/L		176	75 - 125
Manganese	110	J	1000	974		ug/L		87	75 - 125
Molybdenum	ND		500	485		ug/L		97	75 - 125
Nickel	ND		1000	973		ug/L		97	75 - 125
Potassium	5800	J	10000	14600	J	ug/L		88	75 - 125
Selenium	ND		500	443		ug/L		89	75 - 125
Phosphorus	ND		1000	1020	J	ug/L		102	75 - 125
Silver	ND		200	165		ug/L		83	75 - 125
Sodium	350000		10000	373000	4	ug/L		246	75 - 125
Thallium	28	J B	200	223		ug/L		98	75 - 125
Silicon	3800	J	5000	8410		ug/L		93	75 - 125
Tin	ND		1000	953	J	ug/L		95	75 - 125
Titanium	22	J	1000	864		ug/L		84	75 - 125
Vanadium	ND		1000	853		ug/L		85	75 - 125
Uranium	ND		1000	449	J F1	ug/L		45	75 - 125
Zinc	ND		1000	988		ug/L		99	75 - 125

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 160-9438-2 MSD
Matrix: Water
Analysis Batch: 162455

Client Sample ID: MW359-20141113-21
Prep Type: Dissolved
Prep Batch: 161405

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aluminum	ND		10000	9650		ug/L		96	75 - 125	11	20
Antimony	ND		500	468		ug/L		94	75 - 125	2	20
Arsenic	24	J	1000	961		ug/L		94	75 - 125	1	20
Barium	ND		1000	954		ug/L		95	75 - 125	10	20
Beryllium	ND		1000	932		ug/L		93	75 - 125	8	20
Boron	300	J	2000	2130		ug/L		92	75 - 125	6	20
Cadmium	ND		1000	940		ug/L		94	75 - 125	1	20
Calcium	470000		10000	484000	4	ug/L		94	75 - 125	1	20
Chromium	ND		1000	936		ug/L		94	75 - 125	6	20
Cobalt	ND		1000	1010		ug/L		101	75 - 125	1	20
Copper	ND		1000	937		ug/L		94	75 - 125	2	20
Iron	130	J	10000	9700		ug/L		97	75 - 125	8	20
Lead	ND		1000	999		ug/L		100	75 - 125	2	20
Magnesium	220000		10000	245000	4	ug/L		292	75 - 125	5	20
Manganese	110	J	1000	1050		ug/L		94	75 - 125	8	20
Molybdenum	ND		500	491		ug/L		98	75 - 125	1	20
Nickel	ND		1000	985		ug/L		99	75 - 125	1	20
Potassium	5800	J	10000	15600	J	ug/L		98	75 - 125	6	20
Selenium	ND		500	461		ug/L		92	75 - 125	4	20
Phosphorus	ND		1000	1000	J	ug/L		100	75 - 125	1	20
Silver	ND		200	182		ug/L		91	75 - 125	10	20
Sodium	350000		10000	399000	4	ug/L		513	75 - 125	7	20
Thallium	28	J B	200	225		ug/L		99	75 - 125	1	20
Silicon	3800	J	5000	9430		ug/L		113	75 - 125	11	20
Tin	ND		1000	959	J	ug/L		96	75 - 125	1	20
Titanium	22	J	1000	951		ug/L		93	75 - 125	10	20
Vanadium	ND		1000	922		ug/L		92	75 - 125	8	20
Uranium	ND		1000	413	J F1	ug/L		41	75 - 125	8	20
Zinc	ND		1000	1000		ug/L		100	75 - 125	1	20

Lab Sample ID: LRC 160-161515/10
Matrix: Water
Analysis Batch: 161515

Client Sample ID: Lab Control Sample

Analyte			Spike Added	LRC Result	LRC Qualifier	Unit	D	%Rec	%Rec. Limits		
Aluminum			100000	99100		ug/L		99	90 - 110		
Antimony			2000	1980		ug/L		99	90 - 110		
Arsenic			10000	9890		ug/L		99	90 - 110		
Barium			10000	9760		ug/L		98	90 - 110		
Beryllium			10000	9680		ug/L		97	90 - 110		
Boron			10000	9800		ug/L		98	90 - 110		
Cadmium			10000	9790		ug/L		98	90 - 110		
Calcium			100000	96900		ug/L		97	90 - 110		
Chromium			10000	9730		ug/L		97	90 - 110		
Cobalt			10000	9730		ug/L		97	90 - 110		
Copper			10000	9800		ug/L		98	90 - 110		
Iron			100000	98200		ug/L		98	90 - 110		
Lead			10000	9730		ug/L		97	90 - 110		

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LRC 160-161515/10
Matrix: Water
Analysis Batch: 161515

Client Sample ID: Lab Control Sample

Analyte	Spike Added	LRC Result	LRC Qualifier	Unit	D	%Rec	%Rec. Limits
Magnesium	100000	98100		ug/L		98	90 - 110
Manganese	10000	9780		ug/L		98	90 - 110
Molybdenum	2000	1960		ug/L		98	90 - 110
Nickel	10000	9720		ug/L		97	90 - 110
Potassium	100000	99400		ug/L		99	90 - 110
Selenium	2000	1990		ug/L		100	90 - 110
Phosphorus	100000	97400		ug/L		97	90 - 110
Silver	2000	1950		ug/L		98	90 - 110
Sodium	100000	97800		ug/L		98	90 - 110
Thallium	2000	1930		ug/L		97	90 - 110
Silicon	10000	9850		ug/L		98	90 - 110
Tin	10000	9750		ug/L		97	90 - 110
Titanium	10000	9800		ug/L		98	90 - 110
Vanadium	10000	9750		ug/L		97	90 - 110
Uranium	10000	9680		ug/L		97	90 - 110
Zinc	10000	9770		ug/L		98	90 - 110

Lab Sample ID: LRC 160-162455/10
Matrix: Water
Analysis Batch: 162455

Client Sample ID: Lab Control Sample

Analyte	Spike Added	LRC Result	LRC Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	100000	101000		ug/L		101	90 - 110
Antimony	2000	1990		ug/L		100	90 - 110
Arsenic	10000	9960		ug/L		100	90 - 110
Barium	10000	10100		ug/L		101	90 - 110
Beryllium	10000	10000		ug/L		100	90 - 110
Boron	10000	9960		ug/L		100	90 - 110
Cadmium	10000	9910		ug/L		99	90 - 110
Calcium	100000	99500		ug/L		99	90 - 110
Chromium	10000	9990		ug/L		100	90 - 110
Cobalt	10000	9900		ug/L		99	90 - 110
Copper	10000	9890		ug/L		99	90 - 110
Iron	100000	99400		ug/L		99	90 - 110
Lead	10000	9880		ug/L		99	90 - 110
Magnesium	100000	101000		ug/L		101	90 - 110
Manganese	10000	9940		ug/L		99	90 - 110
Molybdenum	2000	2000		ug/L		100	90 - 110
Nickel	10000	9890		ug/L		99	90 - 110
Potassium	100000	101000		ug/L		101	90 - 110
Selenium	2000	2000		ug/L		100	90 - 110
Phosphorus	100000	99000		ug/L		99	90 - 110
Silver	2000	2020		ug/L		101	90 - 110
Sodium	100000	100000		ug/L		100	90 - 110
Thallium	2000	1970		ug/L		98	90 - 110
Silicon	10000	10000		ug/L		100	90 - 110
Tin	10000	9900		ug/L		99	90 - 110
Titanium	10000	9990		ug/L		100	90 - 110

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LRC 160-162455/10 — **Client Sample ID: Lab Control Sample**
Matrix: Water
Analysis Batch: 162455

Analyte	Spike Added	LRC Result	LRC Qualifier	Unit	D	%Rec	%Rec. Limits
Vanadium	10000	9970		ug/L		100	90 - 110
Uranium	10000	10100		ug/L		101	90 - 110
Zinc	10000	9900		ug/L		99	90 - 110

Method: 7470A - Mercury (CVAA)

Lab Sample ID: LCS 160-158127/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 158460 — **Prep Batch: 158127**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	5.00	5.36		ug/L		107	80 - 120

Lab Sample ID: MB 160-158128/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 158460 — **Prep Batch: 158128**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.060	ug/L		11/19/14 11:07	11/19/14 15:39	1

Lab Sample ID: LCS 160-158128/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 158460 — **Prep Batch: 158128**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	5.00	4.84		ug/L		97	80 - 120

Lab Sample ID: LB 160-157719/1-B — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 158460 — **Prep Batch: 158127**

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.060	ug/L		11/19/14 11:06	11/19/14 15:22	1

Lab Sample ID: 160-9438-1 MS — **Client Sample ID: MW358-20141113-21**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 158460 — **Prep Batch: 158127**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.12	J	5.00	5.32		ug/L		104	80 - 120

Lab Sample ID: 160-9438-1 MSD — **Client Sample ID: MW358-20141113-21**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 158460 — **Prep Batch: 158127**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.12	J	5.00	5.13		ug/L		100	80 - 120	4	20

Method: 150.1 - pH (Electrometric)

Lab Sample ID: LCS 160-157000/5
Matrix: Water
Analysis Batch: 157000

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
pH			7.00	7.010		SU		100	99.0 - 101.0		

Lab Sample ID: 160-9438-2 DU
Matrix: Water
Analysis Batch: 157000

Client Sample ID: MW359-20141113-21
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
pH	7.20	HF		7.220		SU				0.3	5

Method: 160.1 - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 160-158738/1
Matrix: Water
Analysis Batch: 158738

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		5.0	3.5	mg/L			11/20/14 08:30	1

Lab Sample ID: LCS 160-158738/2
Matrix: Water
Analysis Batch: 158738

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Dissolved Solids (TDS)			500	511		mg/L		102	90 - 110		

Lab Sample ID: 160-9438-1 DU
Matrix: Water
Analysis Batch: 158738

Client Sample ID: MW358-20141113-21
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids (TDS)	3600			3530		mg/L				0.8	20

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 160-158759/3
Matrix: Water
Analysis Batch: 158759

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.020	0.0040	mg/L			11/15/14 13:10	1
Nitrite as N	ND		0.020	0.0030	mg/L			11/15/14 13:10	1
Chloride	ND		0.20	0.020	mg/L			11/15/14 13:10	1
Sulfate	ND		0.50	0.050	mg/L			11/15/14 13:10	1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 160-158759/4
Matrix: Water
Analysis Batch: 158759

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.400	0.399		mg/L		100	90 - 110
Nitrite as N	0.160	0.151		mg/L		94	90 - 110
Chloride	2.00	1.95		mg/L		98	90 - 110
Sulfate	8.00	7.78		mg/L		97	90 - 110

Lab Sample ID: MB 160-158944/9
Matrix: Water
Analysis Batch: 158944

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	ND		0.020	0.0030	mg/L			11/14/14 10:50	1
Fluoride	ND		0.10	0.010	mg/L			11/14/14 10:50	1
Bromide	ND		0.25	0.025	mg/L			11/14/14 10:50	1
Sulfate	ND		0.50	0.050	mg/L			11/14/14 10:50	1
Orthophosphate	ND		0.50	0.078	mg/L			11/14/14 10:50	1

Lab Sample ID: LCS 160-158944/10
Matrix: Water
Analysis Batch: 158944

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrite as N	0.160	0.165		mg/L		103	90 - 110
Fluoride	1.00	0.999		mg/L		100	90 - 110
Bromide	2.00	2.03		mg/L		102	90 - 110
Sulfate	8.00	7.72		mg/L		96	90 - 110
Orthophosphate	8.00	7.78		mg/L		97	90 - 110

Method: 310.1 - Alkalinity

Lab Sample ID: MB 160-158800/1
Matrix: Water
Analysis Batch: 158800

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	1.25	J	1.3	0.14	mg/L			11/21/14 14:46	1
Bicarbonate Alkalinity as CaCO3	1.25	J	1.3	0.14	mg/L			11/21/14 14:46	1
Carbonate Alkalinity as CaCO3	ND		1.3	0.14	mg/L			11/21/14 14:46	1

Lab Sample ID: HLCS 160-158800/3
Matrix: Water
Analysis Batch: 158800

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	HLCS Result	HLCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	400	374		mg/L		94	90 - 110
Bicarbonate Alkalinity as CaCO3	400	374		mg/L		94	90 - 110

Method: 310.1 - Alkalinity (Continued)

Lab Sample ID: LCS 160-158800/2
Matrix: Water
Analysis Batch: 158800

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Alkalinity			200	186		mg/L		93	90 - 110		
Bicarbonate Alkalinity as CaCO3			200	186		mg/L		93	90 - 110		

Lab Sample ID: 160-9438-1 MS
Matrix: Water
Analysis Batch: 158800

Client Sample ID: MW358-20141113-21
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Alkalinity	160	B	100	248		mg/L		84	80 - 120		
Bicarbonate Alkalinity as CaCO3	160	B	100	248		mg/L		84	80 - 120		

Lab Sample ID: 160-9438-1 DU
Matrix: Water
Analysis Batch: 158800

Client Sample ID: MW358-20141113-21
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Alkalinity	160	B		166		mg/L				1	20
Bicarbonate Alkalinity as CaCO3	160	B		166		mg/L				1	20
Carbonate Alkalinity as CaCO3	ND			ND		mg/L				NC	20

Method: 9310 - Gross Alpha / Beta (GFPC)

Lab Sample ID: MB 160-158146/1-A
Matrix: Water
Analysis Batch: 159374

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 158146

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	1.140	U	0.925	0.934	3.00	1.41	pCi/L	11/19/14 12:09	11/23/14 19:35	1
Gross Beta	0.3974	U	0.560	0.562	4.00	0.911	pCi/L	11/19/14 12:09	11/23/14 19:35	1

Lab Sample ID: LCS 160-158146/2-A
Matrix: Water
Analysis Batch: 159374

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 158146

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Gross Alpha			50.1	55.39		8.10	3.00	2.49	pCi/L	111	73 - 133		

Lab Sample ID: LCSB 160-158146/3-A
Matrix: Water
Analysis Batch: 159374

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 158146

Analyte			Spike Added	LCSB Result	LCSB Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Gross Beta			96.2	99.25		10.5	4.00	1.13	pCi/L	103	75 - 125		

Method: A-01-R - Isotopic Thorium (Alpha Spectrometry)

Lab Sample ID: MB 160-158130/1-A
Matrix: Water
Analysis Batch: 159070

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 158130

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Thorium-228	0.05362	U	0.0852	0.0853	1.00	0.148	pCi/L	11/19/14 11:12	11/23/14 22:34	1
Thorium-230	0.2173		0.0971	0.0988	1.00	0.0583	pCi/L	11/19/14 11:12	11/23/14 22:34	1
Thorium-232	0.001750	U	0.0244	0.0244	1.00	0.0691	pCi/L	11/19/14 11:12	11/23/14 22:34	1
Thorium-227	0.01052	U	0.0820	0.0820	1.00	0.162	pCi/L	11/19/14 11:12	11/23/14 22:34	1

Tracer	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Thorium-229	*80.6*		*30 - 110*	*11/19/14 11:12*	*11/23/14 22:34*	*1*

Lab Sample ID: LCS 160-158130/2-A
Matrix: Water
Analysis Batch: 159071

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 158130

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Thorium-230			8.03	7.990		0.881	1.00	0.0307	pCi/L	100	81 - 125		

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Thorium-229	*84.0*		*30 - 110*

Lab Sample ID: 160-9438-1 DU
Matrix: Water
Analysis Batch: 159623

Client Sample ID: MW358-20141113-21
Prep Type: Total/NA
Prep Batch: 158130

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Thorium-228	0.147	U		0.1869	U	0.401	1.00	0.729	pCi/L			0.05	1
Thorium-230	0.790			0.6887		0.425	1.00	0.469	pCi/L			0.12	1
Thorium-232	0.0949	U		0.01692	U	0.167	1.00	0.409	pCi/L			0.26	1
Thorium-227	0.150	U		0.1738	U	0.321	1.00	0.579	pCi/L			0.04	1

Tracer	*DU %Yield*	*DU Qualifier*	*Limits*
Thorium-229	*83.8*		*30 - 110*

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Lab Sample ID: MB 160-158134/1-A
Matrix: Water
Analysis Batch: 158845

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 158134

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Uranium-233/234	0.03001		0.0347	0.0347	1.00	0.0300	pCi/L	11/19/14 11:12	11/21/14 16:13	1
Uranium-235/236	-0.01556	U	0.0180	0.0180	1.00	0.0919	pCi/L	11/19/14 11:12	11/21/14 16:13	1
Uranium-238	0.02330	U	0.0433	0.0433	1.00	0.0804	pCi/L	11/19/14 11:12	11/21/14 16:13	1

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry) (Continued)

Lab Sample ID: MB 160-158134/1-A
Matrix: Water
Analysis Batch: 158845

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 158134

Tracer	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Uranium-232	86.1		30 - 110	11/19/14 11:12	11/21/14 16:13	1

Lab Sample ID: LCS 160-158134/2-A
Matrix: Water
Analysis Batch: 158846

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 158134

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Uranium-233/234			12.7	13.50		1.39	1.00	0.0875	pCi/L	106	84 - 120		
Uranium-238			13.0	13.79		1.41	1.00	0.0654	pCi/L	106	83 - 121		

Tracer	LCS %Yield	LCS Qualifier	Limits
Uranium-232	72.8		30 - 110

Lab Sample ID: 160-9438-1 DU
Matrix: Water
Analysis Batch: 158848

Client Sample ID: MW358-20141113-21
Prep Type: Total/NA
Prep Batch: 158134

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Uranium-233/234	9.01			9.128		1.61	1.00	0.303	pCi/L			0.04	1
Uranium-235/236	0.265			0.1193	U	0.256	1.00	0.503	pCi/L			0.28	1
Uranium-238	5.35			4.658		1.09	1.00	0.360	pCi/L			0.31	1

Tracer	DU %Yield	DU Qualifier	Limits
Uranium-232	80.5		30 - 110

Metals

Filtration Batch: 157719

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-9438-1	MW358-20141113-21	Dissolved	Water	FILTRATION	
160-9438-1 MS	MW358-20141113-21	Dissolved	Water	FILTRATION	
160-9438-1 MSD	MW358-20141113-21	Dissolved	Water	FILTRATION	
160-9438-1 SD	MW358-20141113-21	Dissolved	Water	FILTRATION	
160-9438-2	MW359-20141113-21	Dissolved	Water	FILTRATION	
160-9438-2 MS	MW359-20141113-21	Dissolved	Water	FILTRATION	
160-9438-2 MSD	MW359-20141113-21	Dissolved	Water	FILTRATION	
160-9438-2 SD	MW359-20141113-21	Dissolved	Water	FILTRATION	
LB 160-157719/1-B	Method Blank	Dissolved	Water	FILTRATION	
LB 160-157719/1-C	Method Blank	Dissolved	Water	FILTRATION	

Prep Batch: 158127

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-9438-1	MW358-20141113-21	Dissolved	Water	7470A	157719
160-9438-1 MS	MW358-20141113-21	Dissolved	Water	7470A	157719
160-9438-1 MSD	MW358-20141113-21	Dissolved	Water	7470A	157719
160-9438-1 SD	MW358-20141113-21	Dissolved	Water	7470A	157719
160-9438-2	MW359-20141113-21	Dissolved	Water	7470A	157719
LB 160-157719/1-B	Method Blank	Dissolved	Water	7470A	157719
LCS 160-158127/2-A	Lab Control Sample	Total/NA	Water	7470A	

Prep Batch: 158128

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-9438-1	MW358-20141113-21	Total/NA	Water	7470A	
160-9438-2	MW359-20141113-21	Total/NA	Water	7470A	
LCS 160-158128/2-A	Lab Control Sample	Total/NA	Water	7470A	
MB 160-158128/1-A	Method Blank	Total/NA	Water	7470A	

Analysis Batch: 158460

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-9438-1	MW358-20141113-21	Dissolved	Water	7470A	158127
160-9438-1	MW358-20141113-21	Total/NA	Water	7470A	158128
160-9438-1 MS	MW358-20141113-21	Dissolved	Water	7470A	158127
160-9438-1 MSD	MW358-20141113-21	Dissolved	Water	7470A	158127
160-9438-1 SD	MW358-20141113-21	Dissolved	Water	7470A	158127
160-9438-2	MW359-20141113-21	Dissolved	Water	7470A	158127
160-9438-2	MW359-20141113-21	Total/NA	Water	7470A	158128
LB 160-157719/1-B	Method Blank	Dissolved	Water	7470A	158127
LCS 160-158127/2-A	Lab Control Sample	Total/NA	Water	7470A	158127
LCS 160-158128/2-A	Lab Control Sample	Total/NA	Water	7470A	158128
MB 160-158128/1-A	Method Blank	Total/NA	Water	7470A	158128

Prep Batch: 160137

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-9438-1	MW358-20141113-21	Total/NA	Water	3010A	
160-9438-1 MS	MW358-20141113-21	Total/NA	Water	3010A	
160-9438-1 MSD	MW358-20141113-21	Total/NA	Water	3010A	
160-9438-1 SD	MW358-20141113-21	Total/NA	Water	3010A	
160-9438-2	MW359-20141113-21	Total/NA	Water	3010A	
LCS 160-160137/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 160-160137/1-A	Method Blank	Total/NA	Water	3010A	

Metals (Continued)

Prep Batch: 161405

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-9438-1	MW358-20141113-21	Dissolved	Water	3010A	157719
160-9438-2	MW359-20141113-21	Dissolved	Water	3010A	157719
160-9438-2 MS	MW359-20141113-21	Dissolved	Water	3010A	157719
160-9438-2 MSD	MW359-20141113-21	Dissolved	Water	3010A	157719
160-9438-2 SD	MW359-20141113-21	Dissolved	Water	3010A	157719
LB 160-157719/1-C	Method Blank	Dissolved	Water	3010A	157719
LCS 160-161405/2-A	Lab Control Sample	Total/NA	Water	3010A	

Analysis Batch: 161515

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-9438-1	MW358-20141113-21	Total/NA	Water	6010C	160137
160-9438-1 MS	MW358-20141113-21	Total/NA	Water	6010C	160137
160-9438-1 MSD	MW358-20141113-21	Total/NA	Water	6010C	160137
160-9438-1 SD	MW358-20141113-21	Total/NA	Water	6010C	160137
160-9438-2	MW359-20141113-21	Total/NA	Water	6010C	160137
CRI 160-161515/7	DL		Water	6010C	
ICSA 160-161515/8	ICS		Water	6010C	
ICSAB 160-161515/9	ICS		Water	6010C	
LCS 160-160137/2-A	Lab Control Sample	Total/NA	Water	6010C	160137
LRC 160-161515/10	Lab Control Sample		Water	6010C	
MB 160-160137/1-A	Method Blank	Total/NA	Water	6010C	160137

Analysis Batch: 162455

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-9438-1	MW358-20141113-21	Dissolved	Water	6010C	161405
160-9438-2	MW359-20141113-21	Dissolved	Water	6010C	161405
160-9438-2 MS	MW359-20141113-21	Dissolved	Water	6010C	161405
160-9438-2 MSD	MW359-20141113-21	Dissolved	Water	6010C	161405
160-9438-2 SD	MW359-20141113-21	Dissolved	Water	6010C	161405
CRI 160-162455/7	DL		Water	6010C	
ICSA 160-162455/8	ICS		Water	6010C	
ICSAB 160-162455/9	ICS		Water	6010C	
LB 160-157719/1-C	Method Blank	Dissolved	Water	6010C	161405
LCS 160-161405/2-A	Lab Control Sample	Total/NA	Water	6010C	161405
LRC 160-162455/10	Lab Control Sample		Water	6010C	

General Chemistry

Analysis Batch: 157000

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-9438-1	MW358-20141113-21	Total/NA	Water	150.1	
160-9438-2	MW359-20141113-21	Total/NA	Water	150.1	
160-9438-2 DU	MW359-20141113-21	Total/NA	Water	150.1	
LCS 160-157000/5	Lab Control Sample	Total/NA	Water	150.1	

Analysis Batch: 158738

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-9438-1	MW358-20141113-21	Total/NA	Water	160.1	
160-9438-1 DU	MW358-20141113-21	Total/NA	Water	160.1	
160-9438-2	MW359-20141113-21	Total/NA	Water	160.1	

General Chemistry (Continued)

Analysis Batch: 158738 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 160-158738/2	Lab Control Sample	Total/NA	Water	160.1	
MB 160-158738/1	Method Blank	Total/NA	Water	160.1	

Analysis Batch: 158759

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-9438-1 - DL	MW358-20141113-21	Total/NA	Water	300.0	
160-9438-1 - DL2	MW358-20141113-21	Total/NA	Water	300.0	
160-9438-2 - DL	MW359-20141113-21	Total/NA	Water	300.0	
160-9438-2 - DL3	MW359-20141113-21	Total/NA	Water	300.0	
LCS 160-158759/4	Lab Control Sample	Total/NA	Water	300.0	
MB 160-158759/3	Method Blank	Total/NA	Water	300.0	

Analysis Batch: 158800

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-9438-1	MW358-20141113-21	Total/NA	Water	310.1	
160-9438-1 DU	MW358-20141113-21	Total/NA	Water	310.1	
160-9438-1 MS	MW358-20141113-21	Total/NA	Water	310.1	
160-9438-2	MW359-20141113-21	Total/NA	Water	310.1	
HLCS 160-158800/3	Lab Control Sample	Total/NA	Water	310.1	
LCS 160-158800/2	Lab Control Sample	Total/NA	Water	310.1	
MB 160-158800/1	Method Blank	Total/NA	Water	310.1	

Analysis Batch: 158944

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-9438-1	MW358-20141113-21	Total/NA	Water	300.0	
160-9438-2	MW359-20141113-21	Total/NA	Water	300.0	
LCS 160-158944/10	Lab Control Sample	Total/NA	Water	300.0	
MB 160-158944/9	Method Blank	Total/NA	Water	300.0	

Rad

Prep Batch: 158130

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-9438-1	MW358-20141113-21	Total/NA	Water	ExtChrom	
160-9438-1 DU	MW358-20141113-21	Total/NA	Water	ExtChrom	
160-9438-2	MW359-20141113-21	Total/NA	Water	ExtChrom	
LCS 160-158130/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	
MB 160-158130/1-A	Method Blank	Total/NA	Water	ExtChrom	

Prep Batch: 158134

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-9438-1	MW358-20141113-21	Total/NA	Water	ExtChrom	
160-9438-1 DU	MW358-20141113-21	Total/NA	Water	ExtChrom	
160-9438-2	MW359-20141113-21	Total/NA	Water	ExtChrom	
LCS 160-158134/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	
MB 160-158134/1-A	Method Blank	Total/NA	Water	ExtChrom	

Prep Batch: 158146

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-9438-1	MW358-20141113-21	Total/NA	Water	Evaporation	

Rad (Continued)

Prep Batch: 158146 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-9438-2	MW359-20141113-21	Total/NA	Water	Evaporation	
LCS 160-158146/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
LCSB 160-158146/3-A	Lab Control Sample	Total/NA	Water	Evaporation	
MB 160-158146/1-A	Method Blank	Total/NA	Water	Evaporation	

Analysis Batch: 106023

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
ACVABT 160-106023/1	ACV			GFPC_SUM	
ACVABT 160-106023/2	ACV			GFPC_SUM	
ACVABT 160-106023/3	ACV			GFPC_SUM	
ACVABT 160-106023/4	ACV			GFPC_SUM	
ACVABT 160-106023/5	ACV			GFPC_SUM	
ACVABT 160-106023/6	ACV			GFPC_SUM	

Analysis Batch: 106024

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
ACVABT 160-106024/1	ACV			GFPC_SUM	
ACVABT 160-106024/2	ACV			GFPC_SUM	
ACVABT 160-106024/3	ACV			GFPC_SUM	
ACVABT 160-106024/4	ACV			GFPC_SUM	
ACVABT 160-106024/5	ACV			GFPC_SUM	
ACVABT 160-106024/6	ACV			GFPC_SUM	

Client Sample ID: MW358-20141113-21

Lab Sample ID: 160-9438-1

Date Collected: 11/13/14 12:05

Matrix: Water

Date Received: 11/14/14 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	FILTRATION			157719	11/18/14 06:18	JWM	TAL SL
Dissolved	Prep	3010A			161405	12/05/14 12:09	SMD	TAL SL
Dissolved	Analysis	6010C		10	162455	12/10/14 09:39	FLC	TAL SL
Total/NA	Prep	3010A			160137	12/01/14 10:49	SMD	TAL SL
Total/NA	Analysis	6010C		10	161515	12/05/14 15:44	FLC	TAL SL
Dissolved	Filtration	FILTRATION			157719	11/18/14 06:18	JWM	TAL SL
Dissolved	Prep	7470A			158127	11/19/14 11:06	MTS	TAL SL
Dissolved	Analysis	7470A		1	158460	11/19/14 15:26	MTS	TAL SL
Total/NA	Prep	7470A			158128	11/19/14 11:07	MTS	TAL SL
Total/NA	Analysis	7470A		1	158460	11/19/14 15:58	MTS	TAL SL
Total/NA	Analysis	150.1		1	157000	11/14/14 11:57	MFM	TAL SL
Total/NA	Analysis	160.1		1	158738	11/20/14 08:30	BAT	TAL SL
Total/NA	Analysis	300.0		1	158944	11/14/14 17:47	AMF	TAL SL
Total/NA	Analysis	300.0	DL	100	158759	11/15/14 19:12	AMF	TAL SL
Total/NA	Analysis	300.0	DL2	500	158759	11/15/14 19:26	AMF	TAL SL
Total/NA	Analysis	310.1		1	158800	11/21/14 14:46	BAT	TAL SL
Total/NA	Prep	Evaporation			158146	11/19/14 12:09	JH	TAL SL
Total/NA	Analysis	9310		1	159787	11/25/14 07:52	AS1	TAL SL
Total/NA	Prep	ExtChrom			158134	11/19/14 11:12	SCB	TAL SL
Total/NA	Analysis	A-01-R		1	158847	11/21/14 16:13	MLK	TAL SL
Total/NA	Prep	ExtChrom			158130	11/19/14 11:12	SCB	TAL SL
Total/NA	Analysis	A-01-R		1	159622	11/24/14 19:53	MLK	TAL SL

Client Sample ID: MW359-20141113-21

Lab Sample ID: 160-9438-2

Date Collected: 11/13/14 13:45

Matrix: Water

Date Received: 11/14/14 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	FILTRATION			157719	11/18/14 06:18	JWM	TAL SL
Dissolved	Prep	3010A			161405	12/05/14 12:09	SMD	TAL SL
Dissolved	Analysis	6010C		10	162455	12/10/14 09:43	FLC	TAL SL
Total/NA	Prep	3010A			160137	12/01/14 10:49	SMD	TAL SL
Total/NA	Analysis	6010C		10	161515	12/05/14 16:00	FLC	TAL SL
Dissolved	Filtration	FILTRATION			157719	11/18/14 06:18	JWM	TAL SL
Dissolved	Prep	7470A			158127	11/19/14 11:06	MTS	TAL SL
Dissolved	Analysis	7470A		1	158460	11/19/14 15:36	MTS	TAL SL
Total/NA	Prep	7470A			158128	11/19/14 11:07	MTS	TAL SL
Total/NA	Analysis	7470A		1	158460	11/19/14 16:01	MTS	TAL SL
Total/NA	Analysis	150.1		1	157000	11/14/14 11:57	MFM	TAL SL
Total/NA	Analysis	160.1		1	158738	11/20/14 08:30	BAT	TAL SL
Total/NA	Analysis	300.0		1	158944	11/14/14 18:29	AMF	TAL SL
Total/NA	Analysis	300.0	DL	20	158759	11/15/14 19:40	AMF	TAL SL
Total/NA	Analysis	300.0	DL3	500	158759	11/15/14 20:07	AMF	TAL SL

Lab Chronicle

Client: Weston Solutions, Inc.
Project/Site: START Site in New Mexico

TestAmerica Job ID: 160-9438-1

Client Sample ID: MW359-20141113-21
Date Collected: 11/13/14 13:45
Date Received: 11/14/14 09:20

Lab Sample ID: 160-9438-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	310.1		1	158800	11/21/14 14:46	BAT	TAL SL
Total/NA	Prep	Evaporation			158146	11/19/14 12:09	JH	TAL SL
Total/NA	Analysis	9310		1	159374	11/23/14 19:36	AS1	TAL SL
Total/NA	Prep	ExtChrom			158134	11/19/14 11:12	SCB	TAL SL
Total/NA	Analysis	A-01-R		1	158849	11/21/14 16:13	MLK	TAL SL
Total/NA	Prep	ExtChrom			158130	11/19/14 11:12	SCB	TAL SL
Total/NA	Analysis	A-01-R		1	159074	11/23/14 22:34	MLK	TAL SL

Laboratory References:

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Certification Summary

Client: Weston Solutions, Inc.
Project/Site: START Site in New Mexico

TestAmerica Job ID: 160-9438-1

Laboratory: TestAmerica St. Louis

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	MO00054	06-30-15
California	NELAP	9	2886	03-31-15
Connecticut	State Program	1	PH-0241	03-31-15
Florida	NELAP	4	E87689	06-30-15
Illinois	NELAP	5	200023	11-30-15
Iowa	State Program	7	373	12-01-16
Kansas	NELAP	7	E-10236	03-31-15 *
Kentucky (DW)	State Program	4	90125	12-31-15
L-A-B	DoD ELAP		L2305	01-10-16
Louisiana	NELAP	6	LA150017	12-31-16
Maryland	State Program	3	310	09-30-15
Missouri	State Program	7	780	06-30-15
Nevada	State Program	9	MO000542013-1	07-31-15
New Jersey	NELAP	2	MO002	06-30-15
New Mexico	State Program	6		06-30-10 *
New York	NELAP	2	11616	03-31-15 *
North Dakota	State Program	8	R207	06-30-15
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-15
Pennsylvania	NELAP	3	68-00540	02-28-15 *
South Carolina	State Program	4	85002001	06-30-15
Texas	NELAP	6	T104704193-13-6	07-31-15
USDA	Federal		P330-07-00122	01-09-17
Utah	NELAP	8	MO000542013-5	07-31-15
Virginia	NELAP	3	460230	06-14-15
Washington	State Program	10	C592	08-30-15
West Virginia DEP	State Program	3	381	08-31-15

* Certification renewal pending - certification considered valid.

Method Summary

Client: Weston Solutions, Inc.
Project/Site: START Site in New Mexico

TestAmerica Job ID: 160-9438-1

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	TAL SL
7470A	Mercury (CVAA)	SW846	TAL SL
150.1	pH (Electrometric)	MCAWW	TAL SL
160.1	Solids, Total Dissolved (TDS)	MCAWW	TAL SL
300.0	Anions, Ion Chromatography	MCAWW	TAL SL
310.1	Alkalinity	MCAWW	TAL SL
9310	Gross Alpha / Beta (GFPC)	SW846	TAL SL
A-01-R	Isotopic Thorium (Alpha Spectrometry)	DOE	TAL SL
A-01-R	Isotopic Uranium (Alpha Spectrometry)	DOE	TAL SL
GFPC_SUM			TAL SL

Protocol References:

DOE = U.S. Department of Energy

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Weston Solutions, Inc.
Project/Site: START Site in New Mexico

TestAmerica Job ID: 160-9438-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
160-9438-1	MW358-20141113-21	Water	11/13/14 12:05	11/14/14 09:20
160-9438-2	MW359-20141113-21	Water	11/13/14 13:45	11/14/14 09:20

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
82232-334_00001	06/03/60		Eckert & Ziegler, Lot 82232-334		(Purchased Reagent)		Am-241	7.281 Bq
							Pu-239	7.137 Bq
							Thorium-230	7.63 Bq
82234-334_00001	06/02/60		Eckert & Zigler, Lot 82234-334		(Purchased Reagent)		Am-241	5.652 Bq
							Pu-239	5.936 Bq
							Thorium-230	5.685 Bq
82235-334_00001	06/04/60		Eckert & Ziegler, Lot 82235-334		(Purchased Reagent)		Am-241	7.466 Bq
							Pu-239	6.897 Bq
							Thorium-230	7.167 Bq
82236-334_00001	06/02/60		Eckert & Ziegler, Lot 82236-334		(Purchased Reagent)		Am-241	6.891 Bq
							Pu-239	6.664 Bq
							Thorium-230	7.107 Bq
82237-334_00003	06/01/60		Eckert & Ziegler, Lot 82237-334		(Purchased Reagent)		Am-241	5.608 Bq
							Pu-239	6.424 Bq
							Thorium-230	5.856 Bq
82240-334_00001	06/08/60		Eckert & Ziegler, Lot 82240-334		(Purchased Reagent)		Am-241	8.298 Bq
							Pu-239	7.163 Bq
							Thorium-230	6.304 Bq
82241-334_00001	06/08/60		Eckert & Ziegler, Lot 82241-334		(Purchased Reagent)		Am-241	6.638 Bq
							Pu-239	6.797 Bq
							Thorium-230	6.629 Bq
82242-334_00001	06/08/60		Eckert & Ziegler, Lot 82242-334		(Purchased Reagent)		Am-241	7.145 Bq
							Pu-239	6.414 Bq
							Thorium-230	6.583 Bq
82243-334_00001	06/09/60		Eckert & Ziegler, Lot 82243-334		(Purchased Reagent)		Am-241	6.39 Bq
							Pu-239	5.979 Bq
							Thorium-230	5.856 Bq
82244-334_00001	06/09/60		Eckert & Zigler, Lot 82244-334		(Purchased Reagent)		Am-241	6.897 Bq
							Pu-239	6.717 Bq
							Thorium-230	7.352 Bq
82245-334_00001	06/09/60		Eckert & Ziegler, Lot 82245-334		(Purchased Reagent)		Am-241	5.528 Bq
							Pu-239	5.437 Bq
							Thorium-230	6.727 Bq
82246-334_00001	06/09/60		Eckert & Ziegler, Lot 82246-334		(Purchased Reagent)		Am-241	6.002 Bq
							Pu-239	5.353 Bq
							Thorium-230	5.57 Bq
82247-334_00001	06/10/60		Eckert & Ziegler, Lot 82247-334		(Purchased Reagent)		Am-241	6.291 Bq
							Pu-239	5.746 Bq
							Thorium-230	6.251 Bq
Alk Int._00009	02/19/15	08/19/14	DI Water, Lot 081914	1000 mL	Sodium Carb_00005	1 g	Alkalinity	1000 mg/L
							Bicarbonate Alkalinity as CaCO3	1000 mg/L
.Sodium Carb_00005	12/08/16		Malinckrodt, Lot K13607		(Purchased Reagent)		Alkalinity	100 %

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Bicarbonate Alkalinity as CaCO3	100 %
Hg QC Int._00445	11/20/14	11/19/14	2% Nitric Acid, Lot 377355	100 mL	HG QC_00005	0.1 mL	Mercury	0.1 ug/mL
.HG QC_00005	09/15/15	Leeman Labs, Lot 090414			(Purchased Reagent)		Mercury	100 ug/mL
HNO3_00095	09/18/15	Marcon Chemicals, Lot 80824			(Purchased Reagent)		Nitric acid	16 mol/L
IC 2nd Source_00007	07/01/15	Inorganic Ventures, Lot H2-MEB536023			(Purchased Reagent)		Bromide	5000 ug/L
							Chloride	5000 ug/L
							Fluoride	2500 ug/L
							Nitrate as N	1000 ug/L
							Nitrite as N	400 ug/L
							Orthophosphate	20000 ug/L
							Sulfate	20000 ug/L
IC Cal High_00031	10/01/15	Inorganic Ventures, Lot H2-MEB549027			(Purchased Reagent)		Chloride	5000 ug/L
							Nitrate as N	1000 ug/L
							Nitrite as N	400 ug/L
							Sulfate	20000 ug/L
IC Cal High_00032	10/01/15	Inorganic Ventures, Lot H2-MEB549027			(Purchased Reagent)		Bromide	5000 ug/L
							Fluoride	2500 ug/L
							Nitrite as N	400 ug/L
							Orthophosphate	20000 ug/L
							Sulfate	20000 ug/L
ICP CAL1/LLC_00020	01/03/15	12/03/14	5% HCl/5%HN03, Lot 507678	1000 mL	ICPC13 LLC A_00003	2 mL	Aluminum	0.2 ug/mL
							Arsenic	0.01 ug/mL
							Barium	0.05 ug/mL
							Beryllium	0.005 ug/mL
							Boron	0.05 ug/mL
							Cadmium	0.005 ug/mL
							Calcium	1 ug/mL
							Chromium	0.01 ug/mL
							Cobalt	0.05 ug/mL
							Copper	0.025 ug/mL
							Iron	0.1 ug/mL
							Lead	0.01 ug/mL
							Magnesium	1 ug/mL
							Manganese	0.015 ug/mL
							Nickel	0.04 ug/mL
							Phosphorus	0.25 ug/mL
							Potassium	5 ug/mL
							Selenium	0.015 ug/mL
							Sodium	1 ug/mL
							Thallium	0.02 ug/mL
							Uranium	0.5 ug/mL
							Vanadium	0.05 ug/mL
							Zinc	0.02 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					ICPC13 LLC B_00002	2 mL	Antimony	0.01 ug/mL
							Molybdenum	0.04 ug/mL
							Silicon	0.4 ug/mL
							Silver	0.01 ug/mL
							Tin	0.1 ug/mL
							Titanium	0.02 ug/mL
.ICPC13 LLC A_00003	09/01/15		AccuScience, Lot 1064407		(Purchased Reagent)		Aluminum	100 ug/mL
							Arsenic	5 ug/mL
							Barium	25 ug/mL
							Beryllium	2.5 ug/mL
							Boron	25 ug/mL
							Cadmium	2.5 ug/mL
							Calcium	500 ug/mL
							Chromium	5 ug/mL
							Cobalt	25 ug/mL
							Copper	12.5 ug/mL
							Iron	50 ug/mL
							Lead	5 ug/mL
							Magnesium	500 ug/mL
							Manganese	7.5 ug/mL
							Nickel	20 ug/mL
							Phosphorus	125 ug/mL
							Potassium	2500 ug/mL
							Selenium	7.5 ug/mL
							Sodium	500 ug/mL
							Thallium	10 ug/mL
							Uranium	250 ug/mL
							Vanadium	25 ug/mL
							Zinc	10 ug/mL
.ICPC13 LLC B_00002	09/01/15		AccuScience, Lot 1064407		(Purchased Reagent)		Antimony	5 ug/mL
							Molybdenum	20 ug/mL
							Silicon	200 ug/mL
							Silver	5 ug/mL
							Tin	50 ug/mL
							Titanium	10 ug/mL
ICP CAL2/CCV_00033	01/03/15	12/03/14	5% HCl/5@HN03, Lot 507678	1000 mL	ICPC13 CAL A_00002	5 mL	Antimony	1 ug/mL
							Molybdenum	1 ug/mL
							Silicon	5 ug/mL
							Silver	1 ug/mL
							Tin	5 ug/mL
							Titanium	5 ug/mL
					ICPC13 CAL B_00002	5 mL	Phosphorus	50 ug/mL
							Potassium	50 ug/mL
							Sodium	50 ug/mL
					ICPC13 CAL C_00002	5 mL	Aluminum	50 ug/mL
							Calcium	50 ug/mL
							Iron	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Magnesium	50 ug/mL
					ICPC13 CAL D_00002	5 mL	Barium	5 ug/mL
							Boron	5 ug/mL
							Lead	5 ug/mL
							Uranium	5 ug/mL
							Vanadium	5 ug/mL
							Zinc	5 ug/mL
					ICPC13 CAL E_00002	5 mL	Arsenic	5 ug/mL
							Beryllium	5 ug/mL
							Cadmium	5 ug/mL
							Chromium	5 ug/mL
							Cobalt	5 ug/mL
							Copper	5 ug/mL
							Manganese	5 ug/mL
							Nickel	5 ug/mL
							Selenium	1 ug/mL
							Thallium	1 ug/mL
.ICPC13 CAL A_00002	09/01/15		AccuScience, Lot 1064528		(Purchased Reagent)		Antimony	200 ug/mL
							Molybdenum	200 ug/mL
							Silicon	1000 ug/mL
							Silver	200 ug/mL
							Tin	1000 ug/mL
							Titanium	1000 ug/mL
.ICPC13 CAL B_00002	09/01/15		AccuScience, Lot 1064528		(Purchased Reagent)		Phosphorus	10000 ug/mL
							Potassium	10000 ug/mL
							Sodium	10000 ug/mL
.ICPC13 CAL C_00002	09/01/15		AccuScience, Lot 1064535		(Purchased Reagent)		Aluminum	10000 ug/mL
							Calcium	10000 ug/mL
							Iron	10000 ug/mL
							Magnesium	10000 ug/mL
.ICPC13 CAL D_00002	09/01/15		AccuScience, Lot 1064535		(Purchased Reagent)		Barium	1000 ug/mL
							Boron	1000 ug/mL
							Lead	1000 ug/mL
							Uranium	1000 ug/mL
							Vanadium	1000 ug/mL
							Zinc	1000 ug/mL
.ICPC13 CAL E_00002	09/01/15		AccuScience, Lot 1064534		(Purchased Reagent)		Arsenic	1000 ug/mL
							Beryllium	1000 ug/mL
							Cadmium	1000 ug/mL
							Chromium	1000 ug/mL
							Cobalt	1000 ug/mL
							Copper	1000 ug/mL
							Manganese	1000 ug/mL
							Nickel	1000 ug/mL
							Selenium	200 ug/mL
							Thallium	200 ug/mL
ICP CAL3\LRC_00018	01/03/15	12/03/14	5% HCl /5%HN03, Lot 507678	1000 mL	ICPC13 CAL A_00002	10 mL	Antimony	2 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Molybdenum	2 ug/mL
							Silicon	10 ug/mL
							Silver	2 ug/mL
							Tin	10 ug/mL
							Titanium	10 ug/mL
					ICPC13 CAL B_00002	10 mL	Phosphorus	100 ug/mL
							Potassium	100 ug/mL
							Sodium	100 ug/mL
					ICPC13 CAL C_00002	10 mL	Aluminum	100 ug/mL
							Calcium	100 ug/mL
							Iron	100 ug/mL
							Magnesium	100 ug/mL
					ICPC13 CAL D_00002	10 mL	Barium	10 ug/mL
							Boron	10 ug/mL
							Lead	10 ug/mL
							Uranium	10 ug/mL
							Vanadium	10 ug/mL
							Zinc	10 ug/mL
					ICPC13 CAL E_00002	10 mL	Arsenic	10 ug/mL
							Beryllium	10 ug/mL
							Cadmium	10 ug/mL
							Chromium	10 ug/mL
							Cobalt	10 ug/mL
							Copper	10 ug/mL
							Manganese	10 ug/mL
							Nickel	10 ug/mL
							Selenium	2 ug/mL
							Thallium	2 ug/mL
.ICPC13 CAL A_00002	09/01/15		AccuScience, Lot 1064528		(Purchased Reagent)		Antimony	200 ug/mL
							Molybdenum	200 ug/mL
							Silicon	1000 ug/mL
							Silver	200 ug/mL
							Tin	1000 ug/mL
							Titanium	1000 ug/mL
.ICPC13 CAL B_00002	09/01/15		AccuScience, Lot 1064528		(Purchased Reagent)		Phosphorus	10000 ug/mL
							Potassium	10000 ug/mL
							Sodium	10000 ug/mL
.ICPC13 CAL C_00002	09/01/15		AccuScience, Lot 1064535		(Purchased Reagent)		Aluminum	10000 ug/mL
							Calcium	10000 ug/mL
							Iron	10000 ug/mL
							Magnesium	10000 ug/mL
.ICPC13 CAL D_00002	09/01/15		AccuScience, Lot 1064535		(Purchased Reagent)		Barium	1000 ug/mL
							Boron	1000 ug/mL
							Lead	1000 ug/mL
							Uranium	1000 ug/mL
							Vanadium	1000 ug/mL
							Zinc	1000 ug/mL
.ICPC13 CAL E_00002	09/01/15		AccuScience, Lot 1064534		(Purchased Reagent)		Arsenic	1000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Beryllium	1000 ug/mL
							Cadmium	1000 ug/mL
							Chromium	1000 ug/mL
							Cobalt	1000 ug/mL
							Copper	1000 ug/mL
							Manganese	1000 ug/mL
							Nickel	1000 ug/mL
							Selenium	200 ug/mL
							Thallium	200 ug/mL
ICP ICV_00015	01/03/15	12/03/14	5% Nitric Acid, Lot 507678	1000 mL	ICPC ICV 1_00002	5 mL	Antimony	1 ug/mL
							Molybdenum	1 ug/mL
							Silicon	5 ug/mL
							Tin	5 ug/mL
							Titanium	5 ug/mL
					ICPC ICV 3_00002	5 mL	Aluminum	50 ug/mL
							Calcium	50 ug/mL
							Iron	50 ug/mL
							Sodium	50 ug/mL
					ICPC ICV 4_00002	5 mL	Arsenic	5 ug/mL
							Barium	5 ug/mL
							Beryllium	5 ug/mL
							Boron	5 ug/mL
							Cadmium	5 ug/mL
							Chromium	5 ug/mL
							Cobalt	5 ug/mL
							Copper	5 ug/mL
							Lead	5 ug/mL
							Manganese	5 ug/mL
							Nickel	5 ug/mL
							Phosphorus	5 ug/mL
							Selenium	1 ug/mL
							Silver	1 ug/mL
							Thallium	1 ug/mL
							Uranium	5 ug/mL
							Vanadium	5 ug/mL
							Zinc	5 ug/mL
					ICPC ICV2_00002	5 mL	Magnesium	50 ug/mL
							Potassium	50 ug/mL
.ICPC ICV 1_00002	11/01/15	Inorganic Venures, Lot H2-MEB550054			(Purchased Reagent)		Antimony	200 ug/mL
							Molybdenum	200 ug/mL
							Silicon	1000 ug/mL
							Tin	1000 ug/mL
							Titanium	1000 ug/mL
.ICPC ICV 3_00002	11/01/15	Inorganic Ventures, Lot H2-MEB550055			(Purchased Reagent)		Aluminum	10000 ug/mL
							Calcium	10000 ug/mL
							Iron	10000 ug/mL
							Sodium	10000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
.ICPC ICV 4_00002	11/01/15	Inorganic Ventures, Lot H2-MEB5500053			(Purchased Reagent)		Arsenic	1000 ug/mL
							Barium	1000 ug/mL
							Beryllium	1000 ug/mL
							Boron	1000 ug/mL
							Cadmium	1000 ug/mL
							Chromium	1000 ug/mL
							Cobalt	1000 ug/mL
							Copper	1000 ug/mL
							Lead	1000 ug/mL
							Manganese	1000 ug/mL
							Nickel	1000 ug/mL
							Phosphorus	1000 ug/mL
							Selenium	200 ug/mL
							Silver	200 ug/mL
							Thallium	200 ug/mL
							Uranium	1000 ug/mL
							Vanadium	1000 ug/mL
							Zinc	1000 ug/mL
.ICPC ICV2_00002	11/01/15	Inorganic Ventures, Lot H2-MEB550056			(Purchased Reagent)		Magnesium	10000 ug/mL
							Potassium	10000 ug/mL
ICPC MIX AB_00048	01/03/15	12/03/14	5% HCl /5%HN03, Lot 507678	1000 mL	ICPC13 AB 1_00002	5 mL	Arsenic	2.5 ug/mL
							Barium	2.5 ug/mL
							Beryllium	2.5 ug/mL
							Boron	2.5 ug/mL
							Lead	2.5 ug/mL
							Selenium	0.5 ug/mL
							Uranium	2.5 ug/mL
							Vanadium	2.5 ug/mL
							Zinc	2.5 ug/mL
					ICPC13 AB 2_00002	5 mL	Antimony	0.5 ug/mL
							Cadmium	2.5 ug/mL
							Chromium	2.5 ug/mL
							Cobalt	2.5 ug/mL
							Copper	2.5 ug/mL
							Manganese	2.5 ug/mL
							Molybdenum	0.5 ug/mL
							Nickel	2.5 ug/mL
							Silicon	2.5 ug/mL
							Silver	0.5 ug/mL
							Thallium	0.5 ug/mL
							Tin	2.5 ug/mL
							Titanium	2.5 ug/mL
					ICPC13 ICSA 1_00002	5 mL	Phosphorus	100 ug/mL
							Potassium	100 ug/mL
							Sodium	100 ug/mL
					ICPC13 ICSA 2_00002	5 mL	Aluminum	100 ug/mL
							Calcium	100 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Iron	100 ug/mL
							Magnesium	100 ug/mL
.ICPC13 AB 1_00002	09/01/15		AccuScience, Lot 1064359		(Purchased Reagent)		Arsenic	500 ug/mL
							Barium	500 ug/mL
							Beryllium	500 ug/mL
							Boron	500 ug/mL
							Lead	500 ug/mL
							Selenium	100 ug/mL
							Uranium	500 ug/mL
							Vanadium	500 ug/mL
							Zinc	500 ug/mL
.ICPC13 AB 2_00002	09/01/15		AccuScience, Lot 1064359		(Purchased Reagent)		Antimony	100 ug/mL
							Cadmium	500 ug/mL
							Chromium	500 ug/mL
							Cobalt	500 ug/mL
							Copper	500 ug/mL
							Manganese	500 ug/mL
							Molybdenum	100 ug/mL
							Nickel	500 ug/mL
							Silicon	500 ug/mL
							Silver	100 ug/mL
							Thallium	100 ug/mL
							Tin	500 ug/mL
							Titanium	500 ug/mL
.ICPC13 ICSA 1_00002	09/01/15		AccuScience, Lot 1064353		(Purchased Reagent)		Phosphorus	20000 ug/mL
							Potassium	20000 ug/mL
							Sodium	20000 ug/mL
.ICPC13 ICSA 2_00002	09/01/15		AccuScience, Lot 1064353		(Purchased Reagent)		Aluminum	20000 ug/mL
							Calcium	20000 ug/mL
							Iron	20000 ug/mL
							Magnesium	20000 ug/mL
ICPC MIX ICSA_00044	01/03/15	12/03/14	5% HCl/5%HN03, Lot 507678	1000 mL	ICPC13 ICSA 1_00002	5 mL	Phosphorus	100 ug/mL
							Potassium	100 ug/mL
							Sodium	100 ug/mL
					ICPC13 ICSA 2_00002	5 mL	Aluminum	100 ug/mL
							Calcium	100 ug/mL
							Iron	100 ug/mL
							Magnesium	100 ug/mL
.ICPC13 ICSA 1_00002	09/01/15		AccuScience, Lot 1064353		(Purchased Reagent)		Phosphorus	20000 ug/mL
							Potassium	20000 ug/mL
							Sodium	20000 ug/mL
.ICPC13 ICSA 2_00002	09/01/15		AccuScience, Lot 1064353		(Purchased Reagent)		Aluminum	20000 ug/mL
							Calcium	20000 ug/mL
							Iron	20000 ug/mL
							Magnesium	20000 ug/mL
PH Buffer 7_00046	05/25/15		Ricca, Lot 4402464		(Purchased Reagent)		pH	7 NONE

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
PREP 1 and 2_00006	11/07/15		AccuScience, Lot 1067570		(Purchased Reagent)		Aluminum	2000 mg/L
							Antimony	100 mg/L
							Arsenic	200 mg/L
							Barium	200 mg/L
							Beryllium	200 mg/L
							Bi	200 mg/L
							Boron	400 mg/L
							Cadmium	200 mg/L
							Calcium	2000 mg/L
							Chromium	200 mg/L
							Cobalt	200 mg/L
							Copper	200 mg/L
							Iron	2000 mg/L
							Lead	200 mg/L
							Li	200 mg/L
							Magnesium	2000 mg/L
							Manganese	200 mg/L
							Molybdenum	100 mg/L
							Nb	100 mg/L
							Nickel	200 mg/L
							Phosphorus	200 mg/L
							Potassium	2000 mg/L
							Selenium	100 mg/L
							Silver	40 mg/L
							Sm	200 mg/L
							Sodium	2000 mg/L
							Sr	200 mg/L
							Sulfur	2000 mg/L
							Th	200 mg/L
							Thallium	40 mg/L
							Tin	200 mg/L
							Titanium	200 mg/L
							Uranium	200 mg/L
							Vanadium	200 mg/L
							W	200 mg/L
							Zinc	200 mg/L
							Zr	200 mg/L
Sr-90_00004							Gross Alpha	
					Sr-90_00001	5.0139 g	Gross Beta	45120.6 dpm/mL
							Sr	22560.3 dpm/mL
							Sr-90	22560.3 dpm/mL
.Sr-90_00001	09/17/59		Eckert & Ziegler, Lot 80573-334		(Purchased Reagent)		Gross Beta	14998.5 Bq/g
							Sr	7499.25 Bq/g
							Sr-90	7499.25 Bq/g

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
Sr-90_00018							Gross Alpha	
					Sr-90_00017	4.9997 g	Gross Beta	44774.2 dpm/mL
							Sr-90	22387.1 dpm/mL
.Sr-90_00017	11/29/62		Analytics, Lot 92352		(Purchased Reagent)		Gross Beta	14925.6 Bq/g
							Sr-90	7462.82 Bq/g
Sr-90_00023	04/23/15	04/22/14	0.1M HCl, Lot n/a	500 mL	Sr-90_00018	0.5 mL	Gross Beta	44.7742 dpm/mL
							Sr-90	22.3871 dpm/mL
.Sr-90_00018	11/29/62	11/28/12	0.1M HCL, Lot 0	100 mL	Sr-90_00017	4.9997 g	Gross Beta	44774.2 dpm/mL
							Sr-90	22387.1 dpm/mL
..Sr-90_00017	11/29/62		Analytics, Lot 92352		(Purchased Reagent)		Gross Beta	14925.6 Bq/g
							Sr-90	7462.82 Bq/g
STD SI_00009	10/01/15		INORGANIC VENTURE, Lot G2-SI03029		(Purchased Reagent)		Silicon	1000 ug/mL
TDS LCS_00036	09/02/15	09/02/14	DI Water, Lot 090214	1000 mL	NaCl_00002	0.5 g	Total Dissolved Solids (TDS)	500 mg/L
.NaCl_00002	02/01/22		Mallinckrodt, Lot J280620		(Purchased Reagent)		Total Dissolved Solids (TDS)	1 g/g
Th-229_00018	09/02/15	08/20/14	0.1M HNO3, Lot n/a	500 mL	Th-229_00017	15 mL	At-217	67.2296 dpm/mL
							Thorium-229	67.2296 dpm/mL
.Th-229_00017	08/06/64	08/20/14	0.1M HNO3, Lot n/a	100 mL	Th-229_00016	5.0464 g	At-217	2240.99 dpm/mL
							Thorium-229	2240.99 dpm/mL
..Th-229_00016	08/06/64		Analytics, Lot 97790		(Purchased Reagent)		At-217	740.127 Bq/g
							Thorium-229	740.127 Bq/g
Th-230_00003							Gross Beta	
					Th-230_00001	5.0878 g	Gross Alpha	2397.01 dpm/mL
							Thorium-230	2397.01 dpm/mL
.Th-230_00001	04/11/61		Eckert & Ziegler, Lot 84460-334		(Purchased Reagent)		Gross Alpha	785.217 Bq/g
							Thorium-230	785.217 Bq/g
Th-230_00016							Gross Beta	
					Th-230_00015	5.0489 g	Gross Alpha	2374.49 dpm/mL
							Thorium-230	2374.49 dpm/mL
.Th-230_00015	11/29/62		Analytics, Lot 92523		(Purchased Reagent)		Gross Alpha	783.829 Bq/g
							Thorium-230	783.829 Bq/g
Th-230_00024	09/25/15	09/22/14	1M HNO3, Lot 0	250 mL	Th-230_00019	2.5 mL	Gross Alpha	22.2823 dpm/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Thorium-230	22.2823 dpm/mL
.Th-230_00019	08/08/63	08/13/13	1M HNO3, Lot n/a	100 mL	Th-230_00018	5.0731 mL	Gross Alpha	2228.23 dpm/mL
							Thorium-230	2228.23 dpm/mL
..Th-230_00018	08/08/63	Eckert & Ziegler Analytics, Lot 92776			(Purchased Reagent)		Gross Alpha	43922.5 dpm/g
							Thorium-230	43922.5 dpm/g
Th-230_00025	10/14/15	09/22/14	1M HNO3, Lot 0	200 mL	Th-230_00019	4 mL	Gross Alpha	44.5646 dpm/mL
							Thorium-230	44.5646 dpm/mL
.Th-230_00019	08/08/63	08/13/13	1M HNO3, Lot n/a	100 mL	Th-230_00018	5.0731 mL	Gross Alpha	2228.23 dpm/mL
							Thorium-230	2228.23 dpm/mL
..Th-230_00018	08/08/63	Eckert & Ziegler Analytics, Lot 92776			(Purchased Reagent)		Gross Alpha	43922.5 dpm/g
							Thorium-230	43922.5 dpm/g
U-232_00028	09/30/15	09/23/14	DI Water, Lot 0	250 mL	U-232_00009	2 mL	Uranium-232	82.2457 dpm/mL
.U-232_00009	08/25/61	08/29/11	1M HNO3, Lot 0	100 mL	U-232_00003	5.1609 g	Uranium-232	10280.7 dpm/mL
..U-232_00003	08/25/61	Eckert & Ziegler, Lot 85539-334			(Purchased Reagent)		Uranium-232	3320.07 Bq/g
UNAT_00009	05/28/15	05/23/14	1M HNO3, Lot n/a	200 mL	UNAT Parent_00001	20 mL	Uranium-233/234	70.6912 dpm/mL
							Uranium-235/236	3.37064 dpm/mL
							Uranium-238	72.265 dpm/mL
.UNAT Parent_00001	03/30/58	05/03/13	1M HNO3, Lot n/a	200 mL	UNAT Ampoule_00001	19.2509 g	Uranium-233/234	706.912 dpm/mL
							Uranium-235/236	33.7064 dpm/mL
							Uranium-238	722.65 dpm/mL
..UNAT Ampoule_00001	03/30/58	New Brunswick Lab, Lot CRM 145			(Purchased Reagent)		Uranium-233/234	7344.2 dpm/g
							Uranium-235/236	350.18 dpm/g
							Uranium-238	7507.7 dpm/g

Reagent

82232-334_00001

Eckert & Ziegler
Analytics

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318
Tel 404•352•8677
Fax 404•352•2837
www.analyticsinc.com

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

82232-334

24.1 mm Diameter x 0.65 mm Thick Stainless Steel Disk

Customer: Test America/St. Louis
P.O. No.: 2355182, Item 1

This standard radionuclide source was prepared by electrodeposition onto a stainless steel disk. Total alpha activity was determined with a ZnS scintillation detector. Radionuclide activities and impurities were calculated from the total activity and the fraction of activity for each radionuclide determined by alpha spectroscopy. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 1, February, 1979, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Reference Date: 3-Jun-2010 12:00 PM EST

Isotope	Activity (Bq)	Energy Range (keV)	Half-Life, years	Uncertainty* Type (%) u_A	u_B	U
Th-230	7.630E+00	4420-4800	7.540E+04	0.7	1.1	2.6
Pu-239	7.137E+00	4950-5240	2.410E+04	0.7	1.1	2.6
Am-241	7.281E+00	5280-5600	4.326E+02	0.7	1.1	2.6
Total Activity	2.210E+01	3000-8000		0.4	1.1	2.3

***Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

(Certificate continued on reverse side)

ACCREDITED SOURCE CALIBRATION LABORATORY HEALTH PHYSICS SOCIETY FOUNDED 1956

Comments:
Diameter of active area: 19 mm. Disk mounted on customer supplied disk 31.8 mm diameter x 0.45 mm thick stainless steel disk.

CAUTION: Active material deposited on the unmarked surface. Handle carefully to prevent scratching or damaging the active surface of this source (i.e., use Teflon coated forceps). Store in the container provided when not in use.

Source Calibrated by: _____
A. Chen, Spectroscopist

QA Approved: _____ Date: 06-24-2010
E. A. Taskaev, QA Manager Alternate

Reagent

82234-334_00001

Eckert & Ziegler
Analytics

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318
Tel 404•352•8677
Fax 404•352•2837
www.analyticsinc.com

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

82234-334

24.1 mm Diameter x 0.65 mm Thick Stainless Steel Disk

Customer: Test America/St. Louis
P.O. No.: 2355182, Item 1

This standard radionuclide source was prepared by electrodeposition onto a stainless steel disk. Total alpha activity was determined with a ZnS scintillation detector. Radionuclide activities and impurities were calculated from the total activity and the fraction of activity for each radionuclide determined by alpha spectroscopy. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 1, February, 1979, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Reference Date: 2-Jun-2010 12:00 PM EST

Isotope	Activity (Bq)	Energy Range (keV)	Half-Life, years	Uncertainty* Type (%) u_A	u_B	U
Th-230	5.685E+00	4420-4800	7.540E+04	0.9	1.1	2.8
Pu-239	5.936E+00	4950-5240	2.410E+04	0.9	1.1	2.8
Am-241	5.652E+00	5280-5600	4.326E+02	0.9	1.1	2.8
Total Activity	1.732E+01	3000-8000		0.5	1.1	2.4

***Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

(Certificate continued on reverse side)

ACCREDITED SOURCE CALIBRATION LABORATORY HEALTH PHYSICS SOCIETY FOUNDED 1956

Comments:
Diameter of active area: 19 mm. Disk mounted on customer supplied disk 31.8 mm diameter x 0.45 mm thick stainless steel disk.

CAUTION: Active material deposited on the unmarked surface. Handle carefully to prevent scratching or damaging the active surface of this source (i.e., use Teflon coated forceps). Store in the container provided when not in use.

Source Calibrated by: _____
A. Chen, Spectroscopist

QA Approved: _____ Date: 06-24-2010
E. A. Taskaev, QA Manager Alternate

Reagent

82235-334_00001

Eckert & Ziegler
Analytics

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www.analyticsinc.com

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

82235-334

24.1 mm Diameter x 0.65 mm Thick Stainless Steel Disk

Customer: Test America/St. Louis
P.O. No.: 2355182, Item 1

This standard radionuclide source was prepared by electrodeposition onto a stainless steel disk. Total alpha activity was determined with a ZnS scintillation detector. Radionuclide activities and impurities were calculated from the total activity and the fraction of activity for each radionuclide determined by alpha spectroscopy. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 1, February, 1979, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Reference Date: 4-Jun-2010 12:00 PM EST

Isotope	Activity (Bq)	Energy Range (keV)	Half-Life, years	Uncertainty* Type (%) u_A	u_B	U
Th-230	7.167E+00	4420-4800	7.540E+04	0.8	1.1	2.7
Pu-239	6.897E+00	4950-5240	2.410E+04	0.8	1.1	2.7
Am-241	7.466E+00	5280-5600	4.326E+02	0.8	1.1	2.7
Total Activity	2.161E+01	3000-8000		0.5	1.1	2.4

***Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

(Certificate continued on reverse side)

ACCREDITED SOURCE CALIBRATION LABORATORY — HEALTH PHYSICS SOCIETY — FOUNDED 1958

Comments:
Diameter of active area: 19 mm. Disk mounted on customer supplied disk 31.8 mm diameter x 0.45 mm thick stainless steel disk.

CAUTION: Active material deposited on the unmarked surface. Handle carefully to prevent scratching or damaging the active surface of this source (i.e., use Teflon coated forceps). Store in the container provided when not in use.

Source Calibrated by: _____
A. Chen, Spectroscopist

QA Approved: _____ Date: 06-24-2010
E. A. Taskaev, QA Manager Alternate

Reagent

82236-334_00001

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Analytics

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CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

82236-334

24.1 mm Diameter x 0.65 mm Thick Stainless Steel Disk

Customer: Test America/St. Louis
P.O. No.: 2355182, Item 1

This standard radionuclide source was prepared by electrodeposition onto a stainless steel disk. Total alpha activity was determined with a ZnS scintillation detector. Radionuclide activities and impurities were calculated from the total activity and the fraction of activity for each radionuclide determined by alpha spectroscopy. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 1, February, 1979, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Reference Date: 2-Jun-2010 12:00 PM EST

Isotope	Activity (Bq)	Energy Range (keV)	Half-Life, years	Uncertainty* Type (%) u_A	u_B	U
Th-230	7.107E+00	4420-4800	7.540E+04	0.7	1.1	2.6
Pu-239	6.664E+00	4950-5240	2.410E+04	0.8	1.1	2.7
Am-241	6.891E+00	5280-5600	4.326E+02	0.7	1.1	2.6
Total Activity	2.071E+01	3000-8000		0.4	1.1	2.3

***Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

(Certificate continued on reverse side)

ACCREDITED SOURCE CALIBRATION LABORATORY HEALTH PHYSICS SOCIETY FOUNDED 1958

Comments:
Diameter of active area: 19 mm. Disk mounted on customer supplied disk 31.8 mm diameter x 0.46 mm thick stainless steel disk.

CAUTION: Active material deposited on the unmarked surface. Handle carefully to prevent scratching or damaging the active surface of this source (i.e., use Teflon coated forceps). Store in the container provided when not in use.

Source Calibrated by: _____
A. Chen, Spectroscopist

QA Approved: _____ Date: 06-24-2010
E. A. Taskaev, QA Manager Alternate

Reagent

82237-334_00003

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Analytics

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CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

82237-334

24.1 mm Diameter x 0.65 mm Thick Stainless Steel Disk

Customer: Test America/St. Louis
P.O. No.: 2355182, Item 1

This standard radionuclide source was prepared by electrodeposition onto a stainless steel disk. Total alpha activity was determined with a ZnS scintillation detector. Radionuclide activities and impurities were calculated from the total activity and the fraction of activity for each radionuclide determined by alpha spectroscopy. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 1, February, 1979, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Reference Date: 1-Jun-2010 12:00 PM EST

Isotope	Activity (Bq)	Energy Range (keV)	Half-Life, years	Uncertainty* Type (%) u_A	u_B	U
Th-230	5.856E+00	4420-4800	7.540E+04	1.0	1.1	3.0
Pu-239	6.424E+00	4950-5240	2.410E+04	0.9	1.1	2.8
Am-241	5.608E+00	5280-5600	4.326E+02	1.0	1.1	3.0
Total Activity	1.793E+01	3000-8000		0.6	1.1	2.5

***Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

(Certificate continued on reverse side)

ACCREDITED SOURCE CALIBRATION LABORATORY HEALTH PHYSICS SOCIETY FOUNDED 1958

Comments:
Diameter of active area: 19 mm. Disk mounted on customer supplied disk 31.8 mm diameter x 0.45 mm thick stainless steel disk.

CAUTION: Active material deposited on the unmarked surface. Handle carefully to prevent scratching or damaging the active surface of this source (i.e., use Teflon coated forceps). Store in the container provided when not in use.

Source Calibrated by: _____
A. Chen, Spectroscopist

QA Approved: _____ Date: 06-24-2010
E. A. Taskaev, QA Manager Alternate

Reagent

82240-334_00001

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Analytics

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www.analyticsinc.com

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

82240-334

24.1 mm Diameter x 0.65 mm Thick Stainless Steel Disk

Customer: Test America/St. Louis
P.O. No.: 2355182, Item 1

This standard radionuclide source was prepared by electrodeposition onto a stainless steel disk. Total alpha activity was determined with a ZnS scintillation detector. Radionuclide activities and impurities were calculated from the total activity and the fraction of activity for each radionuclide determined by alpha spectroscopy. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 1, February, 1979, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Reference Date: 8-Jun-2010 12:00 PM EST

Isotope	Activity (Bq)	Energy Range (keV)	Half-Life, years	Uncertainty* Type (%) u_A	u_B	U
Th-230	6.304E+00	4420-4800	7.540E+04	0.9	1.1	2.8
Pu-239	7.163E+00	4950-5240	2.410E+04	0.8	1.1	2.7
Am-241	8.298E+00	5280-5600	4.326E+02	0.8	1.1	2.7
Total Activity	2.182E+01	3000-8000		0.5	1.1	2.4

***Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

(Certificate continued on reverse side)

ACCREDITED SOURCE CALIBRATION LABORATORY HEALTH PHYSICS SOCIETY FOUNDED 1958

Comments:
Diameter of active area: 19 mm. Disk mounted on customer supplied disk 31.8 mm diameter x 0.45 mm thick stainless steel disk.

CAUTION: Active material deposited on the unmarked surface. Handle carefully to prevent scratching or damaging the active surface of this source (i.e., use Teflon coated forceps). Store in the container provided when not in use.

Source Calibrated by: _____
A. Chen, Spectroscopist

QA Approved: _____ Date: 06-24-2010
E. A. Taskaev, QA Manager Alternate

Reagent

82241-334_00001

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Analytics

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www.analyticsinc.com

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

82241-334

24.1 mm Diameter x 0.65 mm Thick Stainless Steel Disk

Customer: Test America/St. Louis
P.O. No.: 2355182, Item 1

This standard radionuclide source was prepared by electrodeposition onto a stainless steel disk. Total alpha activity was determined with a ZnS scintillation detector. Radionuclide activities and impurities were calculated from the total activity and the fraction of activity for each radionuclide determined by alpha spectroscopy. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 1, February, 1979, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Reference Date: 8-Jun-2010 12:00 PM EST

Isotope	Activity (Bq)	Energy Range (keV)	Half-Life, years	Uncertainty* Type (%) u_A	u_B	U
Th-230	6.629E+00	4420-4800	7.540E+04	0.8	1.1	2.7
Pu-239	6.797E+00	4950-5240	2.410E+04	0.8	1.1	2.7
Am-241	6.638E+00	5280-5600	4.326E+02	0.8	1.1	2.7
Total Activity	2.011E+01	3000-8000		0.4	1.1	2.3

***Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

(Certificate continued on reverse side)

ACCREDITED SOURCE CALIBRATION LABORATORY — HEALTH PHYSICS SOCIETY — FOUNDED 1956

Comments:
Diameter of active area: 19 mm. Disk mounted on customer supplied disk 31.8 mm diameter x 0.45 mm thick stainless steel disk.

CAUTION: Active material deposited on the unmarked surface. Handle carefully to prevent scratching or damaging the active surface of this source (i.e., use Teflon coated forceps). Store in the container provided when not in use.

Source Calibrated by: _____
A. Chen, Spectroscopist

QA Approved: _____ Date: 06-24-2010
E. A. Taskaev, QA Manager Alternate

Reagent

82242-334_00001

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Analytics

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www.analyticsinc.com

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

82242-334

24.1 mm Diameter x 0.65 mm Thick Stainless Steel Disk

Customer: Test America/St. Louis
P.O. No.: 2355182, Item 1

This standard radionuclide source was prepared by electrodeposition onto a stainless steel disk. Total alpha activity was determined with a ZnS scintillation detector. Radionuclide activities and impurities were calculated from the total activity and the fraction of activity for each radionuclide determined by alpha spectroscopy. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 1, February, 1979, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Reference Date: 8-Jun-2010 12:00 PM EST

Isotope	Activity (Bq)	Energy Range (keV)	Half-Life, years	Uncertainty* Type (%) u_A	u_B	U
Th-230	6.583E+00	4420-4800	7.540E+04	0.9	1.1	2.8
Pu-239	6.414E+00	4950-5240	2.410E+04	0.9	1.1	2.8
Am-241	7.145E+00	5280-5600	4.326E+02	0.9	1.1	2.8
Total Activity	2.018E+01	3000-8000		0.6	1.1	2.5

***Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

(Certificate continued on reverse side)

ACCREDITED SOURCE CALIBRATION LABORATORY HEALTH PHYSICS SOCIETY FOUNDED 1958

Comments:
Diameter of active area: 19 mm. Disk mounted on customer supplied disk 31.8 mm diameter x 0.45 mm thick stainless steel disk.

CAUTION: Active material deposited on the unmarked surface. Handle carefully to prevent scratching or damaging the active surface of this source (i.e., use Teflon coated forceps). Store in the container provided when not in use.

Source Calibrated by: _____
A. Chen, Spectroscopist

QA Approved: _____ Date: 06-24-2010
E. A. Taskaev, QA Manager Alternate

Reagent

82243-334_00001

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CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

82243-334

24.1 mm Diameter x 0.65 mm Thick Stainless Steel Disk

Customer: Test America/St. Louis
P.O. No.: 2355182, Item 1

This standard radionuclide source was prepared by electrodeposition onto a stainless steel disk. Total alpha activity was determined with a ZnS scintillation detector. Radionuclide activities and impurities were calculated from the total activity and the fraction of activity for each radionuclide determined by alpha spectroscopy. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 1, February, 1979, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Reference Date: 9-Jun-2010 12:00 PM EST

Isotope	Activity (Bq)	Energy Range (keV)	Half-Life, years	Uncertainty* Type (%) u_A	u_B	U
Th-230	5.856E+00	4420-4800	7.540E+04	0.8	1.1	2.7
Pu-239	5.979E+00	4950-5240	2.410E+04	0.8	1.1	2.7
Am-241	6.390E+00	5280-5600	4.326E+02	0.8	1.1	2.7
Total Activity	1.827E+01	3000-8000		0.3	1.1	2.3

***Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

(Certificate continued on reverse side)

ACCREDITED SOURCE CALIBRATION LABORATORY
HEALTH PHYSICS SOCIETY
FOUNDED 1966

Comments:
Diameter of active area: 19 mm. Disk mounted on customer supplied disk 31.8 mm diameter x 0.45 mm thick stainless steel disk.

CAUTION: Active material deposited on the unmarked surface. Handle carefully to prevent scratching or damaging the active surface of this source (i.e., use Teflon coated forceps). Store in the container provided when not in use.

Source Calibrated by: _____
A. Chen, Spectroscopist

QA Approved: _____ Date: 06-24-2010
E. A. Taskaev, QA Manager Alternate

Reagent

82244-334_00001

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www.analyticsinc.com

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

82244-334

24.1 mm Diameter x 0.65 mm Thick Stainless Steel Disk

Customer: Test America/St. Louis
P.O. No.: 2355182, Item 1

This standard radionuclide source was prepared by electrodeposition onto a stainless steel disk. Total alpha activity was determined with a ZnS scintillation detector. Radionuclide activities and impurities were calculated from the total activity and the fraction of activity for each radionuclide determined by alpha spectroscopy. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 1, February, 1979, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Reference Date: 9-Jun-2010 12:00 PM EST

Isotope	Activity (Bq)	Energy Range (keV)	Half-Life, years	Uncertainty* Type (%) u_A	u_B	U
Th-230	7.352E+00	4420-4800	7.540E+04	0.8	1.1	2.7
Pu-239	6.717E+00	4950-5240	2.410E+04	0.9	1.1	2.8
Am-241	6.897E+00	5280-5600	4.326E+02	0.9	1.1	2.8
Total Activity	2.101E+01	3000-8000		0.6	1.1	2.5

***Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

(Certificate continued on reverse side)

ACCREDITED SOURCE CALIBRATION LABORATORY
HEALTH PHYSICS SOCIETY
FOUNDED 1956

Comments:
Diameter of active area: 19 mm. Disk mounted on customer supplied disk 31.8 mm diameter x 0.45 mm thick stainless steel disk.

CAUTION: Active material deposited on the unmarked surface. Handle carefully to prevent scratching or damaging the active surface of this source (i.e., use Teflon coated forceps). Store in the container provided when not in use.

Source Calibrated by: _____
A. Chen, Spectroscopist

QA Approved: _____ Date: 06-24-2010
E. A. Taskaev, QA Manager Alternate

Reagent

82245-334_00001

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Analytics

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CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

82245-334

24.1 mm Diameter x 0.65 mm Thick Stainless Steel Disk

Customer: Test America/St. Louis
P.O. No.: 2355182, Item 1

This standard radionuclide source was prepared by electrodeposition onto a stainless steel disk. Total alpha activity was determined with a ZnS scintillation detector. Radionuclide activities and impurities were calculated from the total activity and the fraction of activity for each radionuclide determined by alpha spectroscopy. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 1, February, 1979, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Reference Date: 9-Jun-2010 12:00 PM EST

Isotope	Activity (Bq)	Energy Range (keV)	Half-Life, years	Uncertainty* Type (%) u_A	u_B	U
Th-230	6.727E+00	4420-4800	7.540E+04	1.0	1.1	3.0
Pu-239	5.437E+00	4950-5240	2.410E+04	1.1	1.1	3.1
Am-241	5.528E+00	5280-5600	4.326E+02	1.1	1.1	3.1
Total Activity	1.773E+01	3000-8000		0.8	1.1	2.7

***Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

(Certificate continued on reverse side)

ACCREDITED SOURCE CALIBRATION LABORATORY — HEALTH PHYSICS SOCIETY — FOUNDED 1956

Comments:
Diameter of active area: 19 mm. Disk mounted on customer supplied disk 31.8 mm diameter x 0.45 mm thick stainless steel disk.

CAUTION: Active material deposited on the unmarked surface. Handle carefully to prevent scratching or damaging the active surface of this source (i.e., use Teflon coated forceps). Store in the container provided when not in use.

Source Calibrated by: _____
A. Chen, Spectroscopist

QA Approved: _____ Date: 06-24-2010
E. A. Taskaev, QA Manager Alternate

Reagent

82246-334_00001

Eckert & Ziegler
Analytics

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318
Tel 404•352•8677
Fax 404•352•2837
www.analyticsinc.com

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

82246-334

24.1 mm Diameter x 0.65 mm Thick Stainless Steel Disk

Customer: Test America/St. Louis
P.O. No.: 2355182, Item 1

This standard radionuclide source was prepared by electrodeposition onto a stainless steel disk. Total alpha activity was determined with a ZnS scintillation detector. Radionuclide activities and impurities were calculated from the total activity and the fraction of activity for each radionuclide determined by alpha spectroscopy. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 1, February, 1979, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Reference Date: 9-Jun-2010 12:00 PM EST

Isotope	Activity (Bq)	Energy Range (keV)	Half-Life, years	Uncertainty* Type (%) u_A	u_B	U
Th-230	5.570E+00	4420-4800	7.540E+04	1.0	1.1	3.0
Pu-239	5.353E+00	4950-5240	2.410E+04	1.0	1.1	3.0
Am-241	6.002E+00	5280-5600	4.326E+02	1.0	1.1	3.0
Total Activity	1.696E+01	3000-8000		0.7	1.1	2.6

***Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

(Certificate continued on reverse side)

ACCREDITED SOURCE CALIBRATION LABORATORY
HEALTH PHYSICS SOCIETY
FOUNDED 1956

Comments:
Diameter of active area: 19 mm. Disk mounted on customer supplied disk 31.8 mm diameter x 0.45 mm thick stainless steel disk.

CAUTION: Active material deposited on the unmarked surface. Handle carefully to prevent scratching or damaging the active surface of this source (i.e., use Teflon coated forceps). Store in the container provided when not in use.

Source Calibrated by: _____
A. Chen, Spectroscopist

QA Approved: _____ Date: 06.24.2010
E. A. Taskaev, QA Manager Alternate

Reagent

82247-334_00001

Eckert & Ziegler
Analytics

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318
Tel 404•352•8677
Fax 404•352•2837
www.analyticsinc.com

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

82247-334

24.1 mm Diameter x 0.65 mm Thick Stainless Steel Disk

Customer: Test America/St. Louis
P.O. No.: 2355182, Item 1

This standard radionuclide source was prepared by electrodeposition onto a stainless steel disk. Total alpha activity was determined with a ZnS scintillation detector. Radionuclide activities and impurities were calculated from the total activity and the fraction of activity for each radionuclide determined by alpha spectroscopy. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 1, February, 1979, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Reference Date: 10-Jun-2010 12:00 PM EST

Isotope	Activity (Bq)	Energy Range (keV)	Half-Life, years	Uncertainty* Type (%) u_A	u_B	U
Th-230	6.251E+00	4420-4800	7.540E+04	0.9	1.1	2.8
Pu-239	5.746E+00	4950-5240	2.410E+04	0.9	1.1	2.8
Am-241	6.291E+00	5280-5600	4.326E+02	0.9	1.1	2.8
Total Activity	1.832E+01	3000-8000		0.6	1.1	2.5

***Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

(Certificate continued on reverse side)

ACCREDITED SOURCE CALIBRATION LABORATORY
HEALTH PHYSICS SOCIETY
FOUNDED 1956

Comments:
Diameter of active area: 19 mm. Disk mounted on customer supplied disk 31.8 mm diameter x 0.45 mm thick stainless steel disk.

CAUTION: Active material deposited on the unmarked surface. Handle carefully to prevent scratching or damaging the active surface of this source (i.e., use Teflon coated forceps). Store in the container provided when not in use.

Source Calibrated by: _____
A. Chen, Spectroscopist

QA Approved: _____ Date: 06-24-2010
E. A. Taskaev, QA Manager Alternate

Reagent

HG QC_00005

PLASMA-PURE ™

Standard Certificate

450487
ID: HG QC_00005
Exp:09/15/15 Prpd:MTS Opn:09/15/14
HG QC 100PPM

Catalog Number:	602-00064	**Lot Number:**	090414
Starting Material:	99.9999% purity Hg metal	**Diluent/Matrix:**	5% HNO_3
Preparation Date:	Sept 14	**Expiration Date:**	Sept 16

Element	**Concentration**
Hg	100.0 ± 0.2 µg/ml

Residual Impurities *	**Concentration**
None Detected	

* **Impurities were determined via ICP Emission Spectroscopy. Only elements detected are reported.**

Traceability

1. **This standard is certified using wet chemistry assay procedures and/or plasma emission spectroscopy, traceable to primary or well-characterized secondary standards. Traceable to:** NIST SRM 3133, Hg Lot#991304
2. **Analytical balances are routinely calibrated using NIST weight sets.**

Certification

Leeman Labs, Inc. certifies that PLASMA-PURE Standards have been formulated to the concentrations listed above (±0.5% of reported value). This certification does not apply and will be considered null and void if PLASMA-PURE Standards are used in a manner or in an environment not consistent with their intended purpose or are modified by the Customer in any manner.

Limitations

THE ABOVE ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, WHETHER EXPRESS OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF MECHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

Limitation of Liability

In no event shall Leeman Labs, Inc. be liable for any indirect, incidental, special, or consequential damages, including loss of profits, revenue, or used incurred by Customer or any third party, whether in an action in contract or tort. Leeman Labs Inc's liability for damages hereunder shall in no event exceed the amounts paid for the PLASMA-PURE Standards.

QC Analyst: BDM

Date: September 4, 2014

QUALITY ISO 9001:2008 NSAI Certified

TELEDYNE LEEMAN LABS
Everywhereyoulook™
6 Wentworth Drive . Hudson, NH 03051
Tel: 603.886.8400 Fax: 603.886.9141

Printed on recycled paper

Reagent

IC 2nd Source_00007

INORGANIC VENTURES™
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

395282

395282
ID: IC 2nd Source_00006
Exp:07/01/15 Prpd:AMF Opn:09/16/14
IC 2nd Source

479532
ID: IC 2nd Source_00007
Exp:07/01/15 Prpd:AMF Opn:09/16/14
IC 2nd Source

800.669.6799 · 540.585.3030
fax: 540.585.3012
fo@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number (010105).

ACCREDITED Testing Laboratory Certificate 863.01
ACCREDITED Reference Material Producer Certificate 863.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Ion Chromatography Solution
Catalog Number:	STL-ICV-LCS
Lot Number:	H2-MEB536023
Matrix:	H2O
Value / Analyte(s):	20 000 µg/L ea: oPhosphate, Sulfate, 5 000 µg/L ea: Bromide, Chloride, 2 500 µg/L ea: Fluoride, 1 000 µg/L ea: Nitrate_as_N, 400 µg/L ea: Nitrite_as_N

Second Source: Whenever possible, this solution was manufactured from a second set of concentrates in our manufacturing facility.

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Bromide	5 001 ± 28 µg/L	Chloride	5 001 ± 25 µg/L		
Fluoride	2 500 ± 13 µg/L	Nitrate as N	1 000 ± 6 µg/L		
Nitrite as N	400.0 ± 3.1 µg/L	o-Phosphate	20 000.0 ± 90.0 µg/L		
Sulfate	20 000.0 ± 110.0 µg/L				

Certified Density: 0.998 g/mL (measured at 20 ± 1 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Bromide	IC Assay	3184	020701
Bromide	Volhard	999b	999b
Chloride	IC Assay	3182	060925
Chloride	Volhard	999b	999b
Fluoride	Calculated		See Sec 4.2
Fluoride	IC Assay	3183	050721
Nitrate_as_N	IC Assay	3185	050517
Nitrite_as_N	IC Assay		traceable to SRM 40h
Nitrite_as_N	Calculated	40h	40h
oPhosphate	Calculated		See Sec 4.2
oPhosphate	IC Assay	3186	090723
Sulfate	Calculated		See Sec 4.2
Sulfate	IC Assay	3181	080603

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Certified Value $(\bar{x}) = \frac{\Sigma x_i}{n}$ ($\bar{x}$) = mean

x_i = individual results

n = number of measurements

Uncertainty $(\pm) = 2 [\Sigma(s_i)^2]^{1/2}$ 2 = the coverage factor.

$[\Sigma(s_i)^2]^{1/2}$ = The square root of the sum of the squares of the most common errors (where 's' stands for the standard deviation) from instrumental measurement, density, NIST SRM uncertainty, weighing, dilution to volume, homogeneity, long term stability and short term stability.

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 CHROMATOGRAM

- N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Keep tightly sealed when not in use. Store and use at 20 ± 4°C. Do not pipette from the container. Do not return removed aliquots to container.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

June 25, 2014

11.2 Period of Validity

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is handled and stored in accordance with instructions given in Sec 7.0 and used prior to the date given in Sec 11.3. This certification is nullified if the CRM/RM is damaged, contaminated, or otherwise modified.

11.3 Expiration Date

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Donna Senn
Product Documentation Technician

Donna Senn

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Brian Alexander

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Paul R Gaines

Reagent

IC Cal High_00031

INORGANIC VENTURES™
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number (010105).

ACCREDITED Testing Laboratory Certificate 883.01 · ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Ion Chromatography Solution
Catalog Number:	STL-CAL-HIGH
Lot Number:	H2-MEB549027
Matrix:	H2O
Value / Analyte(s):	20 000 µg/L ea: oPhosphate, Sulfate, 5 000 µg/L ea: Bromide, Chloride, 2 500 µg/L ea: Fluoride, 1 000 µg/L ea: Nitrate_as_N, 400 µg/L ea: Nitrite_as_N

461494
ID: IC Cal High_00030
Exp: 10/01/15 Prpd: AMF
IC Cal High

461495
ID: IC Cal High_00031
Exp: 10/01/15 Prpd: AMF
IC Cal High

*see TALS for open date.
AF 9-30-14

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Bromide	4 997 ± 31 µg/L	Chloride	4 997 ± 30 µg/L	Fluoride	2 499 ± 12 µg/L
Nitrate as N	1 000 ± 6 µg/L	Nitrite as N	400.0 ± 3.4 µg/L	o-Phosphate	19 990.0 ± 100.0 µg/L
Sulfate	19 980.0 ± 120.0 µg/L				

Certified Density: 0.998 g/mL (measured at 20 ± 1 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Bromide	IC Assay	3184	020701
Bromide	Volhard	999b	999b
Chloride	IC Assay	3182	060925
Chloride	Volhard	999b	999b
Fluoride	IC Assay	3183	050721
Nitrate_as_N	IC Assay	3185	050517
Nitrite_as_N	Calculated		See Sec. 4.2
Nitrite_as_N	IC Assay	40h	40h
oPhosphate	IC Assay	3186	090723
Sulfate	Calculated		See Sec. 4.2
Sulfate	IC Assay	3181	080603

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Certified Value $(\bar{x}) = \frac{\Sigma x_i}{n}$ ($\bar{x}$) = mean

x_i = individual results

n = number of measurements

Uncertainty $(\pm) = 2\ [\ \Sigma(s_i)^2\ ]^{1/2}$ 2 = the coverage factor.

$[\ \Sigma(s_i)^2\ ]^{1/2}$ = The square root of the sum of the squares of the most common errors (where 's' stands for the standard deviation) from instrumental measurement, density, NIST SRM uncertainty, weighing, dilution to volume, homogeneity, long term stability and short term stability.

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 CHROMATOGRAM

- N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Keep tightly sealed when not in use. Store and use at 20 ± 4°C. Do not pipette from the container. Do not return removed aliquots to container.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

September 24, 2014

11.2 Period of Validity

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is handled and stored in accordance with instructions given in Sec 7.0 and used prior to the date given in Sec 11.3. This certification is nullified if the CRM/RM is damaged, contaminated, or otherwise modified.

11.3 Expiration Date EXPIRES 01 OCT 2015

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Zach Saunders
Product Documentation Technician

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

IC Cal High_00032

INORGANIC VENTURES™
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

502873
ID: IC Cal High_00032
Exp:10/01/15 Prpd:AMF Opn:11/05/14
IC Cal High

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number (010105).

ACCREDITED Testing Laboratory Certificate 863.01
ACCREDITED Reference Material Producer Certificate 863.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Ion Chromatography Solution
Catalog Number:	STL-CAL-HIGH
Lot Number:	H2-MEB549027
Matrix:	H2O
Value / Analyte(s):	20 000 µg/L ea: oPhosphate, Sulfate, 5 000 µg/L ea: Bromide, Chloride, 2 500 µg/L ea: Fluoride, 1 000 µg/L ea: Nitrate_as_N, 400 µg/L ea: Nitrite_as_N

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Bromide	4 997 ± 31 µg/L	Chloride	4 997 ± 30 µg/L		
Fluoride	2 499 ± 12 µg/L	Nitrate as N	1 000 ± 6 µg/L		
Nitrite as N	400.0 ± 3.4 µg/L	o-Phosphate	19 990.0 ± 100.0 µg/L		
Sulfate	19 980.0 ± 120.0 µg/L				

Certified Density: 0.998 g/mL (measured at 20 ± 1 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Bromide	IC Assay	3184	020701
Bromide	Volhard	999b	999b
Chloride	IC Assay	3182	060925
Chloride	Volhard	999b	999b
Fluoride	IC Assay	3183	050721
Nitrate_as_N	IC Assay	3185	050517
Nitrite_as_N	Calculated		See Sec. 4.2
Nitrite_as_N	IC Assay	40h	40h
oPhosphate	IC Assay	3186	090723
Sulfate	Calculated		See Sec. 4.2
Sulfate	IC Assay	3181	080603

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Certified Value $(\bar{x}) = \frac{\Sigma x_i}{n}$ ($\bar{x}$) = mean

x_i = individual results

n = number of measurements

Uncertainty $(\pm) = 2\,[\,\Sigma(s_i)^2\,]^{1/2}$ 2 = the coverage factor.

$[\,\Sigma(s_i)^2\,]^{1/2}$ = The square root of the sum of the squares of the most common errors (where 's' stands for the standard deviation) from instrumental measurement, density, NIST SRM uncertainty, weighing, dilution to volume, homogeneity, long term stability and short term stability.

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 CHROMATOGRAM

- N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Keep tightly sealed when not in use. Store and use at 20 ± 4°C. Do not pipette from the container. Do not return removed aliquots to container.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

September 24, 2014

11.2 Period of Validity

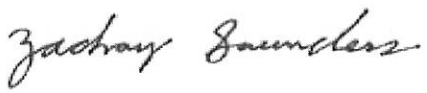
- The certification is valid within the measurement uncertainty specified provided the CRM/RM is handled and stored in accordance with instructions given in Sec 7.0 and used prior to the date given in Sec 11.3. This certification is nullified if the CRM/RM is damaged, contaminated, or otherwise modified.

11.3 Expiration Date

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Zach Saunders
Product Documentation Technician



Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

ICPC ICV 1_00002

INORGANIC VENTURES

CERTIFICATE OF ANALYSIS

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34. "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number (010105).

ACCREDITED Testing Laboratory Certificate 583.01

ACCREDITED Reference Material Producer Certificate 583.02

2.0 PRODUCT DESCRIPTION

484077
ID: ICPC ICV 1_00002
Exp: 11/01/15 Prpd: FLC
ICP ICV 1

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	TA-64
Lot Number:	H2-MEB550054
Matrix:	5% (v/v) HNO_3 2.5% (v/v) HF
Value / Analyte(s):	1 000 µg/mL ea: Si, Sn, Ti, 200 µg/mL ea: Mo, Sb

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Antimony	200.0 ± 1.5 µg/mL	Molybdenum	200.0 ± 0.9 µg/mL	Silicon	1 000 ± 8 µg/mL
Tin	1 000 ± 5 µg/mL	Titanium	1 000 ± 7 µg/mL		

Certified Density: 1.040 g/mL (measured at 20 ± 1 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Mo	Calculated		See Sec. 4.2
Mo	ICP Assay	3134	891307
Sb	Calculated		See Sec. 4.2
Sb	ICP Assay	3102A	061229
Si	Calculated		See Sec. 4.2
Si	ICP Assay	3150	071204
Sn	Calculated		See Sec. 4.2
Sn	ICP Assay	3161a	070330
Ti	Calculated		See Sec. 4.2
Ti	ICP Assay	3162a	060808

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Certified Value $(\bar{\bar{x}}) = \frac{\Sigma x_i}{n}$

($\bar{x}$) = mean
x_i = individual results
n = number of measurements

Uncertainty $(\pm) = 2\,[\,\Sigma(s_i)^2\,]^{1/2}$

2 = the coverage factor.
$[\,\Sigma(s_i)^2\,]^{1/2}$ = The square root of the sum of the squares of the most common errors (where 's' stands for the standard deviation) from instrumental measurement, density, NIST SRM uncertainty, weighing, dilution to volume, homogeneity, long term stability and short term stability.

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

- N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Keep tightly sealed when not in use. Store and use at 20 ± 4°C. Do not pipette from the container. Do not return removed aliquots to container.

- **HF Note:** This standard should not be prepared or stored in glass.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

October 16, 2014

11.2 Period of Validity

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is handled and stored in accordance with instructions given in Sec 7.0 and used prior to the date given in Sec 11.3. This certification is nullified if the CRM/RM is damaged, contaminated, or otherwise modified.

11.3 Expiration Date

EXPIRES
01 2015

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Christy Shortridge
Product Documentation Technician

Christy Shortridge

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Brian Alexander

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Paul R Gaines

Reagent

ICPC ICV 3_00002

INORGANIC™ VENTURES
300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel 800.669.6799 540.585.3000
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info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number (010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

484079
ID: ICPC ICV 3_00002*
Exp: 11/01/15 Prpd: FLC
ICPC ICV 3

2.0 PRODUCT DESCRIPTION

Product Code: Multi Analyte Custom Grade Solution

Catalog Number: TA-65

Lot Number: H2-MEB550055

Matrix: 5% (v/v) HNO3

Value / Analyte(s): 10 000 µg/mL ea:
Al, Ca, Fe,
Na

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum	10 000.0 ± 50.0 µg/mL	Calcium	10 000.0 ± 40.0 µg/mL	Iron	10 000.0 ± 50.0 µg/mL
Sodium	10 000.0 ± 40.0 µg/mL				

Certified Density: 1.176 g/mL (measured at 20 ± 1 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Al	ICP Assay	3101a	060502
Al	EDTA	928	928
Ca	ICP Assay	3109a	050825
Ca	EDTA	928	928
Fe	ICP Assay	3126a	051031
Fe	EDTA	928	928
Na	Gravimetric		See Sec. 4.2
Na	ICP Assay	3152a	120715

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Certified Value $(\bar{x}) = \frac{\Sigma x_i}{n}$

$(\bar{x})$ = mean
x_i = individual results
n = number of measurements

Uncertainty $(\pm) = 2\,[\,\Sigma(s_i)^2\,]^{1/2}$

2 = the coverage factor.
$[\,\Sigma(s_i)^2\,]^{1/2}$ = The square root of the sum of the squares of the most common errors (where 's' stands for the standard deviation) from instrumental measurement, density, NIST SRM uncertainty, weighing, dilution to volume, homogeneity, long term stability and short term stability.

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

- N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Keep tightly sealed when not in use. Store and use at 20 ± 4°C. Do not pipette from the container. Do not return removed aliquots to container.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

October 16, 2014

11.2 Period of Validity

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is handled and stored in accordance with instructions given in Sec 7.0 and used prior to the date given in Sec 11.3. This certification is nullified if the CRM/RM is damaged, contaminated, or otherwise modified.

11.3 Expiration Date

EXPIRES
01 NOV 2015

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Christy Shortridge
Product Documentation Technician

Christy Shortridge

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Brian Alexander

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Paul R Gaines

Reagent

ICPC ICV 4_00002

INORGANIC VENTURES™
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Christiansburg, VA 24073 USA
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CERTIFICATE OF ANALYSIS

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number (010105).

ACCREDITED Testing Laboratory Certificate 883.01 ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

484152
ID: ICPC ICV 4_00002
Exp: 11/01/15 Prpd: FLC
ICPC ICV 4

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	TA-63
Lot Number:	H2-MEB550053
Matrix:	7% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea:

As, B, Ba,
Be, Bi, Cd,
Co, Cr3, Cu,
Li, Mn, Ni,
P, Pb, Sr,
Th, U, V,
Zn,

200 µg/mL ea:
Ag, Se, Tl

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Arsenic	1 000 ± 8 µg/mL	Barium	1 000 ± 5 µg/mL	Beryllium	1 000 ± 5 µg/mL
Bismuth	1 000 ± 6 µg/mL	Boron	1 000 ± 7 µg/mL	Cadmium	1 000 ± 5 µg/mL
Chromium+3	1 000 ± 5 µg/mL	Cobalt	1 000 ± 5 µg/mL	Copper	1 000 ± 7 µg/mL
Lead	1 000 ± 5 µg/mL	Lithium	1 000 ± 7 µg/mL	Manganese	1 000 ± 4 µg/mL
Nickel	1 000 ± 5 µg/mL	Phosphorus	1 000 ± 5 µg/mL	Selenium	200.0 ± 1.2 µg/mL
Silver	200.0 ± 1.3 µg/mL	Strontium	1 000 ± 6 µg/mL	Thallium	200.0 ± 1.2 µg/mL
Thorium	1 000 ± 7 µg/mL	Uranium	1 000 ± 7 µg/mL	Vanadium	1 000 ± 5 µg/mL
Zinc	1 000 ± 6 µg/mL				

Certified Density: 1.106 g/mL (measured at 20 ± 1 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ag	ICP Assay	3151	992212
Ag	Volhard	999b	999b
As	Calculated		See Sec. 4.2
As	ICP Assay	3103a	100818
B	ICP Assay	3107	070514
Ba	Gravimetric		See Sec. 4.2
Ba	ICP Assay	3104a	070222
Be	Calculated		See Sec. 4.2
Be	ICP Assay	3105a	090514
Bi	Calculated		See Sec. 4.2
Bi	ICP Assay	3106	991212
Cd	ICP Assay	3108	060531
Cd	EDTA	928	928
Co	ICP Assay	3113	000630 Co
Co	EDTA	928	928
Cr3	Calculated		See Sec. 4.2
Cr3	ICP Assay	3112a	030730
Cu	ICP Assay	3114	011017
Cu	EDTA	928	928
Li	Gravimetric		See Sec. 4.2
Li	ICP Assay	3129a	100714
Mn	ICP Assay	3132	050429
Mn	EDTA	928	928
Ni	ICP Assay	3136	120619
Ni	EDTA	928	928
P	ICP Assay	3139a	060717
P	Acidimetric	84L	84L
Pb	ICP Assay	3128	101026
Pb	EDTA	928	928
Se	Calculated		See Sec. 4.2
Se	ICP Assay	3149	100901
Sr	ICP Assay	3153a	990906
Sr	EDTA	928	928
Th	EDTA	928	928
Th	ICP Assay	Traceable to SRM 3159	Lot# 992912
Tl	Calculated		See Sec. 4.2
Tl	ICP Assay	3158	993012
U	Calculated		See Sec. 4.2
U	ICP Assay	3164	080521
V	ICP Assay	3165	992706
V	EDTA	928	928
Zn	ICP Assay	3168a	120629
Zn	EDTA	928	928

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Certified Value $(\bar{x}) = \frac{\Sigma x_i}{n}$

$(\bar{x})$ = mean
x_i = individual results
n = number of measurements

Uncertainty $(\pm) = 2\,[\,\Sigma(s_i)^2\,]^{1/2}$

2 = the coverage factor.
$[\,\Sigma(s_i)^2\,]^{1/2}$ = The square root of the sum of the squares of the most common errors (where 's' stands for the standard deviation) from instrumental measurement, density, NIST SRM uncertainty, weighing, dilution to volume, homogeneity, long term stability and short term stability.

Certified Abundance:

IV's Certified Abundance

Isotope	Atom %
Uranium 238U	99.8 ± 0.1
Uranium 235U	0.21 ± 0.05

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

- N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Keep tightly sealed when not in use. Store and use at 20 ± 4°C. Do not pipette from the container. Do not return removed aliquots to container.

- **Uranium Note:** If uranium is present in this standard, it is natural abundance unless specified in Section 3.0.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

October 16, 2014

11.2 Period of Validity

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is handled and stored in accordance with instructions given in Sec 7.0 and used prior to the date given in Sec 11.3. This certification is nullified if the CRM/RM is damaged, contaminated, or otherwise modified.

11.3 Expiration Date

EXPIRES
01 Nov 2015

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Christy Shortridge
Product Documentation Technician

Christy Shortridge

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Brian Alexander

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Paul R Gaines

Reagent

ICPC ICV2_00002

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number (010105).

ACCREDITED Testing Laboratory Certificate 883.01 — ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

484078
ID: ICPC ICV2_00002
Exp: 11/01/15 Prpd: FLC
ICPC ICV2

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	TA-66
Lot Number:	H2-MEB550056
Matrix:	1% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: K, Mg, S

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Magnesium	**10 000.0 ± 50.0 µg/mL**	**Potassium**	**10 000.0 ± 40.0 µg/mL**	**Sulfur**	**10 000.0 ± 50.0 µg/mL**

Certified Density: 1.078 g/mL (measured at 20 ± 1 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
K	Gravimetric		See Sec. 4.2
K	ICP Assay	3141a	051220
Mg	ICP Assay	3131a	050302
Mg	EDTA	928	928
S	ICP Assay	3154	892205
S	Acidimetric	84L	84L

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Certified Value $(\bar{x}) = \frac{\Sigma x_i}{n}$ ($\bar{x}$) = mean

x_i = individual results

n = number of measurements

Uncertainty $(\pm) = 2\,[\,\Sigma(s_i)^2\,]^{\frac{1}{2}}$ 2 = the coverage factor.

$[\,\Sigma(s_i)^2\,]^{\frac{1}{2}}$ = The square root of the sum of the squares of the most common errors (where 's' stands for the standard deviation) from instrumental measurement, density, NIST SRM uncertainty, weighing, dilution to volume, homogeneity, long term stability and short term stability.

4.0 TRACEABILITY TO NIST

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4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

- N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Keep tightly sealed when not in use. Store and use at 20 ± 4°C. Do not pipette from the container. Do not return removed aliquots to container.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

October 16, 2014

11.2 Period of Validity

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is handled and stored in accordance with instructions given in Sec 7.0 and used prior to the date given in Sec 11.3. This certification is nullified if the CRM/RM is damaged, contaminated, or otherwise modified.

11.3 Expiration Date

EXPIRES
01 Nov 2015

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Christy Shortridge
Product Documentation Technician

Christy Shortridge

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Brian Alexander

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Paul R Gaines

Reagent

ICPC13 AB 1_00002

AccuScience
15520 Oakwood Street
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www.accuscience.com

435167
ID: ICPC13 AB 1_00002
Exp:09/01/15 Prpd:FLC Opn:09/11/14
ICPC 2013 AB 1

435168
ID: ICPC13 AB 2_00002
Exp:09/01/15 Prpd:FLC Opn:09/11/14
ICPC 2013 AB 2

Rev 0

Certificate of Analysis

Description: Custom 26 Element Mix, #2368, 250 mL
mg/L in 5% HNO_3
Ag, Mo, Sb, Tl, Bi, Cd, Co, Cr, Cu, Mn, Ni, Si, Sn, Ti shipped separately.

Catalog No:	Matrix:	Lot No:	Storage:	Exp. Date:	Date Received:
ACSM2368-01-250ML	5% HNO3 + Tr HF	1064359	Ambient	1-Sep-2015	

Element	Symbol	CAS No	Purity %	Source Lot No	Concentration mg/L	
Selenium	Se	7782-49-2	99.999	7027.46.4	100	+/- .4
Arsenic	As	7440-38-2		7002.46.5	500	+/- 2
Boron	B	7440-42-8		7003.46.5	500	+/- 2
Barium	Ba	7440-39-3		7004.29.2	500	+/- 2
Beryllium	Be	7440-41-7		7005.46.5	500	+/- 2
Lithium	Li	7439-93-2		7015.46.5	500	+/- 2
Lead	Pb	7439-92-1		7023.29.2	500	+/- 2
Strontium	Sr	7440-24-6		7030.46.4	500	+/- 2
Thorium	Th	7440-29-1		7031.46.3	500	+/- 2
Uranium	U	7440-61-1		7035.330.1	500	+/- 2
Vanadium	V	7440-62-2		7036.46.5	500	+/- 2
Zinc	Zn	7440-66-6		7037.46.5	500	+/- 2
Silver	Ag	7440-22-4		7000.29.1	100	+/- .4
Molybdenum	Mo	7439-98-7		7018.29.3	100	+/- .4
Antimony	Sb	7440-36-0		7026.46.3	100	+/- .4
Thallium	Tl	7440-28-0		7236.46.1	100	+/- .4
Bismuth	Bi	7440-69-9		7040.46.2	500	+/- 2
Cadmium	Cd	7440-43-9		7007.29.3	500	+/- 2
Cobalt	Co	7440-48-4		7008.46.8	500	+/- 2
Chromium	Cr	7440-47-3		7009.46.3	500	+/- 2
Copper	Cu	7440-50-8		7011.46.5	500	+/- 10
Manganese	Mn	7439-96-5		7017.46.4	500	+/- 2
Nickel	Ni	7440-02-0		7021.46.8	500	+/- 2
Silicon	Si	7440-21-3		7028.46.12	500	+/- 2
Tin	Sn	7440-31-5		7029.46.4	500	+/- 2
Titanium	Ti	7440-32-6		7033.38.2	500	+/- 2

Certified By: Carrie Bibbins

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

This standard was manufactured by an ISO 17025 Chemical Testing Lab (Certificate number 3031.01) accredited by The American Association of Laboratory Accreditation (A2LA). Manufacturer's Quality System audited and registered by NSF-ISR to ISO 9001:2008 (Certificate number IZ391-IS4).

Reagent

ICPC13 AB 2_00002

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435167
ID: ICPC13 AB 1_00002
Exp:09/01/15 Prpd:FLC Opn:09/11/14
ICPC 2013 AB 1

435168
ID: ICPC13 AB 2_00002
Exp:09/01/15 Prpd:FLC Opn:09/11/14
ICPC 2013 AB 2

Rev 0

Certificate of Analysis

Description: Custom 26 Element Mix, #2368, 250 mL
mg/L in 5% HNO_3
Ag, Mo, Sb, Tl, Bi, Cd, Co, Cr, Cu, Mn, Ni, Si, Sn, Ti shipped separately.

Catalog No:	Matrix:	Lot No:	Storage:	Exp. Date:	Date Received:
ACSM2368-01-250ML	5% HNO3 + Tr HF	1064359	Ambient	1-Sep-2015	

Element	Symbol	CAS No	Purity %	Source Lot No	Concentration mg/L	
Selenium	Se	7782-49-2	99.999	7027.46.4	100	+/- .4
Arsenic	As	7440-38-2		7002.46.5	500	+/- 2
Boron	B	7440-42-8		7003.46.5	500	+/- 2
Barium	Ba	7440-39-3		7004.29.2	500	+/- 2
Beryllium	Be	7440-41-7		7005.46.5	500	+/- 2
Lithium	Li	7439-93-2		7015.46.5	500	+/- 2
Lead	Pb	7439-92-1		7023.29.2	500	+/- 2
Strontium	Sr	7440-24-6		7030.46.4	500	+/- 2
Thorium	Th	7440-29-1		7031.46.3	500	+/- 2
Uranium	U	7440-61-1		7035.330.1	500	+/- 2
Vanadium	V	7440-62-2		7036.46.5	500	+/- 2
Zinc	Zn	7440-66-6		7037.46.5	500	+/- 2
Silver	Ag	7440-22-4		7000.29.1	100	+/- .4
Molybdenum	Mo	7439-98-7		7018.29.3	100	+/- .4
Antimony	Sb	7440-36-0		7026.46.3	100	+/- .4
Thallium	Tl	7440-28-0		7236.46.1	100	+/- .4
Bismuth	Bi	7440-69-9		7040.46.2	500	+/- 2
Cadmium	Cd	7440-43-9		7007.29.3	500	+/- 2
Cobalt	Co	7440-48-4		7008.46.8	500	+/- 2
Chromium	Cr	7440-47-3		7009.46.3	500	+/- 2
Copper	Cu	7440-50-8		7011.46.5	500	+/- 10
Manganese	Mn	7439-96-5		7017.46.4	500	+/- 2
Nickel	Ni	7440-02-0		7021.46.8	500	+/- 2
Silicon	Si	7440-21-3		7028.46.12	500	+/- 2
Tin	Sn	7440-31-5		7029.46.4	500	+/- 2
Titanium	Ti	7440-32-6		7033.38.2	500	+/- 2

Certified By: Carrie Bibbins

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

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Reagent

ICPC13 CAL A_00002

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www.accuscience.com

444929
ID: ICPC13 CAL A_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 A

444944
ID: ICPC13 CAL B_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 B

Certificate of Analysis

Rev 0

Description: Custom 34 Element Mix (ICPC- 2013- Cal 2,3), #2366, 500 mL
mg/L in 10% HNO_3 + Tr HF
K, Na, P, Al, Ca, Fe, Mg, B, Ba, Li, Pb, Sr, Th, U, V, Zn, Tl, Se, As, Be, Bi, Cd, Co, Cr, Cu, Mn, Ni shipped separately.

Catalog No:	Matrix:	Lot No:	Storage:	Exp. Date:	Date Received:
ACSM2366-01-500ml	10% HNO_3 + Tr HF	1064528	Ambient	1-Sep-2015	

Element	Symbol	CAS No	Purity %	Source Lot No	Concentration mg/L
Silver	Ag	7440-22-4	99.999	7000.29.1	200 +/- .6
Molybdenum	Mo	7439-98-7	99.999	7018.29.3	200 +/- .6
Antimony	Sb	7440-36-0	99.999	7026.46.3	200 +/- .6
Silicon	Si	7440-21-3	99.999	7028.46.15	1000 +/- 3
Tin	Sn	7440-31-5	99.999	7029.46.4	1000 +/- 3
Titanium	Ti	7440-32-6	99.995	7033.343.1	1000 +/- 3
Sulfur	S	7704-34-9	95.9	7025.43.5	10000 +/- 30
Potassium	K	7440-09-7	99.999	7013.46.10	10000 +/- 20
Sodium	Na	7440-23-5	99.999	7020.46.7	10000 +/- 20
Phosphorus	P	7723-14-0	99.9999	7022.46.12	10000 +/- 20

Certified By: Carrie Bibbins

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

This standard was manufactured by an ISO 17025 Chemical Testing Lab (Certificate number 3031.01) accredited by The American Association of Laboratory Accreditation (A2LA). Manufacturer's Quality System audited and registered by NSF-ISR to ISO 9001:2008 (Certificate number IZ391-IS4).

444948
ID: ICPC13 CAL C_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 C

444961
ID: ICPC13 CAL D_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 D

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Certificate of Analysis

Rev 0

Description: Custom 34 Element Mix (ICPC- 2013- Cal 2,3), #2366, 500 mL
mg/L in 10% HNO_3
Ag, Mo, Sb, Si, Sn, Ti, S, K, Na, P, Tl, Se, As, Be, Bi, Cd, Co, Cr, Cu, Mn, Ni shipped separately.

Catalog No:	Matrix:	Lot No:	Storage:	Exp. Date:	Date Received:
ACSM2366-01-500mlC	10% HNO_3	1064535	Ambient	1-Sep-2015	

Element	Symbol	CAS No	Purity %	Source Lot No	Concentration mg/L
Aluminum	Al	7429-90-5	99.9995	7001.46.8	10000 +/- 20
Calcium	Ca	7440-70-2	99.999	7006.29.2	10000 +/- 20
Iron	Fe	7439-89-6	99.99	7012.46.14	10000 +/- 20
Magnesium	Mg	7439-95-4	99.99	7016.46.5	10000 +/- 20
Boron	B	7440-42-8	99.999	7003.46.5	1000 +/- 3
Barium	Ba	7440-39-3	99.997	7004.29.3	1000 +/- 3
Lithium	Li	7439-93-2	99.999	7015.46.5	1000 +/- 3
Lead	Pb	7439-92-1	99.999	7023.29.2	1000 +/- 3
Strontium	Sr	7440-24-6	99.998	7030.46.4	1000 +/- 3
Thorium	Th	7440-29-1	99.98	7031.46.4	1000 +/- 3
Uranium	U	7440-61-1	99.8	7035.330.1	1000 +/- 3
Vanadium	V	7440-62-2	99.995	7036.46.6	1000 +/- 3
Zinc	Zn	7440-66-6	99.9995	7037.46.5	1000 +/- 3

Certified By: Carrie Bibbins

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

This standard was manufactured by an ISO 17025 Chemical Testing Lab (Certificate number 3031.01) accredited by The American Association of Laboratory Accreditation (A2LA). Manufacturer's Quality System audited and registered by NSF-ISR to ISO 9001:2008 (Certificate number IZ391-IS4).

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444963
ID: ICPC13 CAL E_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 E

Certificate of Analysis

Rev 0

Description: Custom 34 Element Mix (ICPC- 2013- Cal 2,3), #2366, 500 mL mg/L in 10% HNO_3

Catalog No:	Matrix:	Lot No:	Storage:	Exp. Date:	Date Received:
ACSM2366-01-500mlE	10% HNO_3 + Tr HF	1064534	Ambient	1-Sep-2015	

Element	Symbol	CAS No	Purity %	Source Lot No	Concentration mg/L
Thallium	Tl	7440-28-0	99.99	7034.29.4	200 +/- .6
Selenium	Se	7782-49-2	99.999	7027.46.4	200 +/- .6
Arsenic	As	7440-38-2	99.9999	7002.46.5	1000 +/- 3
Beryllium	Be	7440-41-7	99.999	7005.46.5	1000 +/- 3
Bismuth	Bi	7440-69-9	99.999	7040.117.1	1000 +/- 3
Cadmium	Cd	7440-43-9	99.9999	7007.46.3	1000 +/- 3
Cobalt	Co	7440-48-4	99.995	7008.46.8	1000 +/- 3
Chromium	Cr	7440-47-3	99.998	7009.46.3	1000 +/- 3
Copper	Cu	7440-50-8	99.9995	7011.46.5	1000 +/- 3
Manganese	Mn	7439-96-5	99.95	7017.46.5	1000 +/- 3
Nickel	Ni	7440-02-0	99.995	7021.46.8	1000 +/- 3

Certified By: Carrie Bibbins

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

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Reagent

ICPC13 CAL B_00002

AccuScience
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www.accuscience.com

444929
ID: ICPC13 CAL A_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 A

444944
ID: ICPC13 CAL B_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 B

Certificate of Analysis

Rev 0

Description: Custom 34 Element Mix (ICPC- 2013- Cal 2,3), #2366, 500 mL
mg/L in 10% HNO_3 + Tr HF
K, Na, P, Al, Ca, Fe, Mg, B, Ba, Li, Pb, Sr, Th, U, V, Zn, Tl, Se, As, Be, Bi, Cd, Co, Cr, Cu, Mn, Ni shipped separately.

Catalog No:	Matrix:	Lot No:	Storage:	Exp. Date:	Date Received:
ACSM2366-01-500ml	10% HNO_3 + Tr HF	1064528	Ambient	1-Sep-2015	

Element	Symbol	CAS No	Purity %	Source Lot No	Concentration mg/L
Silver	Ag	7440-22-4	99.999	7000.29.1	200 +/- .6
Molybdenum	Mo	7439-98-7	99.999	7018.29.3	200 +/- .6
Antimony	Sb	7440-36-0	99.999	7026.46.3	200 +/- .6
Silicon	Si	7440-21-3	99.999	7028.46.15	1000 +/- 3
Tin	Sn	7440-31-5	99.999	7029.46.4	1000 +/- 3
Titanium	Ti	7440-32-6	99.995	7033.343.1	1000 +/- 3
Sulfur	S	7704-34-9	95.9	7025.43.5	10000 +/- 30
Potassium	K	7440-09-7	99.999	7013.46.10	10000 +/- 20
Sodium	Na	7440-23-5	99.999	7020.46.7	10000 +/- 20
Phosphorus	P	7723-14-0	99.9999	7022.46.12	10000 +/- 20

Certified By: Carrie Bibbins

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

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444948
ID: ICPC13 CAL C_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 C

444961
ID: ICPC13 CAL D_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 D

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Certificate of Analysis

Rev 0

Description: Custom 34 Element Mix (ICPC- 2013- Cal 2,3), #2366, 500 mL
mg/L in 10% HNO_3
Ag, Mo, Sb, Si, Sn, Ti, S, K, Na, P, Tl, Se, As, Be, Bi, Cd, Co, Cr, Cu, Mn, Ni shipped separately.

Catalog No:	Matrix:	Lot No:	Storage:	Exp. Date:	Date Received:
ACSM2366-01-500mlC	10% HNO_3	1064535	Ambient	1-Sep-2015	

Element	Symbol	CAS No	Purity %	Source Lot No	Concentration mg/L
Aluminum	Al	7429-90-5	99.9995	7001.46.8	10000 +/- 20
Calcium	Ca	7440-70-2	99.999	7006.29.2	10000 +/- 20
Iron	Fe	7439-89-6	99.99	7012.46.14	10000 +/- 20
Magnesium	Mg	7439-95-4	99.99	7016.46.5	10000 +/- 20
Boron	B	7440-42-8	99.999	7003.46.5	1000 +/- 3
Barium	Ba	7440-39-3	99.997	7004.29.3	1000 +/- 3
Lithium	Li	7439-93-2	99.999	7015.46.5	1000 +/- 3
Lead	Pb	7439-92-1	99.999	7023.29.2	1000 +/- 3
Strontium	Sr	7440-24-6	99.998	7030.46.4	1000 +/- 3
Thorium	Th	7440-29-1	99.98	7031.46.4	1000 +/- 3
Uranium	U	7440-61-1	99.8	7035.330.1	1000 +/- 3
Vanadium	V	7440-62-2	99.995	7036.46.6	1000 +/- 3
Zinc	Zn	7440-66-6	99.9995	7037.46.5	1000 +/- 3

Certified By: Carrie Bibbins

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

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444963
ID: ICPC13 CAL E_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 E

Certificate of Analysis

Rev 0

Description: Custom 34 Element Mix (ICPC- 2013- Cal 2,3), #2366, 500 mL mg/L in 10% HNO_3

Catalog No:	Matrix:	Lot No:	Storage:	Exp. Date:	Date Received:
ACSM2366-01-500mlE	10% HNO_3 + Tr HF	1064534	Ambient	1-Sep-2015	

Element	Symbol	CAS No	Purity %	Source Lot No	Concentration mg/L
Thallium	Tl	7440-28-0	99.99	7034.29.4	200 +/- .6
Selenium	Se	7782-49-2	99.999	7027.46.4	200 +/- .6
Arsenic	As	7440-38-2	99.9999	7002.46.5	1000 +/- 3
Beryllium	Be	7440-41-7	99.999	7005.46.5	1000 +/- 3
Bismuth	Bi	7440-69-9	99.999	7040.117.1	1000 +/- 3
Cadmium	Cd	7440-43-9	99.9999	7007.46.3	1000 +/- 3
Cobalt	Co	7440-48-4	99.995	7008.46.8	1000 +/- 3
Chromium	Cr	7440-47-3	99.998	7009.46.3	1000 +/- 3
Copper	Cu	7440-50-8	99.9995	7011.46.5	1000 +/- 3
Manganese	Mn	7439-96-5	99.95	7017.46.5	1000 +/- 3
Nickel	Ni	7440-02-0	99.995	7021.46.8	1000 +/- 3

Certified By: Carrie Bibbins

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

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Reagent

ICPC13 CAL C_00002

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444929
ID: ICPC13 CAL A_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 A

444944
ID: ICPC13 CAL B_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 B

Certificate of Analysis

Rev 0

Description: Custom 34 Element Mix (ICPC- 2013- Cal 2,3), #2366, 500 mL
mg/L in 10% HNO_3 + Tr HF
K, Na, P, Al, Ca, Fe, Mg, B, Ba, Li, Pb, Sr, Th, U, V, Zn, Tl, Se, As, Be, Bi, Cd, Co, Cr, Cu, Mn, Ni shipped separately.

Catalog No:	Matrix:	Lot No:	Storage:	Exp. Date:	Date Received:
ACSM2366-01-500ml	10% HNO_3 + Tr HF	1064528	Ambient	1-Sep-2015	

Element	Symbol	CAS No	Purity %	Source Lot No	Concentration mg/L
Silver	Ag	7440-22-4	99.999	7000.29.1	200 +/- .6
Molybdenum	Mo	7439-98-7	99.999	7018.29.3	200 +/- .6
Antimony	Sb	7440-36-0	99.999	7026.46.3	200 +/- .6
Silicon	Si	7440-21-3	99.999	7028.46.15	1000 +/- 3
Tin	Sn	7440-31-5	99.999	7029.46.4	1000 +/- 3
Titanium	Ti	7440-32-6	99.995	7033.343.1	1000 +/- 3
Sulfur	S	7704-34-9	95.9	7025.43.5	10000 +/- 30
Potassium	K	7440-09-7	99.999	7013.46.10	10000 +/- 20
Sodium	Na	7440-23-5	99.999	7020.46.7	10000 +/- 20
Phosphorus	P	7723-14-0	99.9999	7022.46.12	10000 +/- 20

Certified By: Carrie Bibbins

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

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444948
ID: ICPC13 CAL C_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 C

444961
ID: ICPC13 CAL D_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 D

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Certificate of Analysis

Rev 0

Description: Custom 34 Element Mix (ICPC- 2013- Cal 2,3), #2366, 500 mL
mg/L in 10% HNO_3
Ag, Mo, Sb, Si, Sn, Ti, S, K, Na, P, Tl, Se, As, Be, Bi, Cd, Co, Cr, Cu, Mn, Ni shipped separately.

Catalog No:	Matrix:	Lot No:	Storage:	Exp. Date:	Date Received:
ACSM2366-01-500mlC	10% HNO_3	1064535	Ambient	1-Sep-2015	

Element	Symbol	CAS No	Purity %	Source Lot No	Concentration mg/L
Aluminum	Al	7429-90-5	99.9995	7001.46.8	10000 +/- 20
Calcium	Ca	7440-70-2	99.999	7006.29.2	10000 +/- 20
Iron	Fe	7439-89-6	99.99	7012.46.14	10000 +/- 20
Magnesium	Mg	7439-95-4	99.99	7016.46.5	10000 +/- 20
Boron	B	7440-42-8	99.999	7003.46.5	1000 +/- 3
Barium	Ba	7440-39-3	99.997	7004.29.3	1000 +/- 3
Lithium	Li	7439-93-2	99.999	7015.46.5	1000 +/- 3
Lead	Pb	7439-92-1	99.999	7023.29.2	1000 +/- 3
Strontium	Sr	7440-24-6	99.998	7030.46.4	1000 +/- 3
Thorium	Th	7440-29-1	99.98	7031.46.4	1000 +/- 3
Uranium	U	7440-61-1	99.8	7035.330.1	1000 +/- 3
Vanadium	V	7440-62-2	99.995	7036.46.6	1000 +/- 3
Zinc	Zn	7440-66-6	99.9995	7037.46.5	1000 +/- 3

Certified By: Carrie Bibbins

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

This standard was manufactured by an ISO 17025 Chemical Testing Lab (Certificate number 3031.01) accredited by The American Association of Laboratory Accreditation (A2LA). Manufacturer's Quality System audited and registered by NSF-ISR to ISO 9001:2008 (Certificate number IZ391-IS4).

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www.accuscience.com

444963
ID: ICPC13 CAL E_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 E

Certificate of Analysis

Rev 0

Description: Custom 34 Element Mix (ICPC- 2013- Cal 2,3), #2366, 500 mL mg/L in 10% HNO_3

Catalog No:	Matrix:	Lot No:	Storage:	Exp. Date:	Date Received:
ACSM2366-01-500mlE	10% HNO_3 + Tr HF	1064534	Ambient	1-Sep-2015	

Element	Symbol	CAS No	Purity %	Source Lot No	Concentration mg/L
Thallium	Tl	7440-28-0	99.99	7034.29.4	200 +/- .6
Selenium	Se	7782-49-2	99.999	7027.46.4	200 +/- .6
Arsenic	As	7440-38-2	99.9999	7002.46.5	1000 +/- 3
Beryllium	Be	7440-41-7	99.999	7005.46.5	1000 +/- 3
Bismuth	Bi	7440-69-9	99.999	7040.117.1	1000 +/- 3
Cadmium	Cd	7440-43-9	99.9999	7007.46.3	1000 +/- 3
Cobalt	Co	7440-48-4	99.995	7008.46.8	1000 +/- 3
Chromium	Cr	7440-47-3	99.998	7009.46.3	1000 +/- 3
Copper	Cu	7440-50-8	99.9995	7011.46.5	1000 +/- 3
Manganese	Mn	7439-96-5	99.95	7017.46.5	1000 +/- 3
Nickel	Ni	7440-02-0	99.995	7021.46.8	1000 +/- 3

Certified By: Carrie Bibbins

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

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Reagent

ICPC13 CAL D_00002

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444929
ID: ICPC13 CAL A_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 A

444944
ID: ICPC13 CAL B_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 B

Certificate of Analysis

Rev 0

Description: Custom 34 Element Mix (ICPC- 2013- Cal 2,3), #2366, 500 mL
mg/L in 10% HNO_3 + Tr HF
K, Na, P, Al, Ca, Fe, Mg, B, Ba, Li, Pb, Sr, Th, U, V, Zn, Tl, Se, As, Be, Bi, Cd, Co, Cr, Cu, Mn, Ni shipped separately.

Catalog No:	Matrix:	Lot No:	Storage:	Exp. Date:	Date Received:
ACSM2366-01-500ml	10% HNO_3 + Tr HF	1064528	Ambient	1-Sep-2015	

Element	Symbol	CAS No	Purity %	Source Lot No	Concentration mg/L
Silver	Ag	7440-22-4	99.999	7000.29.1	200 +/- .6
Molybdenum	Mo	7439-98-7	99.999	7018.29.3	200 +/- .6
Antimony	Sb	7440-36-0	99.999	7026.46.3	200 +/- .6
Silicon	Si	7440-21-3	99.999	7028.46.15	1000 +/- 3
Tin	Sn	7440-31-5	99.999	7029.46.4	1000 +/- 3
Titanium	Ti	7440-32-6	99.995	7033.343.1	1000 +/- 3
Sulfur	S	7704-34-9	95.9	7025.43.5	10000 +/- 30
Potassium	K	7440-09-7	99.999	7013.46.10	10000 +/- 20
Sodium	Na	7440-23-5	99.999	7020.46.7	10000 +/- 20
Phosphorus	P	7723-14-0	99.9999	7022.46.12	10000 +/- 20

Certified By: Carrie Bibbins

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

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444948
ID: ICPC13 CAL C_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 C

444961
ID: ICPC13 CAL D_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 D

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Certificate of Analysis

Rev 0

Description: Custom 34 Element Mix (ICPC- 2013- Cal 2,3), #2366, 500 mL
mg/L in 10% HNO_3
Ag, Mo, Sb, Si, Sn, Ti, S, K, Na, P, Tl, Se, As, Be, Bi, Cd, Co, Cr, Cu, Mn, Ni shipped separately.

Catalog No:	Matrix:	Lot No:	Storage:	Exp. Date:	Date Received:
ACSM2366-01-500mlC	10% HNO_3	1064535	Ambient	1-Sep-2015	

Element	Symbol	CAS No	Purity %	Source Lot No	Concentration mg/L
Aluminum	Al	7429-90-5	99.9995	7001.46.8	10000 +/- 20
Calcium	Ca	7440-70-2	99.999	7006.29.2	10000 +/- 20
Iron	Fe	7439-89-6	99.99	7012.46.14	10000 +/- 20
Magnesium	Mg	7439-95-4	99.99	7016.46.5	10000 +/- 20
Boron	B	7440-42-8	99.999	7003.46.5	1000 +/- 3
Barium	Ba	7440-39-3	99.997	7004.29.3	1000 +/- 3
Lithium	Li	7439-93-2	99.999	7015.46.5	1000 +/- 3
Lead	Pb	7439-92-1	99.999	7023.29.2	1000 +/- 3
Strontium	Sr	7440-24-6	99.998	7030.46.4	1000 +/- 3
Thorium	Th	7440-29-1	99.98	7031.46.4	1000 +/- 3
Uranium	U	7440-61-1	99.8	7035.330.1	1000 +/- 3
Vanadium	V	7440-62-2	99.995	7036.46.6	1000 +/- 3
Zinc	Zn	7440-66-6	99.9995	7037.46.5	1000 +/- 3

Certified By: Carrie Bibbins

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

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444963
ID: ICPC13 CAL E_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 E

Certificate of Analysis

Rev 0

Description: Custom 34 Element Mix (ICPC- 2013- Cal 2,3), #2366, 500 mL mg/L in 10% HNO_3

Catalog No:	Matrix:	Lot No:	Storage:	Exp. Date:	Date Received:
ACSM2366-01-500mlE	10% HNO_3 + Tr HF	1064534	Ambient	1-Sep-2015	

Element	Symbol	CAS No	Purity %	Source Lot No	Concentration mg/L
Thallium	Tl	7440-28-0	99.99	7034.29.4	200 +/- .6
Selenium	Se	7782-49-2	99.999	7027.46.4	200 +/- .6
Arsenic	As	7440-38-2	99.9999	7002.46.5	1000 +/- 3
Beryllium	Be	7440-41-7	99.999	7005.46.5	1000 +/- 3
Bismuth	Bi	7440-69-9	99.999	7040.117.1	1000 +/- 3
Cadmium	Cd	7440-43-9	99.9999	7007.46.3	1000 +/- 3
Cobalt	Co	7440-48-4	99.995	7008.46.8	1000 +/- 3
Chromium	Cr	7440-47-3	99.998	7009.46.3	1000 +/- 3
Copper	Cu	7440-50-8	99.9995	7011.46.5	1000 +/- 3
Manganese	Mn	7439-96-5	99.95	7017.46.5	1000 +/- 3
Nickel	Ni	7440-02-0	99.995	7021.46.8	1000 +/- 3

Certified By: Carrie Bibbins

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

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Reagent

ICPC13 CAL E_00002

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444929
ID: ICPC13 CAL A_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 A

444944
ID: ICPC13 CAL B_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 B

Certificate of Analysis

Rev 0

Description: Custom 34 Element Mix (ICPC- 2013- Cal 2,3), #2366, 500 mL
mg/L in 10% HNO_3 + Tr HF
K, Na, P, Al, Ca, Fe, Mg, B, Ba, Li, Pb, Sr, Th, U, V, Zn, Tl, Se, As, Be, Bi, Cd, Co, Cr, Cu, Mn, Ni shipped separately.

Catalog No:	Matrix:	Lot No:	Storage:	Exp. Date:	Date Received:
ACSM2366-01-500ml	10% HNO_3 + Tr HF	1064528	Ambient	1-Sep-2015	

Element	Symbol	CAS No	Purity %	Source Lot No	Concentration mg/L
Silver	Ag	7440-22-4	99.999	7000.29.1	200 +/- .6
Molybdenum	Mo	7439-98-7	99.999	7018.29.3	200 +/- .6
Antimony	Sb	7440-36-0	99.999	7026.46.3	200 +/- .6
Silicon	Si	7440-21-3	99.999	7028.46.15	1000 +/- 3
Tin	Sn	7440-31-5	99.999	7029.46.4	1000 +/- 3
Titanium	Ti	7440-32-6	99.995	7033.343.1	1000 +/- 3
Sulfur	S	7704-34-9	95.9	7025.43.5	10000 +/- 30
Potassium	K	7440-09-7	99.999	7013.46.10	10000 +/- 20
Sodium	Na	7440-23-5	99.999	7020.46.7	10000 +/- 20
Phosphorus	P	7723-14-0	99.9999	7022.46.12	10000 +/- 20

Certified By: Carrie Bibbins

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

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444948
ID: ICPC13 CAL C_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 C

444961
ID: ICPC13 CAL D_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 D

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Certificate of Analysis

Rev 0

Description: Custom 34 Element Mix (ICPC- 2013- Cal 2,3), #2366, 500 mL
mg/L in 10% HNO_3
Ag, Mo, Sb, Si, Sn, Ti, S, K, Na, P, Tl, Se, As, Be, Bi, Cd, Co, Cr, Cu, Mn, Ni shipped separately.

Catalog No:	Matrix:	Lot No:	Storage:	Exp. Date:	Date Received:
ACSM2366-01-500mlC	10% HNO_3	1064535	Ambient	1-Sep-2015	

Element	Symbol	CAS No	Purity %	Source Lot No	Concentration mg/L
Aluminum	Al	7429-90-5	99.9995	7001.46.8	10000 +/- 20
Calcium	Ca	7440-70-2	99.999	7006.29.2	10000 +/- 20
Iron	Fe	7439-89-6	99.99	7012.46.14	10000 +/- 20
Magnesium	Mg	7439-95-4	99.99	7016.46.5	10000 +/- 20
Boron	B	7440-42-8	99.999	7003.46.5	1000 +/- 3
Barium	Ba	7440-39-3	99.997	7004.29.3	1000 +/- 3
Lithium	Li	7439-93-2	99.999	7015.46.5	1000 +/- 3
Lead	Pb	7439-92-1	99.999	7023.29.2	1000 +/- 3
Strontium	Sr	7440-24-6	99.998	7030.46.4	1000 +/- 3
Thorium	Th	7440-29-1	99.98	7031.46.4	1000 +/- 3
Uranium	U	7440-61-1	99.8	7035.330.1	1000 +/- 3
Vanadium	V	7440-62-2	99.995	7036.46.6	1000 +/- 3
Zinc	Zn	7440-66-6	99.9995	7037.46.5	1000 +/- 3

Certified By: Carrie Bibbins

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

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444963
ID: ICPC13 CAL E_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 E

Certificate of Analysis

Rev 0

Description: Custom 34 Element Mix (ICPC- 2013- Cal 2,3), #2366, 500 mL mg/L in 10% HNO_3

Catalog No:	Matrix:	Lot No:	Storage:	Exp. Date:	Date Received:
ACSM2366-01-500mlE	10% HNO_3 + Tr HF	1064534	Ambient	1-Sep-2015	

Element	Symbol	CAS No	Purity %	Source Lot No	Concentration mg/L
Thallium	Tl	7440-28-0	99.99	7034.29.4	200 +/- .6
Selenium	Se	7782-49-2	99.999	7027.46.4	200 +/- .6
Arsenic	As	7440-38-2	99.9999	7002.46.5	1000 +/- 3
Beryllium	Be	7440-41-7	99.999	7005.46.5	1000 +/- 3
Bismuth	Bi	7440-69-9	99.999	7040.117.1	1000 +/- 3
Cadmium	Cd	7440-43-9	99.9999	7007.46.3	1000 +/- 3
Cobalt	Co	7440-48-4	99.995	7008.46.8	1000 +/- 3
Chromium	Cr	7440-47-3	99.998	7009.46.3	1000 +/- 3
Copper	Cu	7440-50-8	99.9995	7011.46.5	1000 +/- 3
Manganese	Mn	7439-96-5	99.95	7017.46.5	1000 +/- 3
Nickel	Ni	7440-02-0	99.995	7021.46.8	1000 +/- 3

Certified By: Carrie Bibbins

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

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Reagent

ICPC13 ICSA 1_00002

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444894
ID: ICPC13 ICSA 1_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 ICSA 1

444908
ID: ICPC13 ICSA 2_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 ICSA 2

Certificate of Analysis

Rev 0

Description: Custom 8 Element Mix, #2367, 500 mL
20,000 mg/L in 5% HNO_3
Al, Ca, Fe, Mg shipped separately in 10% HNO_3.

Catalog No:	Matrix:	Lot No:	Storage:	Exp. Date:	Date Received:
ACSM2367-01-500ml	5% HNO3	1064353	Ambient	1-Sep-2015	

Element	Symbol	CAS No	Purity %	Source Lot No	Concentration mg/L
Potassium	K	7440-09-7	99.999	7013.46.10	20000 +/- 40
Sodium	Na	7440-23-5	99.999	7020.46.7	20000 +/- 40
Phosphorus	P	7723-14-0	99.9999	7022.46.12	20000 +/- 40
Sulfur	S	7704-34-9	95.9	7025.43.5	20000 +/- 70
Aluminum	Al	7429-90-5	99.9995	7001.46.8	20000 +/- 40
Calcium	Ca	7440-70-2	99.999	7006.29.2	20000 +/- 40
Iron	Fe	7439-89-6	99.99	7012.46.14	20000 +/- 40
Magnesium	Mg	7439-95-4	99.99	7016.46.5	20000 +/- 40

Certified By: Tiffany Kwasigroch

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

This standard was manufactured by an ISO 17025 Chemical Testing Lab (Certificate number 3031.01) accredited by The American Association of Laboratory Accreditation (A2LA). Manufacturer's Quality System audited and registered by NSF-ISR to ISO 9001:2008 (Certificate number IZ391-IS4).

Reagent

ICPC13 ICSA 2_00002

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444894
ID: ICPC13 ICSA 1_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 ICSA 1

444908
ID: ICPC13 ICSA 2_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 ICSA 2

Certificate of Analysis

Rev 0

Description: Custom 8 Element Mix, #2367, 500 mL
20,000 mg/L in 5% HNO_3
Al, Ca, Fe, Mg shipped separately in 10% HNO_3.

Catalog No:	Matrix:	Lot No:	Storage:	Exp. Date:	Date Received:
ACSM2367-01-500ml	5% HNO3	1064353	Ambient	1-Sep-2015	

Element	Symbol	CAS No	Purity %	Source Lot No	Concentration mg/L
Potassium	K	7440-09-7	99.999	7013.46.10	20000 +/- 40
Sodium	Na	7440-23-5	99.999	7020.46.7	20000 +/- 40
Phosphorus	P	7723-14-0	99.9999	7022.46.12	20000 +/- 40
Sulfur	S	7704-34-9	95.9	7025.43.5	20000 +/- 70
Aluminum	Al	7429-90-5	99.9995	7001.46.8	20000 +/- 40
Calcium	Ca	7440-70-2	99.999	7006.29.2	20000 +/- 40
Iron	Fe	7439-89-6	99.99	7012.46.14	20000 +/- 40
Magnesium	Mg	7439-95-4	99.99	7016.46.5	20000 +/- 40

Certified By: Tiffany Kwasigroch

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

This standard was manufactured by an ISO 17025 Chemical Testing Lab (Certificate number 3031.01) accredited by The American Association of Laboratory Accreditation (A2LA). Manufacturer's Quality System audited and registered by NSF-ISR to ISO 9001:2008 (Certificate number IZ391-IS4).

Reagent

ICPC13 LLC A_00003

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435178
ID: ICPC13 LLC A_00003
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC LLC 2013 solution A

435179
ID: ICPC13 LLC B_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 LLC B

Certificate of Analysis

Rev 0

Description: Custom 34 Element Mix, #2365, 250 mL
mg/L in 2% HNO_3
Ag, Sb, Ti, Mo, Sn, Si, S shipped separately.

Catalog No:	Matrix:	Lot No:	Storage:	Exp. Date:	Date Received:
ACSM2365-01-250ML	2% HNO_3 + Tr HF	1064407	Ambient	1-Sep-2015	

Element	Symbol	CAS No	Purity %	Source Lot No	Concentration mg/L	
Beryllium	Be	7440-41-7	99.999	7005.46.4	3	+/- .05
Cadmium	Cd	7440-43-9		7007.29.3	3	+/- .05
Strontium	Sr	7440-24-6		7030.46.2	3	+/- .05
Arsenic	As	7440-38-2		7002.46.5	5	+/- .2
Chromium	Cr	7440-47-3		7009.46.3	5	+/- .2
Lead	Pb	7439-92-1		7023.29.1	5	+/- .2
Selenium	Se	7782-49-2		7027.46.4	8	+/- .225
Manganese	Mn	7439-96-5		7017.46.4	8	+/- .225
Thallium	Tl	7440-28-0		7236.46.1	10	+/- .2
Zinc	Zn	7440-66-6		7037.46.5	10	+/- .2
Copper	Cu	7440-50-8		7011.46.4	13	+/- .25
Nickel	Ni	7440-02-0		7021.46.8	20	+/- .2
Boron	B	7440-42-8		7003.46.5	25	+/- .5
Barium	Ba	7440-39-3		7004.29.2	25	+/- .5
Cobalt	Co	7440-48-4		7008.46.8	25	+/- .5
Lithium	Li	7439-93-2		7015.46.5	25	+/- .5
Vanadium	V	7440-62-2		7036.46.5	25	+/- .5
Iron	Fe	7439-89-6		7012.46.13	50	+/- 1
Aluminum	Al	7429-90-5		7001.46.7	100	+/- 2
Bismuth	Bi	7440-69-9		7040.46.2	100	+/- 1
Thorium	Th	7440-29-1		7031.46.3	100	+/- .4
Phosphorus	P	7723-14-0		7022.46.11	125	+/- 2.5
Uranium	U	7440-61-1		7035.330.1	250	+/- 1
Calcium	Ca	7440-70-2		7006.46.12	500	+/- 2
Magnesium	Mg	7439-95-4		7016.46.5	500	+/- 2
Sodium	Na	7440-23-5		7020.46.6	500	+/- 2
Potassium	K	7440-09-7		7013.46.9	2500	+/- 10

Certified By: Carrie Bibbins

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

This standard was manufactured by an ISO 17025 Chemical Testing Lab (Certificate number 3031.01) accredited by The American Association of Laboratory Accreditation (A2LA). Manufacturer's quality system audited and registered by NSF-ISR to ISO 9001:2008 (Certificate number IZ391-IS4).

Silver	Ag	7440-22-4	7000.29.1	5	+/- .2
Antimony	Sb	7440-36-0	7026.46.3	5	+/- .2
Titanium	Ti	7440-32-6	7033.38.2	10	+/- .2
Molybdenum	Mo	7439-98-7	7018.29.3	20	+/- .2
Tin	Sn	7440-31-5	7029.46.4	50	+/- 1
Silicon	Si	7440-21-3	7028.46.12	200	+/- .8
Sulfur	S	7704-34-9	7025.43.5	2500	+/- 10

Certified By: Carrie Bibbins

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

This standard was manufactured by an ISO 17025 Chemical Testing Lab (Certificate number 3031.01) accredited by The American Association of Laboratory Accreditation (A2LA). Manufacturer's Quality System audited and registered by NSF-ISR to ISO 9001:2008 (Certificate number 1Z391-IS4).

Reagent

ICPC13 LLC B_00002

AccuScience
15520 Oakwood Street
Pierrefonds QC Canada H9H1Y2
877-723-2220
www.accuscience.com

435178
ID: ICPC13 LLC A_00003
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC LLC 2013 solution A

435179
ID: ICPC13 LLC B_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 LLC B

Certificate of Analysis

Rev 0

Description: Custom 34 Element Mix, #2365, 250 mL
mg/L in 2% HNO_3
Ag, Sb, Ti, Mo, Sn, Si, S shipped separately.

Catalog No:	Matrix:	Lot No:	Storage:	Exp. Date:	Date Received:
ACSM2365-01-250ML	2% HNO_3 + Tr HF	1064407	Ambient	1-Sep-2015	

Element	Symbol	CAS No	Purity %	Source Lot No	Concentration mg/L	
Beryllium	Be	7440-41-7	99.999	7005.46.4	3	+/- .05
Cadmium	Cd	7440-43-9		7007.29.3	3	+/- .05
Strontium	Sr	7440-24-6		7030.46.2	3	+/- .05
Arsenic	As	7440-38-2		7002.46.5	5	+/- .2
Chromium	Cr	7440-47-3		7009.46.3	5	+/- .2
Lead	Pb	7439-92-1		7023.29.1	5	+/- .2
Selenium	Se	7782-49-2		7027.46.4	8	+/- .225
Manganese	Mn	7439-96-5		7017.46.4	8	+/- .225
Thallium	Tl	7440-28-0		7236.46.1	10	+/- .2
Zinc	Zn	7440-66-6		7037.46.5	10	+/- .2
Copper	Cu	7440-50-8		7011.46.4	13	+/- .25
Nickel	Ni	7440-02-0		7021.46.8	20	+/- .2
Boron	B	7440-42-8		7003.46.5	25	+/- .5
Barium	Ba	7440-39-3		7004.29.2	25	+/- .5
Cobalt	Co	7440-48-4		7008.46.8	25	+/- .5
Lithium	Li	7439-93-2		7015.46.5	25	+/- .5
Vanadium	V	7440-62-2		7036.46.5	25	+/- .5
Iron	Fe	7439-89-6		7012.46.13	50	+/- 1
Aluminum	Al	7429-90-5		7001.46.7	100	+/- 2
Bismuth	Bi	7440-69-9		7040.46.2	100	+/- 1
Thorium	Th	7440-29-1		7031.46.3	100	+/- .4
Phosphorus	P	7723-14-0		7022.46.11	125	+/- 2.5
Uranium	U	7440-61-1		7035.330.1	250	+/- 1
Calcium	Ca	7440-70-2		7006.46.12	500	+/- 2
Magnesium	Mg	7439-95-4		7016.46.5	500	+/- 2
Sodium	Na	7440-23-5		7020.46.6	500	+/- 2
Potassium	K	7440-09-7		7013.46.9	2500	+/- 10

Certified By: Carrie Bibbins

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

This standard was manufactured by an ISO 17025 Chemical Testing Lab (Certificate number 3031.01) accredited by The American Association of Laboratory Accreditation (A2LA). Manufacturer's quality system audited and registered by NSF-ISR to ISO 9001:2008 (Certificate number IZ391-IS4).

Silver	Ag	7440-22-4	7000.29.1	5	+/- .2
Antimony	Sb	7440-36-0	7026.46.3	5	+/- .2
Titanium	Ti	7440-32-6	7033.38.2	10	+/- .2
Molybdenum	Mo	7439-98-7	7018.29.3	20	+/- .2
Tin	Sn	7440-31-5	7029.46.4	50	+/- 1
Silicon	Si	7440-21-3	7028.46.12	200	+/- .8
Sulfur	S	7704-34-9	7025.43.5	2500	+/- 10

Certified By: Carrie Bibbins

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

This standard was manufactured by an ISO 17025 Chemical Testing Lab (Certificate number 3031.01) accredited by The American Association of Laboratory Accreditation (A2LA). Manufacturer's Quality System audited and registered by NSF-ISR to ISO 9001:2008 (Certificate number 1Z391-IS4).

Reagent

Sr-90_00001

Eckert & Ziegler
Analytics

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318
Tel 404·352·8677
Fax 404·352·2837
www.analyticsinc.com

CERTIFICATE OF CALIBRATION
Standard Radionuclide Source

80573-334
5 mL Liquid in Flame Sealed Vial

Customer: Test America St. Louis
P.O. No.: 2324797, Item 1

This standard radionuclide source was prepared gravimetrically from a calibrated master solution. The master solution was calibrated by liquid scintillation counting. Radionuclide purity and calibration were checked by germanium gamma-ray spectrometry and liquid scintillation counting. The nuclear decay rate and assay date for this source are given below. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 1, February, 1979, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Isotope	Half-Life, Days	Activity (Bq)	Uncertainty*, % Type u_A	u_B	U	Reference Date (12:00 PM EST)
Sr-90	10515.5	3.782E+04	0.1	0.9	1.8	09/17/2009

*Uncertainty: U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

Comments:
Impurities: γ-impurities <0.1%. 5.04317 grams 0.1M HCl solution with approximately 30 microg/g each of Sr and Y carriers. NOTE: This source also contains Y-90 in secular equilibrium with Sr-90. The Y-90 activity is equal to the Sr-90 activity. Since Sr-90 and Y-90 both decay 100% by beta emission, the total beta emission rate for the source is twice the certified Sr-90 activity. The half-life for Y-90 is 64.08 hours.

Source Prepared by: _____
W. Mao, Radiochemist

QA Approved: _____ Date: 9-22-09
D. M. Montgomery, QA Manager

ACCREDITED SOURCE CALIBRATION LABORATORY
HEALTH PHYSICS SOCIETY
FOUNDED 1956

Corporate Office
24937 Avenue Tibbitts Valencia, California 91355

Laboratory
1380 Seaboard Industrial Blvd. Atlanta, Georgia 30318

Reagent

Sr-90_00017

Eckert & Ziegler
Analytics

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318
Tel 404•352•8677
Fax 404•352•2837
www.analyticsinc.com

CERTIFICATE OF CALIBRATION
Standard Radionuclide Source

92352

Sr-90 5 mL Liquid in Flame Sealed Vial

Customer: TestAmerica St. Louis
P.O. No.: 2502682, Item 1 Product Code: 8090-5FSA-37kBq

This standard radionuclide source was prepared gravimetrically from a master solution, calibrated by Eckert & Ziegler Analytics. The master solution was calibrated by liquid scintillation counting. Radionuclide calibration and purity were checked by germanium gamma-ray spectrometry, liquid scintillation counting, and/or alpha spectrometry, as applicable. The nuclear decay rate and reference date for this source are given below. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 2, July 2007, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Isotope	Half-Life, Days	Activity (Bq)	Uncertainty* , % Type u_A	u_B	U	Reference Date (12:00 PM EST)
Sr-90	1.052E+04	3.749E+04	0.1	0.9	1.8	11/29/2012

***Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

Comments:
Impurities: γ-impurities<0.1%.
5.02357 g 0.1M HCl solution with approximately 30 µg/g each Sr and Y carriers.

NOTE: This source also contains Y-90 in secular equilibrium with Sr-90. The Y-90 activity is equal to the Sr-90 activity. Since Sr-90 and Y-90 both decay 100% by beta emission, the total activity for the source is twice the certified Sr-90 activity. The half-life for Y-90 is 64.08 hours.

Source Prepared by: _____
Z. Dimitrova, Radiochemist

QA Approved: _____ Date: 26 Nov 12
J.D. McCorvey, Counting Room Manager

RAD12-0042
Sr-90
hursts
None
Prep/Opened: 11/28/2012
Exp(1): 11/29/2062
Exp(2): 11/29/2062

51511
ID Sr-90_00017
Sr-90 Ampoule

ACCREDITED SOURCE CALIBRATION LABORATORY — HEALTH PHYSICS SOCIETY — FOUNDED 1956

Corporate Office
24937 Avenue Tibbitts Valencia, California 91355

Laboratory
1380 Seaboard Industrial Blvd. Atlanta, Georgia, 30318

Reagent

Sr-90_00018

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Reagent ID: Sr-90_00018

		Expiration Date:	11/29/2062
Description:	Sr-90 Calibration STD	Laboratory:	TestAmerica St. Louis
No. of Bottles:	1	Prepared By:	Hurst, Sarah
Storage Location:	RAD Separations Reagents - 1	Solvent:	0.1M HCL
Reagent Volume:	100.000 mL	Solvent Lot:	0
Creation Date:	11/28/2012		
Container(s):	51512		
Comment:	Rad12-0043		

Reagent Analyte Information

Analyte	Source ID	Source Exp. Date	Source Conc.	Source Conc. Units	Final Conc.	Final Conc. Units
Gross Beta	Sr-90_00017	11/29/2062	14925.64000	Bq/g	44774.23338	dpm/mL
Sr-90	Sr-90_00017	11/29/2062	7462.82000	Bq/g	22387.11669	dpm/mL

Source Reagents

Reagent	Description	Type	Expiration	Vendor	Vendor Lot #	Vendor Cat Lot #	Volume Used	Volume Units
Sr-90_00017	Sr-90 Ampoule	ASTD	11/29/62	Analytics	92352		4.99970	g

St. Louis Radiological Standard Reverification Form

Standard ID Number: Sr-90_00018 (51512)
True Value = 1976.75 pCi/sample or g
Date Analyzed: 2/10/2014

Radionuclide: Sr-90 (Low mass)

	Replicates	
#1	1935	pCi/sample or g
#2	1941	pCi/sample or g
#3	1924	pCi/sample or g

Mean = 1933.333

1 sigma = 8.621678 1.96 sigma = 16.89849

True Value minus 5% = 1877.913 (True Value - 5%)
True Value plus 5% = 2075.588 (True Value + 5%)

Accuracy:
Mean value within 5% of Certified (True) Value? **Yes** **(Acceptance Criteria)**

Precision:
1.96 sigma Value Within 10% of Mean Value? **Yes** **(Acceptance Criteria)**

Standard Reverification Acceptable? **Yes**

Note: Criteria for reverification of radiological standards is taken from the DOE QSAS and LANL Statements of Work

Reviewed By/Date: Jody Watson 2/10/14

SOP Reference: STL-QA-0002, Current Revision

St. Louis Radiological Standard Reverification Form

Standard ID Number: Sr-90_00018 (51512)
True Value = 1948.75 pCi/sample or g
Date Analyzed: 2/10/2014

Radionuclide: Sr-90 (Medium mass)

Replicates		
#1	1911	pCi/sample or g
#2	1945	pCi/sample or g
#3	1893	pCi/sample or g

Mean = 1916.333

1 sigma = 26.40707 1.96 sigma = 51.75786

True Value minus 5% = 1851.313 (True Value - 5%)
True Value plus 5% = 2046.188 (True Value + 5%)

Accuracy:
Mean value within 5% of Certified (True) Value? **Yes** **(Acceptance Criteria)**

Precision:
1.96 sigma Value Within 10% of Mean Value? **Yes** **(Acceptance Criteria)**

Standard Reverification Acceptable? **Yes**

Note: Criteria for reverification of radiological standards is taken from the DOE QSAS and LANL Statements of Work

Reviewed By/Date: Jody Watson 2/10/14

SOP Reference: STL-QA-0002, Current Revision

St. Louis Radiological Standard Reverification Form

Standard ID Number: Sr-90_00018 (51512)
True Value = 1992 pCi/sample or g
Date Analyzed: 2/10/2014

Radionuclide: Sr-90 (High mass)

Replicates		
#1	1907	pCi/sample or g
#2	1930	pCi/sample or g
#3	1937	pCi/sample or g

Mean = 1924.667

1 sigma = 15.69501 1.96 sigma = 30.76222

True Value minus 5% = 1892.4 (True Value - 5%)
True Value plus 5% = 2091.6 (True Value + 5%)

Accuracy:
Mean value within 5% of Certified (True) Value? **Yes** **(Acceptance Criteria)**

Precision:
1.96 sigma Value Within 10% of Mean Value? **Yes** **(Acceptance Criteria)**

Standard Reverification Acceptable? **Yes**

Note: Criteria for reverification of radiological standards is taken from the DOE QSAS and LANL Statements of Work

Reviewed By/Date: Jody Watson 2/10/14

SOP Reference: STL-QA-0002, Current Revision

Protean Beta ICV-ACV recoveries from March 2013			
Protean Detector	**Low** pCi/sample	**Medium** pCi/sample	**High** pCi/sample
0	1962	1945	1971
1	2003	1947	1995
2	1960	1965	1998
3	1988	1942	1995
4	1977	1940	1997
5	1969	1949	2013
6	1986	1938	1986
7	1969	1964	1981
Average pCi/sample	1976.75	1948.75	1992

Protean Beta ICV-ACV recoveries from February 2014			
Protean Detector	**Low** pCi/sample	**Medium** pCi/sample	**High** pCi/sample
4	1935	1911	1907
5	1941	1945	1930
6	1924	1893	1937
Average pCi/sample	1933.33	1916.33	1924.67

Standard ID
Strontium 90
Sr-90_00018 #51512
Cert# 92352 Ref. date 11/29/12

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Analysis Report for Gross Alpha/Beta

Batch: M122640 **Operator:** 63903

Sample ID	WRKNO	Aliquot		Mass	Instr ID	CountTime		Ts	Tb	Dilution	Sigma	
	Analyte	Cs	Cb	XT	CPMs	CPMb	Eff	Activity	UncTot	UncCnt	MDA	DLC
ICVABT-51512;B1	NA	1.000E+000sample		0.0513 g	Protean4	2/10/14 22:54		5.00	1000.00	1.00	2.00	
	Gross Alpha	0	49	0.00	0.000E+000	4.900E-002	0.1157	**-1.908E-001**pCi/sample	5.869E-002	5.452E-002	3.382E+000	8.968E-001
	Gross Beta	9072	417	0.00	1.814E+003	4.170E-001	0.4224	**1.935E+003**pCi/sample	1.977E+002	4.063E+001	1.594E+000	7.165E-001
ICVABT-51512;B2	NA	1.000E+000sample		0.1114 g	Protean4	2/10/14 23:19		5.00	1000.00	1.00	2.00	
	Gross Alpha	1	49	0.00	2.000E-001	4.900E-002	0.0830	**8.194E-001**pCi/sample	2.174E+000	2.172E+000	4.713E+000	1.250E+000
	Gross Beta	8432	417	0.00	1.686E+003	4.170E-001	0.3973	**1.911E+003**pCi/sample	1.956E+002	4.164E+001	1.694E+000	7.616E-001
ICVABT-51512;B3	NA	1.000E+000sample		0.1813 g	Protean4	2/10/14 23:04		5.00	1000.00	1.00	2.00	
	Gross Alpha	1	49	0.00	2.000E-001	4.900E-002	0.0540	**1.260E+000**pCi/sample	3.343E+000	3.340E+000	7.248E+000	1.922E+000
	Gross Beta	8054	417	0.00	1.611E+003	4.170E-001	0.3804	**1.907E+003**pCi/sample	1.954E+002	4.251E+001	1.770E+000	7.956E-001

Laboratory Control Sample Information

SampID	WRKNO	Analyte	Activity	StdAdded	Recovery	LCL	UCL	ZFactor
					%			

Sample Duplicate Information

Sample ID	Dup Sample ID	Analyte	Sample Activity	Dup Activity	RPD	RER	DER	ZFactor

Matrix Spike Information

SampID	SampMSID	Analyte	Sample Activity	MS Activity	StdAdded	MSRecovery	ZFactor
						%	

Blanks Information

SampID	WRKNO	Analyte	Activity	UncTotal	ZFactor

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Analysis Report for Gross Alpha/Beta

Batch: M122640 **Operator:** 63903

Sample ID	WRKNO / Analyte	Aliquot Cs	Cb	Mass XT		Instr ID CPMs	CountTime CPMb	Eff	Activity	Ts	Tb UncTot	Dilution UncCnt	Sigma MDA	DLC
ICVABT-51512;B1	NA	1.000E+000	sample	0.0513	g	Protean5	2/10/14 23:04			5.00	1000.00	1.00	2.00	
	Gross Alpha	0	43	0.00	0.000E+000	4.300E-002	0.1145		**-1.692E-001** pCi/sample		5.510E-002	5.161E-002	3.337E+000	8.490E-001
	Gross Beta	9111	398	0.00	1.822E+003	3.980E-001	0.4228		**1.941E+003** pCi/sample		1.983E+002	4.068E+001	1.569E+000	6.992E-001
ICVABT-51512;B2	NA	1.000E+000	sample	0.1114	g	Protean5	2/10/14 22:54			5.00	1000.00	1.00	2.00	
	Gross Alpha	0	43	0.00	0.000E+000	4.300E-002	0.0823		**-2.353E-001** pCi/sample		7.661E-002	7.176E-002	4.639E+000	1.180E+000
	Gross Beta	8552	398	0.00	1.710E+003	3.980E-001	0.3960		**1.945E+003** pCi/sample		1.990E+002	4.207E+001	1.675E+000	7.465E-001
ICVABT-51512;B3	NA	1.000E+000	sample	0.1813	g	Protean5	2/10/14 23:19			5.00	1000.00	1.00	2.00	
	Gross Alpha	2	43	0.00	4.000E-001	4.300E-002	0.0532		**3.022E+000** pCi/sample		4.802E+000	4.790E+000	7.178E+000	1.826E+000
	Gross Beta	8046	398	0.00	1.609E+003	3.980E-001	0.3755		**1.930E+003** pCi/sample		1.977E+002	4.304E+001	1.766E+000	7.873E-001

Laboratory Control Sample Information

SampID	WRKNO	Analyte	Activity	StdAdded	Recovery %	LCL	UCL	ZFactor

Sample Duplicate Information

Sample ID	Dup Sample ID	Analyte	Sample Activity	Dup Activity	RPD	RER	DER	ZFactor

Matrix Spike Information

SampID	SampMSID	Analyte	Sample Activity	MS Activity	StdAdded	MSRecovery %	ZFactor

Blanks Information

SampID	WRKNO	Analyte	Activity	UncTotal	ZFactor

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Analysis Report for Gross Alpha/Beta

Batch: M122640 **Operator:** 63903

Sample ID	WRKNO	Aliquot		Mass		Instr ID	CountTime		Ts	Tb	Dilution	Sigma	
	Analyte	Cs	Cb	XT		CPMs	CPMb	Eff	Activity	UncTot	UncCnt	MDA	DLC
ICVABT-51512;B1	NA	1.000E+000	sample	0.0513	g	Protean6	2/10/14 23:19		5.00	1000.00	1.00	2.00	
	Gross Alpha	0	87	0.00	0.000E+000	8.700E-002	0.1165		-3.362E-001 pCi/sample	8.166E-002	7.210E-002	3.776E+000	1.186E+000
	Gross Beta	8992	520	0.00	1.798E+003	5.200E-001	0.4209		1.924E+003 pCi/sample	1.966E+002	4.059E+001	1.718E+000	8.029E-001
ICVABT-51512;B2	NA	1.000E+000	sample	0.1114	g	Protean6	2/10/14 23:04		5.00	1000.00	1.00	2.00	
	Gross Alpha	0	87	0.00	0.000E+000	8.700E-002	0.0842		-4.657E-001 pCi/sample	1.131E-001	9.985E-002	5.230E+000	1.642E+000
	Gross Beta	8356	520	0.00	1.671E+003	5.200E-001	0.3976		1.893E+003 pCi/sample	1.937E+002	4.142E+001	1.819E+000	8.499E-001
ICVABT-51512;B3	NA	1.000E+000	sample	0.1813	g	Protean6	2/10/14 22:54		5.00	1000.00	1.00	2.00	
	Gross Alpha	0	87	0.00	0.000E+000	8.700E-002	0.0559		-7.014E-001 pCi/sample	1.703E-001	1.504E-001	7.877E+000	2.474E+000
	Gross Beta	8127	520	0.00	1.625E+003	5.200E-001	0.3778		1.937E+003 pCi/sample	1.985E+002	4.300E+001	1.914E+000	8.945E-001

Laboratory Control Sample Information

SampID	WRKNO	Analyte	Activity	StdAdded	Recovery %	LCL	UCL	ZFactor

Sample Duplicate Information

Sample ID	Dup Sample ID	Analyte	Sample Activity	Dup Activity	RPD	RER	DER	ZFactor

Matrix Spike Information

SampID	SampMSID	Analyte	Sample Activity	MS Activity	StdAdded	MSRecovery %	ZFactor

Blanks Information

SampID	WRKNO	Analyte	Activity	UncTotal	ZFactor

RadCapture, version 4.2.06, released 2/9/2012

TestAmerica St. Louis

Standards Preparation Logbook Record

Nov-28-2012

Logbook: \\Qstlmo01\Stdslog\RAD_STD.std

RAD12-0042, Sr-90 Sr-90_00017 #51511 Analyst: hursts

Vendor: Analytics Lot No.: 92352
Solvent: None
Date Prep./Opened: 11-28-2012
Date Expires(1): 11-29-2062 (50 Years)
Date Expires(2): 11-29-2062 (50 Years)
Cert: 92352 Activity: 37490Bq Mass: 5.02357 Ref. Date: 11/29/12

Component	Initial Conc (dpm/g)	Final Conc (dpm/g)
Sr-90	447,769	447,769

RAD12-0043, Sr-90 Calibration STD Sr-90_00018 #51512 Analyst: hursts

Solvent: None Volume (ml): 100.00
Date Prep./Opened: 11-28-2012
Date Expires(1): 11-29-2062 (50 Years)
Date Expires(2): 11-29-2062 (50 Years)

Parent Std No.: RAD12-0042, Sr-90 Aliquot Amount (g): 4.9997
Parent Date Expires(1): 11-29-2062 Parent Date Expires(2): 11-29-2062

Component	Initial Conc (dpm/g)	Final Conc (dpm/mL)
Sr-90	447,769	22,387

Reviewed By: SD

St. Louis Radiological Standard Reverification Form

Standard ID Number: Rad12-0043
True Value = 2016.7 pCi/L or g
Date Analyzed: 11/30/2012

Radionuclide: Sr90

	Replicates	
#1	1964	pCi/L or g
#2	1958	pCi/L or g
#3	2015	pCi/L or g

Mean = 1979

1 sigma = 31.32092 1.96 sigma = 61.389

True Value minus 5% = 1915.865 (True Value - 5%)
True Value plus 5% = 2117.535 (True Value + 5%)

Accuracy:
Mean value within 5% of Certified (True) Value? **Yes** **(Acceptance Criteria)**

Precision:
1.96 sigma Value Within 10% of Mean Value? **Yes** **(Acceptance Criteria)**

Standard Reverification Acceptable? **Yes**

Note: Criteria for reverification of radiological standards is taken from the DOE QSAS and LANL Statements of Work

Reviewed By/Date: 11/30/12

SOP Reference: STL-QA-0002, Current Revision

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Analysis Report for Gross Alpha/Beta

Batch: M122629 **Operator:** 63903

Sample ID	WRKNO	*Aliquot*		*Mass*		*Instr ID*	*CountTime*		*Ts*	*Tb*	*Dilution*	*Sigma*	
	Analyte	Cs	Cb	XT		CPMs	CPMb	Eff	Activity	UncTot	UncCnt	MDA	DLC
verification-1b	NA	*1.000E+000sample*		*0.0536*	*g*	*Purple16*	*11/30/12 10:42*		*8.00*	*1000.00*	*1.00*	*1.00*	
	Gross Alpha	123	175	0.00	1.538E+001	1.750E-001	0.4314	**1.587E+001**pCi/sample		1.707E+000	1.448E+000	8.638E-001	3.593E-001
	Gross Beta	14954	485	0.00	1.869E+003	4.850E-001	0.4285	**1.964E+003**pCi/sample		9.953E+001	1.607E+001	1.211E+000	6.021E-001
verification-2b	NA	*1.000E+000sample*		*0.0529*	*g*	*Purple17*	*11/30/12 10:43*		*8.00*	*1000.00*	*1.00*	*1.00*	
	Gross Alpha	53	87	0.00	6.625E+000	8.700E-002	0.1306	**2.254E+001**pCi/sample		3.391E+000	3.138E+000	2.356E+000	8.365E-001
	Gross Beta	15152	362	0.00	1.894E+003	3.620E-001	0.4356	**1.958E+003**pCi/sample		9.919E+001	1.591E+001	1.077E+000	5.117E-001
verification-3b	NA	*1.000E+000sample*		*0.0528*	*g*	*Purple18*	*11/30/12 10:43*		*8.00*	*1000.00*	*1.00*	*1.00*	
	Gross Alpha	85	62	0.00	1.063E+001	6.200E-002	0.1313	**3.624E+001**pCi/sample		4.462E+000	3.954E+000	2.160E+000	7.027E-001
	Gross Beta	15378	395	0.00	1.922E+003	3.950E-001	0.4296	**2.015E+003**pCi/sample		1.020E+002	1.625E+001	1.125E+000	5.420E-001

Laboratory Control Sample Information

SampID	WRKNO	Analyte	Activity	StdAdded	Recovery	LCL	UCL	ZFactor
					%			

Sample Duplicate Information

Sample ID	Dup Sample ID	Analyte	Sample Activity	Dup Activity	RPD	RER	DER	ZFactor

Matrix Spike Information

SampID	SampMSID	Analyte	Sample Activity	MS Activity	StdAdded	MSRecovery	ZFactor
						%	

Blanks Information

SampID	WRKNO	Analyte	Activity	UncTotal	ZFactor

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Prep Report for Gross Alpha/Beta

Batch: M122629 **Prep Analyst:** 250

SampID	WRKNO	Aliquot		purple	Gross	Tare	Mass	Dilution
verification-1b	NA	1.000E+000	sample	16	8.7067 g	8.6531 g	0.0536 g	1.00
verification-2b	NA	1.000E+000	sample	17	8.6615 g	8.6086 g	0.0529 g	1.00
verification-3b	NA	1.000E+000	sample	18	8.6935 g	8.6407 g	0.0528 g	1.00

Spike Information

Sample ID	Standard ID	Analyte	Std Conc	Aliquot	Ref Date	StdAdded
	Rad12-0043	SR-90	22.387 dpm/mL	0.1mL	11-29-12	

MS — Spiked By

LM — Spike Verified By

11-28-12 — Spike Date

Standard Operating Procedures

SOPNumber	Title	Revision
☐		

Reviewed By — 11/30/12 Review Date

MS — Analyst/Relenquished By — 11/28/12 Release Date

Received By — 11/28/12 Receipt Date

MS 11-30-12 ~~112~~ 112343897/MS/11-28-12

Balance ID / Initials / Date

Reagent

Sr-90_00023

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sr-90_00023

Reagent ID: Sr-90_00023

		Expiration Date:	04/23/2015
Description:	Sr-90 Gross Beta Spike	Laboratory:	TestAmerica St. Louis
No. of Bottles:	1	Prepared By:	Bernsen, Sarah C
Storage Location:	RAD Alpha/Beta STDs	Solvent:	0.1M HCl
Reagent Volume:	500.000 mL	Solvent Lot:	n/a
Creation Date:	04/22/2014		
Container(s):	351152		
Comment:	passed verification on 4/23/14		

351152
ID: Sr-90_00023
Exp: 04/23/15 Prpd: SCB Crt: 04/22/14
Sr-90 Gross Beta Spike

Reagent Analyte Information

Analyte	Source ID	Source Exp. Date	Source Conc.	Source Conc. Units	Final Conc.	Final Conc. Units
Gross Beta	Sr-90_00018	11/29/2062	44774.23300	dpm/mL	44.77423	dpm/mL
Sr-90	Sr-90_00018	11/29/2062	22387.11700	dpm/mL	22.38712	dpm/mL

Source Reagents

Reagent	Description	Type	Expiration	Vendor	Vendor Lot #	Vendor Cat Lot #	Volume Used	Volume Units
Sr-90_00018	Sr-90 Calibration STD		11/29/62				0.50000	mL

St. Louis Radiological Standard Reverification Form

Standard ID Number: Sr-90_00023
True Value = 97.47579 DPM/L or g
Date Analyzed: 4/23/2014

Radionuclide: Gross Beta

Replicates		
#1	101.2	DPM/L or g
#2	100.4	DPM/L or g
#3	100	DPM/L or g

Mean = 100.5333

1 sigma = 0.61101 1.96 sigma = 1.19758

True Value minus 5% = 92.602 (True Value - 5%)
True Value plus 5% = 102.3496 (True Value + 5%)

Accuracy:
Mean value within 5% of Certified (True) Value? **Yes** **(Acceptance Criteria)**

Precision:
1.96 sigma Value Within 10% of Mean Value? **Yes** **(Acceptance Criteria)**

Standard Reverification Acceptable? **Yes**

Note: Criteria for reverification of radiological standards is taken from the DOE QSAS and LANL Statements of Work

Reviewed By/Date: Micha Korrinhizer 4/24/2014

SOP Reference: STL-QA-0002, Current Revision

$\frac{19.495 \text{ pCi}}{.2 \text{ L}} = 97.475 \frac{\text{pCi}}{\text{L}}$

For Gross Beta: ~~Always enter Sr90 value in to Decay Correct spreadsheet & use Sr90 value as true value~~ use corrected activity in pCi & divide by aliq.

Ex: $\frac{19.495 \text{ pCi/L}}{0.2 \text{ L}} = 97.475 \text{ pCi/L}$

on Decay Corr. spreadsheet

~~20~~ MK 4/23/14 400 mins.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Prep Report for Gross Alpha/Beta

Batch: M142830 **Prep Analyst:** 403651

SampID	WRKNO	Aliquot	Gross	Tare	Mass	Dilution
ver 1	NA Protean 13	2.000E+002 mL	8.6640 g	8.6220 g	0.0420 g	1.00
ver 2	NA 14	2.000E+002 mL	8.6411 g	8.5989 g	0.0422 g	1.00
ver 3	NA 15	2.000E+002 mL	8.6720 g	8.6307 g	0.0413 g	1.00

Spike Information

Sample ID	Standard ID	Analyte	Std Conc	Aliquot	Ref Date	StdAdded

SUB — Spiked By

NUB per SUB — Spike Verified By

4.23.14 — Spike Date

Standard Operating Procedures

SOPNumber	Title	Revision
☐		

Reviewed By

Review Date

SUB — Analyst/Relenquished By

4.23.14 — Release Date

MK — Received By

4/23/14 — Receipt Date

1121481615 | SUB | 4.23.14

Balance ID / Initials / Date

Sr-90-00023 1mL

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Analysis Report for Gross Alpha/Beta

Batch: M142830 **Operator:** 403135

Sample ID	WRKNO	Aliquot		Mass	Instr ID	CountTime		Ts	Tb	Dilution	Sigma	
	Analyte	Cs	Cb	XT	CPMs	CPMb	Eff	Activity	UncTot	UncCnt	MDA	DLC
ver 1	NA	2.000E+002mL		0.0420 g	Protean13	4/23/14 15:05		400.00	1000.00	1.00	2.00	
	Gross Alpha	28	50	3.27	7.000E-002	5.000E-002	0.1227	**3.672E-001**pCi/L	5.524E-001	5.508E-001	9.235E-001	4.775E-001
	Gross Beta	7890	450	3.27	1.973E+001	4.500E-001	0.4288	**1.012E+002**pCi/L	1.039E+001	2.344E+000	7.257E-001	4.117E-001
ver 2	NA	2.000E+002mL		0.0422 g	Protean14	4/23/14 15:06		400.00	1000.00	1.00	2.00	
	Gross Alpha	29	58	2.47	7.250E-002	5.800E-002	0.1202	**2.717E-001**pCi/L	5.806E-001	5.797E-001	1.005E+000	5.250E-001
	Gross Beta	7820	501	2.47	1.955E+001	5.010E-001	0.4274	**1.004E+002**pCi/L	1.030E+001	2.342E+000	7.649E-001	4.352E-001
ver 3	NA	2.000E+002mL		0.0413 g	Protean15	4/23/14 15:06		400.00	1000.00	1.00	2.00	
	Gross Alpha	38	68	4.40	9.500E-002	6.800E-002	0.1221	**4.982E-001**pCi/L	6.475E-001	6.450E-001	1.061E+000	5.597E-001
	Gross Beta	7736	507	4.40	1.934E+001	5.070E-001	0.4239	**1.000E+002**pCi/L	1.027E+001	2.350E+000	7.781E-001	4.425E-001

Laboratory Control Sample Information

SampID	WRKNO	Analyte	Activity	StdAdded	Recovery %	LCL	UCL	ZFactor

Sample Duplicate Information

Sample ID	Dup Sample ID	Analyte	Sample Activity	Dup Activity	RPD	RER	DER	ZFactor

Matrix Spike Information

SampID	SampMSID	Analyte	Sample Activity	MS Activity	StdAdded	MSRecovery %	ZFactor

Blanks Information

SampID	WRKNO	Analyte	Activity	UncTotal	ZFactor

RadCapture, version 4.2.06, released 2/9/2012

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sr - 90 _ 00023

Reagent ID: Sr-90_00023

Description:	Sr-90 Gross Beta Spike	Expiration Date:	09/10/2014
No. of Bottles:	1	Laboratory:	TestAmerica St. Louis
Storage Location:	RAD Alpha/Beta STDs	Prepared By:	Bernsen, Sarah C
Reagent Volume:	500.000 mL	Solvent:	0.1M HCl
Creation Date:	04/22/2014	Solvent Lot:	n/a
Container(s):	351152		
Comment:			

Reagent Analyte Information

Analyte	Source ID	Source Exp. Date	Source Conc.	Source Conc. Units	Final Conc.	Final Conc. Units
Gross Beta	Sr-90_00018	11/29/2062	44774.23300	dpm/mL	44.77423	dpm/mL
Sr-90	Sr-90_00018	11/29/2062	22387.11700	dpm/mL	22.38712	dpm/mL

Source Reagents

Reagent	Description	Type	Expiration	Vendor	Vendor Lot #	Vendor Cat Lot #	Volume Used	Volume Units
Sr-90_00018	Sr-90 Calibration STD		11/29/62				0.50000	mL

Strontium 90

Initial Activity:	44.77423	dpm				
Reference Date:	11/29/2012					
Current Date:	4/23/2014		(or date at which you wish to determine activity)			
Elapsed Time:	510.000	days				
Half Life:	10409.625	days				
Exponential Term:	0.966610707					
Corrected Activity:	43.27925012	dpm	19.49515771	pCi	0.721321	Bq
Activity (Sr/Y-90)	86.55850024	dpm	38.99031542	pCi	1.442642	Bq

Reagent

STD SI_00009

INORGANIC VENTURES™
CERTIFICATE OF ANALYSIS
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com
Tel: 800.669.6799 | 540.585.3030
Fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number (010105).

ACCREDITED Testing Laboratory Certificate 863.01
ACCREDITED Reference Material Producer Certificate 863.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGSI1
Lot Number:	G2-SI03029
Matrix:	tr. HNO3 / tr. HF
Value/Analyte(s):	1 000 µg/mL Silicon
Starting Material:	SiO2
Starting Material Lot#:	1551
Starting Material Purity:	99.9993%

468740
ID: STD SI_00009
Exp:10/01/15 Prpd:CCB Opn:10/08/14
SI 1000PPM

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1,004 ± 5 µg/mL weighted mean

Certified Density: 1.003 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **1,005 ± 3 µg/mL**
ICP Assay NIST SRM 3150 Lot Number: 071204

Assay Method #2 **1,000 ± 5 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.004820	M	Er	<	0.012050	M	Mn	<	0.009640	O	S	<	0.042951	O	V	<	0.001546
O	Al	<	0.005154	M	Eu	<	0.007230	M	Mo	<	0.004820	M	Sb	<	0.001205	O	W	<	0.006872
M	As	<	0.024100	O	Fe		0.000689	n	Na	<		O	Sc	<	0.000344	M	Y	<	0.096401
M	Au	<	0.007230	M	Ga	<	0.002410	M	Nb	<	0.001205	M	Se	<	0.019280	M	Yb	<	0.002410
n	B	<		M	Gd	<	0.002410	M	Nd	<	0.004820	s	Si	<		O	Zn	<	0.000344
M	Ba	<	0.024100	M	Ge	<	0.014460	O	Ni	<	0.003951	M	Sm	<	0.002410	M	Zr	<	0.012050
O	Be	<	0.000344	M	Hf	<	0.004820	n	Os	<		M	Sn		0.000677				
M	Bi	<	0.000964	O	Hg	<	0.018898	O	P	<	0.008590	O	Sr	<	0.000120				
O	Ca		0.003102	M	Ho	<	0.001205	M	Pb	<	0.007230	O	Ta	<	0.010308				
M	Cd	<	0.007230	M	In	<	0.024100	M	Pd	<	0.012050	M	Tb	<	0.000723				
M	Ce	<	0.012050	M	Ir	<	0.012050	M	Pr	<	0.000723	M	Te	<	0.072301				
M	Co	<	0.007230	O	K		0.002757	M	Pt	<	0.004820	M	Th	<	0.002410				
O	Cr	<	0.002577	M	La	<	0.001205	M	Rb	<	0.002410	O	Ti		0.000689				
M	Cs	<	0.000723	O	Li	<	0.000034	M	Re	<	0.002410	M	Tl	<	0.002410				
O	Cu	<	0.001718	M	Lu	<	0.000964	M	Rh	<	0.002410	M	Tm	<	0.000964				
M	Dy	<	0.014460	O	Mg		0.000207	M	Ru	<	0.004820	M	U	<	0.004820				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Keep tightly sealed when not in use. Store and use at 20 ± 4°C. Do not pipette from the container. Do not return removed aliquots to container.

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 28.09 +4 6 Si(OH)x(F)y2-

Chemical Compatibility -Soluble in HCl, HF, H3PO4 H2SO4 and HNO3 as the Si(OH)x(F)y2-. Avoid neutral to basic media. Unstable at ppm levels with metals that would pull F- away (i.e. Do not mix with Alkaline or Rare Earths, or high levels of transition elements unless they are fluorinated. Stable with most inorganic anions with a tendency to hydrolyze forming silicic acid (silicic acid is soluble up to ∼100 ppm in water) in all dilute acids except HF.

Stability - 2-100 ppb levels - stability unknown - (alone or mixed with all other metals) as the Si(OH)x(F)y2-. 1-10,000 ppm single element solutions as the Si(OH)x(F)y2- chemically stable for years in 2-5 % HNO3 / trace HF in a LDPE container.

Si Containing Samples (Preparation and Solution) -Metal (Soluble in 1:1:1 H2O / HF / HNO3); Oxide - SiO2, amorphic (dissolve by heating in 1:1:1 H2O / HF / HNO3); Oxide - quartz (fuse in Pt0 with Na2CO3); Geological Samples(fuse in Pt0with Na2CO3 followed by HCl solution of the fuseate); Organic Matrices containing silicates and non volatile silicon compounds (dry ash at 4500C in Pt0 and dissolve by gently warming with 1:1:1 H2O / HF / H2SO4 or fuse / ash with Na2CO3 and dissolve fuseate with HCl / H2O); Silicone Oils - dimethyl silicones depolymerize to form volatile monomer units when heated (Measure directly in alcoholic KOH / xylene mixture where sample is treated first with the KOH at 60-1000C to "unzip" the Si- O-Si polymeric structure or digest with conc. H2SO4 / H2O2 followed by cooling and dissolution of the dehydrated silica with HF.) Note that the direct analysis of silicone oils in an organic solvent will result in false high results due to high vapor pressure of volatile monomer units like hexamethylcyclotrisiloxane. The KOH forms the K2+Si(CH3)2O= salt which is not volatile at room temperature.

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 28 amu	4000 - 8000 ppt	N/A	N2, 12C16O
ICP-OES 212.412 nm	0.02/0.01 µg/mL	1	Hf, Os, Mo, Ta
ICP-OES 251.611 nm	0.012/0.003 µg/mL	1	Ta, U, Zn, Th
ICP-OES 288.158 nm	0.03/0.004 µg/mL	1	Ta, Ce, Cr, Cd, Th

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

January 24, 2014

11.2 Expiration Date

EXPIRES
1 FEB 2015

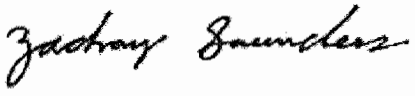
11.3 Period of Validity

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is handled and stored in accordance with instructions given in Sec 7.0 and used prior to the date given in Sec 11.2. This certification is nullified if the CRM/RM is damaged, contaminated, or otherwise modified.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

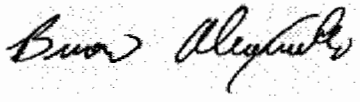
Certificate Prepared By:

Zach Saunders
Product Documentation Technician



Certificate Approved By:

Brian Alexander
PhD., Technical Process Director



Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

Th-229_00018

St. Louis Radiological Standard Reverification Form

Standard ID Number: Th-229_00018 (A)
True Value = 67.229 DPM/L or g
Date Analyzed: 9/2/2014

Radionuclide: Th-229

	Replicates	
#1	65.538	DPM/L or g
#2	64.749	DPM/L or g
#3	62.033	DPM/L or g

Mean = 64.10667

1 sigma = 1.838668 1.96 sigma = 3.603789

True Value minus 5% = 63.86755 (True Value - 5%)
True Value plus 5% = 70.59045 (True Value + 5%)

Accuracy:
Mean value within 5% of Certified (True) Value? **Yes** **(Acceptance Criteria)**

Precision:
1.96 sigma Value Within 10% of Mean Value? **Yes** **(Acceptance Criteria)**

Standard Reverification Acceptable? **Yes**

Note: Criteria for reverification of radiological standards is taken from the DOE QSAS and LANL Statements of Work

Reviewed By/Date: RTM 9/2/2014

SOP Reference: STL-QA-0002, Current Revision

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

960mins.

Aliquot Only

Batch No. : —

Balance ID : —

No.	Sample Number	Aliquot (g / mL)	Crucible ID	Dilution
248 ~~183~~ 1	Ver 1	0.1	RC = 115	
249 ~~185~~ 2	2	1	RC = 116	
250 ~~181~~ 3	3		RC = 117	
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				

Note: If a section below is not used, marked the N/A box and initial & date next to the N/A.
i.e. Mark the N/A box if a tracer is not added to the sample(s) then initial and date next to the N/A

Tracer ☐ N/A

Initials / Date

Isotope : Th-230
Std Sol'n No. : Th-230.00023
Vol (mL) : 0.3
Ref Activity (dpm/mL) :
Act Ref Date :

Samples Spiked and Traced By: SLB 8/27/14 (Initials / Date)

Verification Signature & Date: MBP/SLB 8/27/14 (Initials / Date)

LCS Standard ☐ N/A

Initials / Date

Isotope : Th-229
Std Sol'n ID. : Th-229.00018 — Bottle A
Vol (mL) : 0.1
Ref Activity (dpm/mL) : 67.229
Act Ref Date :

SOP's applied in preparing these samples. Mark box to left for all that apply:

☐ ST-RC-0003 Rev.	☐ ST-RC-0040 Rev.	☐ ST-RC-0110 Rev.
☐ ST-RC-0004 Rev.	☐ ST-RC-0041 Rev.	☐ ST-RC-0120 Rev.
☐ ST-RC-0014 Rev.	☐ ST-RC-0050 Rev.	☐ ST-RC-0232 Rev.
☐ ST-RC-0020 Rev.	☐ ST-RC-0090 Rev.	☐ ST-RC-0238 Rev.
☐ ST-RC-0021 Rev.	☐ ST-RC-0100 Rev.	☐ ST-RC-0240 Rev.
		☐ ST-RC-0241 Rev.
		☐ ST-RC-0242 Rev.
		☐ ST-RC-5016 Rev.

Isotope(s)

αβ ☐	Iso Pu ☐	Tc-99 ☐	Iso Cm ☐
Iso Am ☐	Ra ☐	Iso Th ☑	Pu-241 ☐
KPA ☐	Sr ☐	Iso U ☐	Th-229 ☐
Np ☐	TAR ☐	C-14 ☐	Cl-36 ☐

Count Time	Matrix
Long Count ☐	Soil ☐
Short Count ☐	H_2O ☐

Prepared By : SLB
Date : 8/27/14

Reviewed by:
Date:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Reagent ID: Th-229_00018

		Expiration Date:	08/20/2015
Description:	Th-229 Tracer	Laboratory:	TestAmerica St. Louis
No. of Bottles:	2	Prepared By:	Bernsen, Sarah C
Storage Location:	RAD Actinide STDs	Solvent:	0.1M HNO3
Reagent Volume:	500.000 mL	Solvent Lot:	n/a
Creation Date:	08/20/2014		
Container(s):	430571, 430625		
Comment:	500 mL split between bottle A and bottle B.		

Reagent Analyte Information

Analyte	Source ID	Source Exp. Date	Source Conc.	Source Conc. Units	Final Conc.	Final Conc. Units
Th-229	Th-229_00017	08/06/2064	2240.98600	dpm/mL	67.22958	dpm/mL

Source Reagents

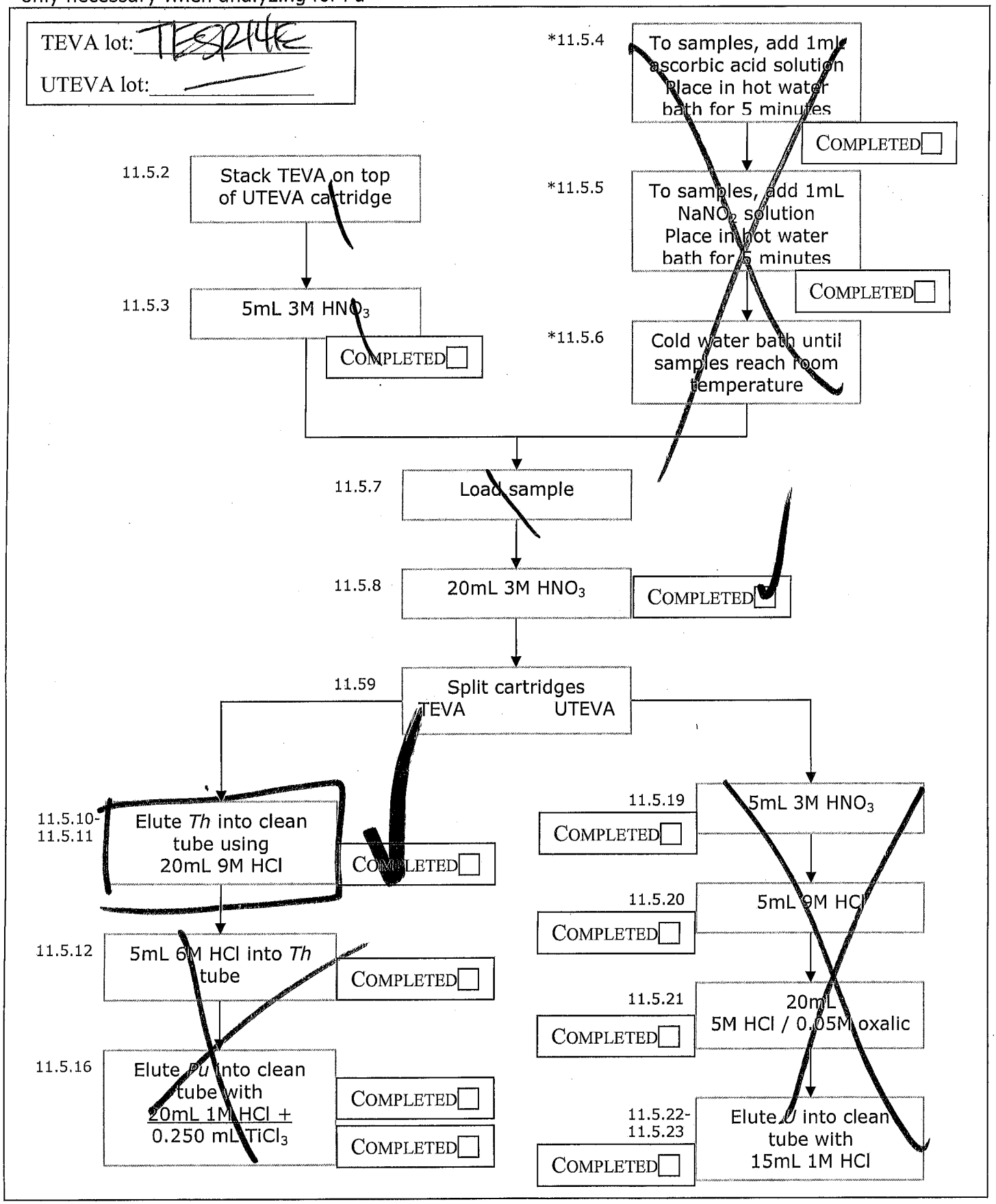
Reagent	Description	Type	Expiration	Vendor	Vendor Lot #	Vendor Cat Lot #	Volume Used	Volume Units
Th-229_00017	Th-229 Parent		08/06/64				15.00000	mL

Sequential Thorium, Plutonium and Uranium via TEVA/UTEVA ST-RC-0242

Batch: ver Th

All rinses should flow at 1 mL/minute (only 3M HNO_3 may be done at 3 mL/minute)

*only necessary when analyzing for *Pu*



Thorium-229

Initial Activity:		67.229	dpm					
Reference Date:		8/6/2014						
Current Date:		9/2/2014		(or date at which you wish to determine activity)				
Elapsed Time:		27	days					
Half Life:		2680935	days	64342440				
Exponential Term:		0.999993019						
Corrected Activity:		67.22853069	dpm	30.28312193	pCi			

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
8:35:28PM 9/2/2014

Sample

Sample Name: Verification 1
SampleType: Sample
:
Sample Collection Date:

Spectrum #1 Analysis #1
Sample Volume : 0.1000mL
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: Th-229_00018(a)
AnalysisID: 620409

Analyst: 60040

Tracer

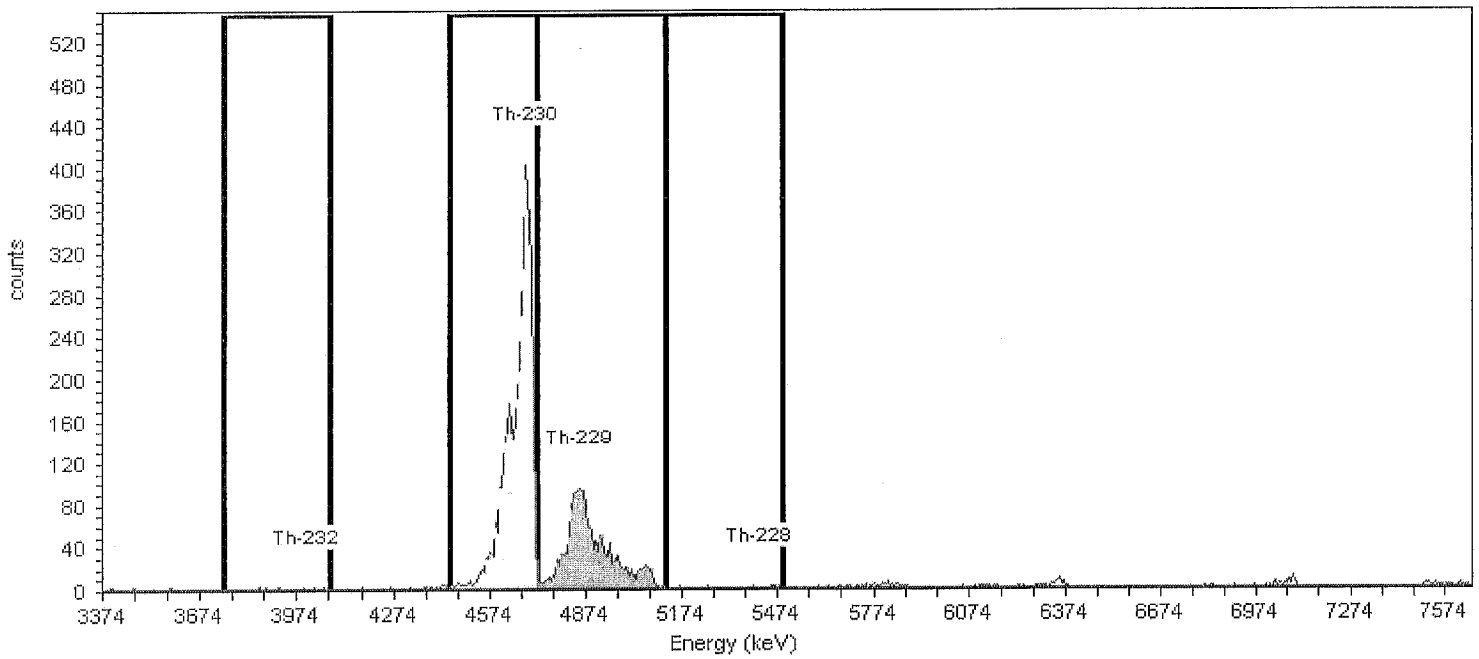
Tracer Name: Th-230_00023
Tracer Activity: 47.94 DPM/mL x (Vol.)0.30 mL = 14.38 DPM
Tracer Ref. Date: 4/11/2011 11:00:10AM

Tracer Nuclide: Th-230
Tracer Recovery: 98.42%

Acquisition

Detector: AV115
Serial Number: 49-037E4
Acquisition Start Date: 9/2/2014 2:33:49AM
Live Time: 960.00 min.
Real Time: 960.02 min.
Background Date: 8/20/2014 11:43:50PM
Background Info: Sample: ICB;AV115; Det: AV115; Spectrum #1; Aug-20-2014 23:43

Calibration Name: IC-9817;AV115-20140507
Calibration Date: 5/7/2014 10:49:29PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 26.26% +/- 0.32% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = Th-230_Tracer
Decay Correction: 9/2/2014 2:32:45AM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Thorium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
Th-232	3999.0	4,010.0	-11.0	3743.0	4072.0	11.4	100.2	7	3.0000	4.00	0.161	DPM/mL
Th-230	4688.0	4,687.5	0.5	4448.3	4724.2	27.6	99.7	3560	2.0000	3558.00	141.553	DPM/mL
Th-229	4848.0	4,845.3	2.7	4724.2	5119.5	80.8	99.8	1624	1.0000	1623.00	65.538	DPM/mL
Th-228	5420.0	5,423.3	-3.3	5119.0	5493.0	.0	99.8	6	3.0000	3.13	0.126	DPM/mL

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
8:35:42PM 9/2/2014

Sample

Sample Name: Verification 2
SampleType: Sample
:
Sample Collection Date:

Spectrum #1 Analysis #1
Sample Volume : 0.1000mL
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: Th-229_00018(a)
AnalysisID: 620383

Analyst: 60040

Tracer

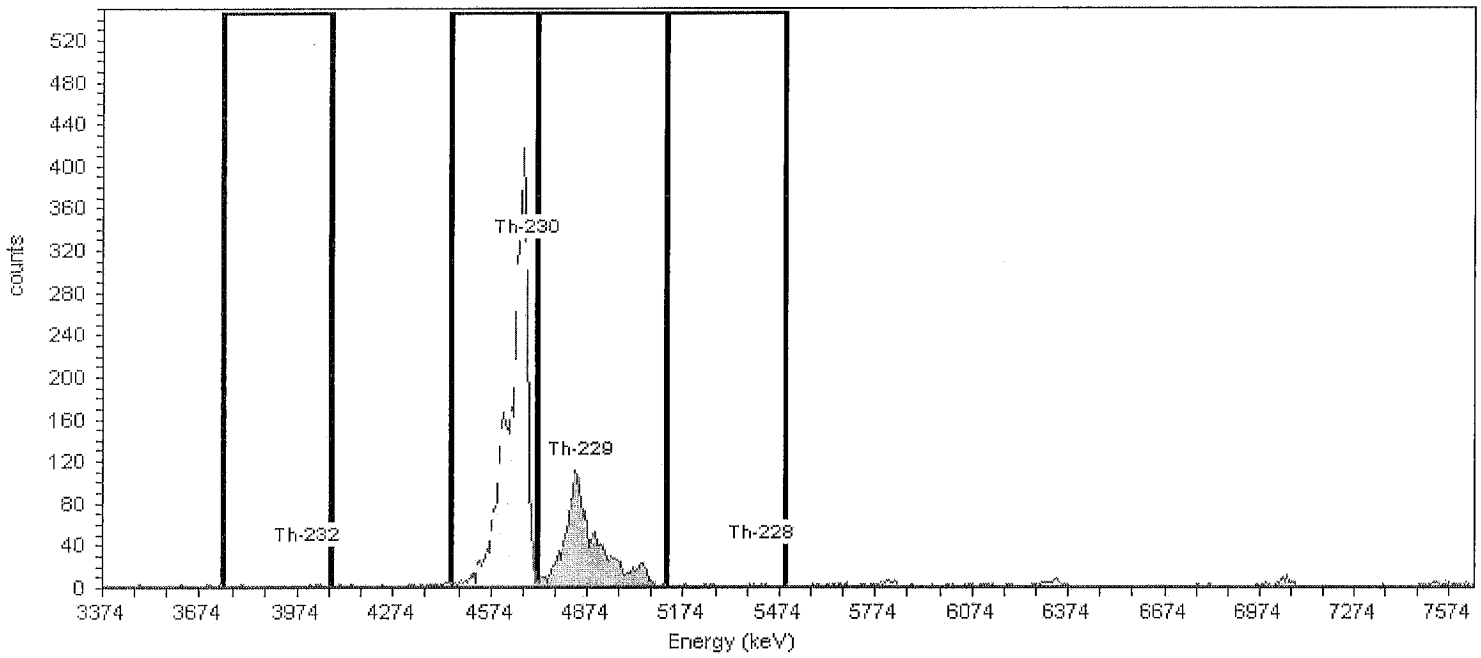
Tracer Name: Th-230_00023
Tracer Activity: 47.94 DPM/mL x (Vol.)0.30 mL = 14.38 DPM
Tracer Ref. Date: 4/11/2011 11:00:10AM

Tracer Nuclide: Th-230
Tracer Recovery: 95.43%

Acquisition

Detector: AV116
Serial Number: 49-034G1
Acquisition Start Date: 9/2/2014 2:33:51AM
Live Time: 960.00 min.
Real Time: 960.02 min.
Background Date: 8/20/2014 11:43:51PM
Background Info: Sample: ICB;AV116; Det: AV116; Spectrum #1; Aug-20-2014 23:43

Calibration Name: IC-9792;AV116-20140430
Calibration Date: 5/1/2014 1:16:57PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 27.04% +/- 0.31% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = Th-230_Tracer
Decay Correction: 9/2/2014 2:32:45AM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Thorium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
Th-232	3999.0	4,010.0	-11.0	3743.0	4072.0	25.7	100.2	6	0.0000	6.00	0.242	DPM/mL
Th-230	4688.0	4,687.5	0.5	4446.0	4717.0	25.1	99.7	3554	1.0000	3552.66	137.251	DPM/mL
Th-229	4848.0	4,845.3	2.7	4717.0	5119.0	80.5	99.8	1602	1.0000	1601.03	64.749	DPM/mL
Th-228	5420.0	5,423.3	-3.3	5119.0	5493.0	.0	99.8	9	3.0000	6.15	0.249	DPM/mL

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
8:36:23PM 9/2/2014

Sample

Sample Name: Verification 3
SampleType: Sample
:
Sample Collection Date:

Spectrum #1 Analysis #1
Sample Volume : 0.1000mL
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: Th-229_00018(a)
AnalysisID: 620410

Analyst: 60040

Tracer

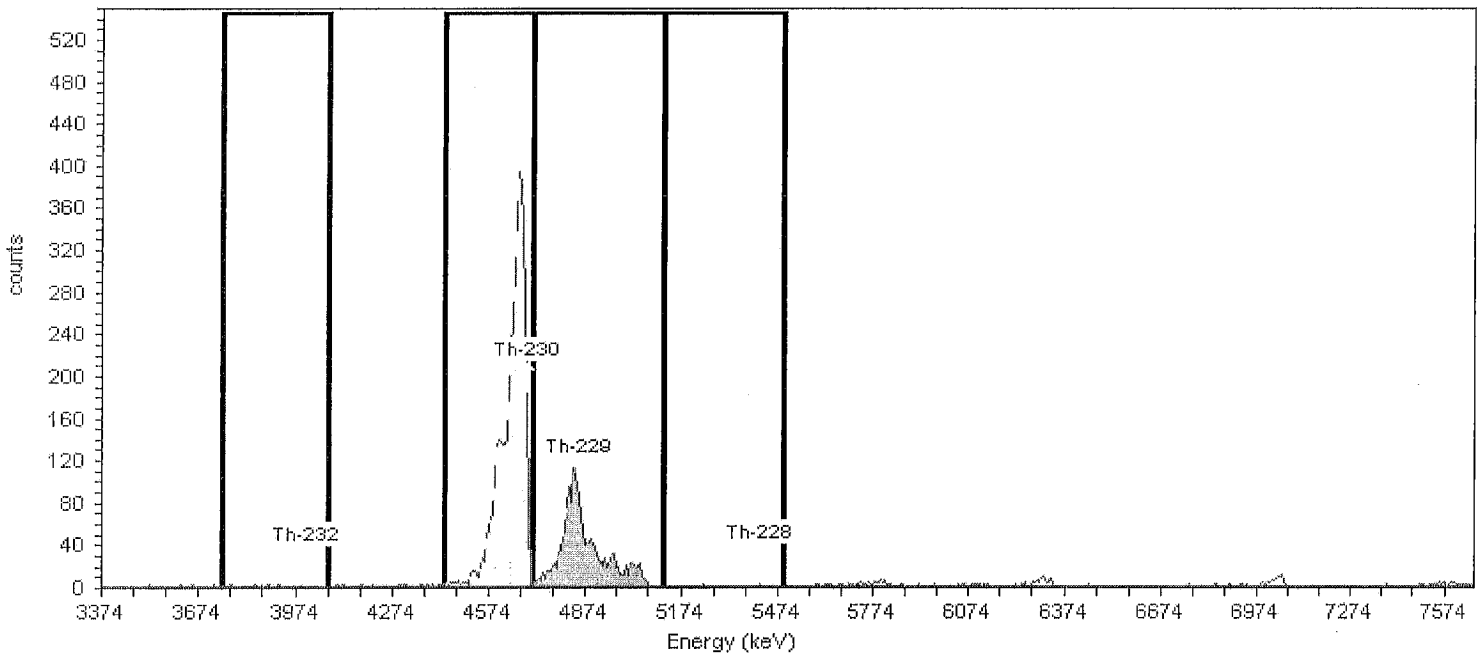
Tracer Name: Th-230_00023
Tracer Activity: 47.94 DPM/mL x (Vol.)0.30 mL = 14.38 DPM
Tracer Ref. Date: 4/11/2011 11:00:10AM

Tracer Nuclide: Th-230
Tracer Recovery: 98.20%

Acquisition

Detector: AV117
Serial Number: 49-037X4
Acquisition Start Date: 9/2/2014 2:33:53AM
Live Time: 960.00 min.
Real Time: 960.02 min.
Background Date: 8/20/2014 11:43:53PM
Background Info: Sample: ICB;AV117; Det: AV117; Spectrum #1; Aug-20-2014 23:43

Calibration Name: IC-9793;AV117-20140430
Calibration Date: 5/1/2014 1:17:04PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 25.86% +/- 0.32% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = Th-230_Tracer
Decay Correction: 9/2/2014 2:32:45AM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Thorium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
Th-232	3999.0	4,010.0	-11.0	3743.0	4072.0	120.6	100.2	5	2.0000	3.00	0.123	DPM/mL
Th-230	4688.0	4,687.5	0.5	4433.4	4709.3	21.9	99.7	3496	1.0000	3495.00	141.226	DPM/mL
Th-229	4848.0	4,845.3	2.7	4709.3	5119.5	70.8	99.8	1510	1.0000	1509.00	62.033	DPM/mL
Th-228	5420.0	5,423.3	-3.3	5119.0	5493.0	44.5	99.8	2	3.0000	-1.00	-0.041	DPM/mL

Reagent

Th-230_00001

Eckert & Ziegler
Analytics

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318
Tel 404·352·8677
Fax 404·352·2837
www.analyticsinc.com

CERTIFICATE OF CALIBRATION
Standard Radionuclide Source

84460-334
5 mL Liquid in Flame Sealed Vial

Customer: Test America/Earth City, MO
P.O. No.: 2414204, Item 1

This standard radionuclide source was prepared gravimetrically from a master solution, calibrated by Eckert & Ziegler Analytics. The master solution was calibrated by liquid scintillation counting. Radionuclide purity and calibration were checked by germanium gamma-ray spectrometry and liquid scintillation counting. The nuclear decay rate and reference date for this source are given below. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 1, February, 1979, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Isotope	Half-Life, Days	Activity (Bq)	Uncertainty*, % Type u_A	u_B	U	Reference Date (12:00 PM EST)
Th-230	2.753E+07	4.016E+03	0.1	0.9	1.8	04/11/2011

***Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

Comments:
Impurities: γ-impurities < 0.1 %, α-impurities < 0.01 %. 5.11451 grams 0.5M HNO3 solution.

Source Prepared by: _____
W. Mao, Radiochemist

QA Approved: _____ Date: 4/11/11
J. D. McCorvey, QA Manager Alternate

ACCREDITED SOURCE CALIBRATION LABORATORY
HEALTH PHYSICS SOCIETY
FOUNDED 1958

Corporate Office
24937 Avenue Tibbitts Valencia, California 91355

Laboratory
1380 Seaboard Industrial Blvd. Atlanta, Georgia, 30318

Reagent

Th-230_00003

Eckert & Ziegler
Analytics

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318
Tel 404·352·8677
Fax 404·352·2837
www.analyticsinc.com

CERTIFICATE OF CALIBRATION
Standard Radionuclide Source

84460-334
5 mL Liquid in Flame Sealed Vial

Customer: Test America/Earth City, MO
P.O. No.: 2414204, Item 1

This standard radionuclide source was prepared gravimetrically from a master solution, calibrated by Eckert & Ziegler Analytics. The master solution was calibrated by liquid scintillation counting. Radionuclide purity and calibration were checked by germanium gamma-ray spectrometry and liquid scintillation counting. The nuclear decay rate and reference date for this source are given below. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 1, February, 1979, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Isotope	Half-Life, Days	Activity (Bq)	Uncertainty*, % Type u_A	u_B	U	Reference Date (12:00 PM EST)
Th-230	2.753E+07	4.016E+03	0.1	0.9	1.8	04/11/2011

*Uncertainty: U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

Comments:
Impurities: γ-impurities < 0.1 %, α-impurities < 0.01 %. 5.11451 grams 0.5M HNO3 solution.

Source Prepared by: _____
W. Mao, Radiochemist

QA Approved: _____ Date: 4/11/11
J. D. McCorvey, QA Manager Alternate

ACCREDITED SOURCE CALIBRATION LABORATORY
HEALTH PHYSICS SOCIETY

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Reagent ID: Th-230_00003

		Expiration Date:	04/11/2061
Description:	Th-230 Parent	Laboratory:	TestAmerica St. Louis
No. of Bottles:	1	Prepared By:	Hurst, Sarah
Storage Location:	RAD Separations Reagents - 1	Solvent:	1M HNO3
Reagent Volume:	100.000 mL	Solvent Lot:	0
Creation Date:	06/24/2011		
Container(s):	6340		
Comment:			

Reagent Analyte Information

Analyte	Source ID	Source Exp. Date	Source Conc.	Source Conc. Units	Final Conc.	Final Conc. Units
Gross Alpha	Th-230_00001	04/11/2061	785.21700	Bq/g	2397.01383	dpm/mL
Th-230	Th-230_00001	04/11/2061	785.21700	Bq/g	2397.01383	dpm/mL

Source Reagents

Reagent	Description	Type	Expiration	Vendor	Vendor Lot #	Vendor Cat Lot #	Volume Used	Volume Units
Th-230_00001	Th-230 Ampoule	ASTD	04/11/61	Eckert & Ziegler	84460-334		5.08780	g

St. Louis Radiological Standard Reverification Form

Standard ID Number: Th-230_00003 (6340)
True Value = 921.43 pCi/sample or g
Date Analyzed: 2/11/2014

Radionuclide: Th-230 (High mass)

	Replicates	
#1	909.2	pCi/sample or g
#2	919.3	pCi/sample or g
#3	911.7	pCi/sample or g

Mean = 913.4

1 sigma = 5.260228 1.96 sigma = 10.31005

True Value minus 5% = 875.3585 (True Value - 5%)
True Value plus 5% = 967.5015 (True Value + 5%)

Accuracy:
Mean value within 5% of Certified (True) Value? **Yes** **(Acceptance Criteria)**

Precision:
1.96 sigma Value Within 10% of Mean Value? **Yes** **(Acceptance Criteria)**

Standard Reverification Acceptable? **Yes**

Note: Criteria for reverification of radiological standards is taken from the DOE QSAS and LANL Statements of Work

Reviewed By/Date: Jody Watson 2/18/14

SOP Reference: STL-QA-0002, Current Revision

St. Louis Radiological Standard Reverification Form

Standard ID Number: Th-230_00003 (6340)
Radionuclide: Th-230 (Medium mass
True Value = 1100.25 pCi/sample or g
Date Analyzed: 2/11/2014

	Replicates	
#1	1100	pCi/sample or g
#2	1109	pCi/sample or g
#3	1098	pCi/sample or g

Mean = 1102.333

1 sigma = 5.859465 1.96 sigma = 11.48455

True Value minus 5% = 1045.238 (True Value - 5%)
True Value plus 5% = 1155.263 (True Value + 5%)

Accuracy:
Mean value within 5% of Certified (True) Value? **Yes** **(Acceptance Criteria)**

Precision:
1.96 sigma Value Within 10% of Mean Value? **Yes** **(Acceptance Criteria)**

Standard Reverification Acceptable? **Yes**

Note: Criteria for reverification of radiological standards is taken from the DOE QSAS and LANL Statements of Work

Reviewed By/Date: Jody Watson 2/18/14

SOP Reference: STL-QA-0002, Current Revision

St. Louis Radiological Standard Reverification Form

Standard ID Number: Th-230_00003 (6340)
True Value = 1319.88 pCi/sample or g
Date Analyzed: 2/11/2014

Radionuclide: Th-230 (Low mass)

	Replicates	
#1	1320	pCi/sample or g
#2	1304	pCi/sample or g
#3	1306	pCi/sample or g

Mean = 1310

1 sigma = 8.717798 1.96 sigma = 17.08688

True Value minus 5% = 1253.886 (True Value - 5%)
True Value plus 5% = 1385.874 (True Value + 5%)

Accuracy:
Mean value within 5% of Certified (True) Value? **Yes** **(Acceptance Criteria)**

Precision:
1.96 sigma Value Within 10% of Mean Value? **Yes** **(Acceptance Criteria)**

Standard Reverification Acceptable? **Yes**

Note: Criteria for reverification of radiological standards is taken from the DOE QSAS and LANL Statements of Work

Reviewed By/Date: Jody Watson 2/18/14

SOP Reference: STL-QA-0002, Current Revision

Protean Alpha ICV-ACV recoveries from August 2013			
Protean Detector	**Low** pCi/sample	**Medium** pCi/sample	**High** pCi/sample
0	1338	1095	923.3
1	1320	1121	931.5
2	1308	1081	921.6
3	1294	1118	925.7
4	1310	1091	930.4
5	1332	1093	908.8
6	1346	1099	926.5
7	1311	1104	903.6
Average pCi/sample	1319.875	1100.25	921.425

Protean Alpha ICV-ACV recoveries from February 2014			
Protean Detector	**Low** pCi/sample	**Medium** pCi/sample	**High** pCi/sample
0	1320	1100	909.2
1	1304	1109	919.3
2	1306	1098	911.7
Average pCi/sample	1310.00	1102.33	913.40

Standard ID
Thorium-230
Th-230_00003 #6340
Cert # 84460-334 Ref. date 4/11/11

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Analysis Report for Gross Alpha/Beta

Batch: M132736 **Operator:** 63903

Sample ID	WRKNO / Analyte	Aliquot Cs	Cb	Mass XT	Instr ID CPMs	CPMb	CountTime Eff	Ts Activity	Tb UncTot	Dilution UncCnt	Sigma MDA	DLC
ICVABT-6340;A1	NA	1.000E+000sample		0.0220 g	Protean0		2/10/14 22:54	30.00	1000.00	1.00	2.00	
	Gross Alpha	12315	39	0.00	4.105E+002	3.900E-002	0.1401	**1.320E+003**pCi/sample	1.524E+002	2.379E+001	6.777E-001	2.698E-001
	Gross Beta	4342	529	0.00	1.447E+002	5.290E-001	0.4365	**1.488E+002**pCi/sample	1.555E+001	4.533E+000	5.507E-001	3.188E-001
ICVABT-6340;A2	NA	1.000E+000sample		0.0542 g	Protean0		2/11/14 0:01	30.00	1000.00	1.00	2.00	
	Gross Alpha	8755	39	0.00	2.918E+002	3.900E-002	0.1195	**1.100E+003**pCi/sample	1.276E+002	2.352E+001	7.944E-001	3.162E-001
	Gross Beta	3314	529	0.00	1.105E+002	5.290E-001	0.4211	**1.176E+002**pCi/sample	1.246E+001	4.106E+000	5.709E-001	3.304E-001
ICVABT-6340;A3	NA	1.000E+000sample		0.0718 g	Protean0		2/10/14 23:30	30.00	1000.00	1.00	2.00	
	Gross Alpha	6609	39	0.00	2.203E+002	3.900E-002	0.1091	**9.092E+002**pCi/sample	1.060E+002	2.237E+001	8.698E-001	3.462E-001
	Gross Beta	2866	529	0.00	9.553E+001	5.290E-001	0.4135	**1.035E+002**pCi/sample	1.105E+001	3.888E+000	5.813E-001	3.365E-001

Laboratory Control Sample Information

SampID	WRKNO	Analyte	Activity	StdAdded	Recovery %	LCL	UCL	ZFactor

Sample Duplicate Information

Sample ID	Dup Sample ID	Analyte	Sample Activity	Dup Activity	RPD	RER	DER	ZFactor

Matrix Spike Information

SampID	SampMSID	Analyte	Sample Activity	MS Activity	StdAdded	MSRecovery %	ZFactor

Blanks Information

SampID	WRKNO	Analyte	Activity	UncTotal	ZFactor

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Analysis Report for Gross Alpha/Beta

Batch: M132736 **Operator:** 63903

Sample ID	WRKNO	Aliquot		Mass	Instr ID	CountTime		Ts	Tb	Dilution	Sigma	
	Analyte	Cs	Cb	XT	CPMs	CPMb	Eff	Activity	UncTot	UncCnt	MDA	DLC
ICVABT-6340;A1	NA	1.000E+000sample		0.0220 g	Protean1	2/10/14 23:30		30.00	1000.00	1.00	2.00	
	Gross Alpha	12345	58	0.00	4.115E+002	5.800E-002	0.1421	**1.304E+003**pCi/sample	1.505E+002	2.347E+001	7.515E-001	3.242E-001
	Gross Beta	4337	490	0.00	1.446E+002	4.900E-001	0.4378	**1.482E+002**pCi/sample	1.550E+001	4.518E+000	5.320E-001	3.059E-001
ICVABT-6340;A2	NA	1.000E+000sample		0.0542 g	Protean1	2/10/14 22:54		30.00	1000.00	1.00	2.00	
	Gross Alpha	8943	58	0.00	2.981E+002	5.800E-002	0.1211	**1.109E+003**pCi/sample	1.286E+002	2.345E+001	8.822E-001	3.805E-001
	Gross Beta	3334	490	0.00	1.111E+002	4.900E-001	0.4221	**1.181E+002**pCi/sample	1.250E+001	4.108E+000	5.518E-001	3.173E-001
ICVABT-6340;A3	NA	1.000E+000sample		0.0718 g	Protean1	2/11/14 0:01		30.00	1000.00	1.00	2.00	
	Gross Alpha	6776	58	0.00	2.259E+002	5.800E-002	0.1107	**9.193E+002**pCi/sample	1.071E+002	2.234E+001	9.654E-001	4.164E-001
	Gross Beta	2787	490	0.00	9.290E+001	4.900E-001	0.4146	**1.004E+002**pCi/sample	1.074E+001	3.824E+000	5.617E-001	3.230E-001

Laboratory Control Sample Information

SampID	WRKNO	Analyte	Activity	StdAdded	Recovery %	LCL	UCL	ZFactor

Sample Duplicate Information

Sample ID	Dup Sample ID	Analyte	Sample Activity	Dup Activity	RPD	RER	DER	ZFactor

Matrix Spike Information

SampID	SampMSID	Analyte	Sample Activity	MS Activity	StdAdded	MSRecovery %	ZFactor

Blanks Information

SampID	WRKNO	Analyte	Activity	UncTotal	ZFactor

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Analysis Report for Gross Alpha/Beta

Batch: M132736 **Operator:** 63903

Sample ID	WRKNO / Analyte	Aliquot Cs	Aliquot Cb	Mass XT	Instr ID	CountTime CPMs	CPMb	Eff	Ts Activity	Tb UncTot	Dilution UncCnt	Sigma MDA	DLC
ICVABT-6340;A1	NA	1.000E+000sample		0.0220 g	Protean2		2/11/14 0:01		30.00	1000.00	1.00	2.00	
	Gross Alpha	12227	43	0.00	4.076E+002	4.300E-002	0.1406	**1.306E+003**pCi/sample		1.507E+002	2.362E+001	6.946E-001	2.822E-001
	Gross Beta	4402	583	0.00	1.467E+002	5.830E-001	0.4392	**1.499E+002**pCi/sample		1.566E+001	4.536E+000	5.700E-001	3.326E-001
ICVABT-6340;A2	NA	1.000E+000sample		0.0542 g	Protean2		2/10/14 23:30		30.00	1000.00	1.00	2.00	
	Gross Alpha	8755	43	0.00	2.918E+002	4.300E-002	0.1197	**1.098E+003**pCi/sample		1.273E+002	2.347E+001	8.155E-001	3.314E-001
	Gross Beta	3355	583	0.00	1.118E+002	5.830E-001	0.4218	**1.188E+002**pCi/sample		1.258E+001	4.125E+000	5.936E-001	3.464E-001
ICVABT-6340;A3	NA	1.000E+000sample		0.0718 g	Protean2		2/10/14 22:54		30.00	1000.00	1.00	2.00	
	Gross Alpha	6627	43	0.00	2.209E+002	4.300E-002	0.1091	**9.117E+002**pCi/sample		1.063E+002	2.240E+001	8.947E-001	3.636E-001
	Gross Beta	2857	583	0.00	9.523E+001	5.830E-001	0.4134	**1.031E+002**pCi/sample		1.102E+001	3.883E+000	6.057E-001	3.534E-001

Laboratory Control Sample Information

SampID	WRKNO	Analyte	Activity	StdAdded	Recovery %	LCL	UCL	ZFactor

Sample Duplicate Information

Sample ID	Dup Sample ID	Analyte	Sample Activity	Dup Activity	RPD	RER	DER	ZFactor

Matrix Spike Information

SampID	SampMSID	Analyte	Sample Activity	MS Activity	StdAdded	MSRecovery %	ZFactor

Blanks Information

SampID	WRKNO	Analyte	Activity	UncTotal	ZFactor

Reagent

Th-230_00015

Eckert & Ziegler
Analytics

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318
Tel 404•352•8677
Fax 404•352•2837
www.analyticsinc.com

CERTIFICATE OF CALIBRATION
Standard Radionuclide Source

92523
Th-230 5 mL Liquid in Flame Sealed Vial

Customer: TestAmerica St. Louis
P.O. No.: 2502650, Item 2 Product Code: 8230-5FSA-4kBq

This standard radionuclide source was prepared gravimetrically from a master solution, calibrated by Eckert & Ziegler Analytics. The master solution was calibrated by liquid scintillation counting. Radionuclide calibration and purity were checked by germanium gamma-ray spectrometry, liquid scintillation counting, and/or alpha spectrometry, as applicable. The nuclear decay rate and reference date for this source are given below. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 2, July 2007, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

			Uncertainty*, % Type			
Isotope	Half-Life, Days	Activity (Bq)	u_A	u_B	U	Reference Date (12:00 PM EST)
Th-230	2.753E+07	3.979E+03	0.1	0.9	1.8	11/29/2012

***Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

Comments:
Impurities: α-impurities 1.5915 Bq; γ-impurities (other than decay products)<0.1%.
5.07636 g 0.5M HNO3 solution. Carrier free.

Source Prepared by: M. I. Taskaeva, Radiochemist

QA Approved: J.D. McCorvey, Counting Room Manager Date: 27 Nov 12

51464
ID Th-230_00015
Th-230 Ampoule

RAD12-0040
Th-230 Ampoule
hursts
None
Prep/Opened: 11/28/2012
Exp(1): 11/28/2062
Exp(2): 11/28/2062

Single Isotope Certificate Rev 3, 23 August 2012

Reagent

Th-230_00016

Eckert & Ziegler
Analytics

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318
Tel 404•352•8677
Fax 404•352•2837
www.analyticsinc.com

CERTIFICATE OF CALIBRATION
Standard Radionuclide Source

92523

Th-230 5 mL Liquid in Flame Sealed Vial

Customer: TestAmerica St. Louis
P.O. No.: 2502650, Item 2 Product Code: 8230-5FSA-4kBq

This standard radionuclide source was prepared gravimetrically from a master solution, calibrated by Eckert & Ziegler Analytics. The master solution was calibrated by liquid scintillation counting. Radionuclide calibration and purity were checked by germanium gamma-ray spectrometry, liquid scintillation counting, and/or alpha spectrometry, as applicable. The nuclear decay rate and reference date for this source are given below. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 2, July 2007, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Isotope	Half-Life, Days	Activity (Bq)	Uncertainty*, % Type u_A	u_B	U	Reference Date (12:00 PM EST)
Th-230	2.753E+07	3.979E+03	0.1	0.9	1.8	11/29/2012

*Uncertainty: U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

Comments:
Impurities: α-impurities 1.5915 Bq; γ-impurities (other than decay products)<0.1%.
5.07636 g 0.5M HNO3 solution. Carrier free.

Source Prepared by: M. I. Taskaeva, Radiochemist

QA Approved: J.D. McCorvey, Counting Room Manager Date: 27 Nov 12

51464
ID Th-230_00015
Th-230 Ampoule

RAD12-0040
Th-230 Ampoule
hursts
None
Prep/Opened: 11/28/2012
Exp(1): 11/28/2062
Exp(2): 11/28/2062

ACCREDITED SOURCE CALIBRATION LABORATORY — HEALTH PHYSICS SOCIETY — FOUNDED 1958

Corporate Office
24937 Avenue Tibbitts Valencia, California 91355

Laboratory
1380 Seaboard Industrial Blvd. Atlanta, Georgia, 30318

TestAmerica St. Louis

Standards Preparation Logbook Record

Nov-28-2012

Logbook: \\Qstlmo01\Stdslog\RAD_STD.std

RAD12-0040, Th-230 Ampoule Th-230_00015 # 51464 Analyst: hursts

Vendor: Analytics Lot No.: 92523
Solvent: None
Date Prep./Opened: 11-28-2012 Date Consumed: 11-28-2012
Date Expires(1): 11-28-2062 (50 Years)
Date Expires(2): 11-28-2062 (50 Years)
Cert: 92523 Activity: 3979Bq Reference Date: 11/29/12 Mass: 5.07636

Component	Initial Conc (dpm/g)	Final Conc (dpm/g)
Th-230	47,030	47,030

RAD12-0041, Th-230 Calibration Standard Th-230_00016 # 51465 Analyst: hursts

Solvent: 0.5M HNO3 Volume (ml): 100.00
Date Prep./Opened: 11-28-2012
Date Expires(1): 11-29-2062 (50 Years)
Date Expires(2): 11-29-2062 (50 Years)

Parent Std No.: RAD12-0040, Th-230 Ampoule Aliquot Amount (g): 5.0489
Parent Date Expires(1): 11-28-2062 Parent Date Expires(2): 11-28-2062

Component	Initial Conc (dpm/g)	Final Conc (dpm/mL)
Th-230	47,030	2,374.5

Reviewed By: SH

Page 1 of 1

St. Louis Radiological Standard Reverification Form

Standard ID Number: Rad12-0041
True Value = 1069.59 pCi/mL
Date Analyzed: 11/30/2012

Radionuclide: Th-230 Gross Alpha

	Replicates	
#1	1071	pCi/mL
#2	1027	pCi/mL
#3	1085	pCi/mL

Mean = 1061

1 sigma = 30.26549 1.96 sigma = 59.32036

True Value minus 5% = 1016.111 (True Value - 5%)
True Value plus 5% = 1123.07 (True Value + 5%)

Accuracy:
Mean value within 5% of Certified (True) Value? Yes **(Acceptance Criteria)**

Precision:
1.96 sigma Value Within 10% of Mean Value? Yes **(Acceptance Criteria)**

Standard Reverification Acceptable? Yes

Note: Criteria for reverification of radiological standards is taken from the DOE QSAS and LANL Statements of Work

Reviewed By/Date: JL 11/30/12

SOP Reference: STL-QA-0002, Current Revision

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Analysis Report for Gross Alpha/Beta

Batch: M122628 **Operator:** 63903

Sample ID	WRKNO	*Aliquot*		*Mass*	*Instr ID*	*CountTime*		*Ts*	*Tb*	*Dilution*	*Sigma*	
	Analyte	Cs	Cb	XT	CPMs	CPMb	Eff	Activity	UncTot	UncCnt	MDA	DLC
verification 1a	NA	*1.000E+000mL*		*0.0546 g*	*Purple16*	*11/30/12 13:03*		*8.00*	*1000.00*	*1.00*	*1.00*	
	Gross Alpha	2528	175	0.00	3.160E+002	1.750E-001	0.1328	**1.071E+006**pCi/L	6.469E+004	2.132E+004	2.807E+003	1.167E+003
	Gross Beta	792	485	0.00	9.900E+001	4.850E-001	0.4280	**1.037E+005**pCi/L	6.370E+003	3.702E+003	1.212E+003	6.028E+002
verification 2a	NA	*1.000E+000mL*		*0.0536 g*	*Purple17*	*11/30/12 13:03*		*8.00*	*1000.00*	*1.00*	*1.00*	
	Gross Alpha	2364	87	0.00	2.955E+002	8.700E-002	0.1295	**1.027E+006**pCi/L	6.225E+004	2.113E+004	2.376E+003	8.436E+002
	Gross Beta	764	362	0.00	9.550E+001	3.620E-001	0.4353	**9.846E+004**pCi/L	6.084E+003	3.576E+003	1.078E+003	5.121E+002
verification 3a	NA	*1.000E+000mL*		*0.0531 g*	*Purple18*	*11/30/12 13:04*		*8.00*	*1000.00*	*1.00*	*1.00*	
	Gross Alpha	2521	62	0.00	3.151E+002	6.200E-002	0.1308	**1.085E+006**pCi/L	6.551E+004	2.161E+004	2.168E+003	7.052E+002
	Gross Beta	788	395	0.00	9.850E+001	3.950E-001	0.4295	**1.029E+005**pCi/L	6.325E+003	3.680E+003	1.125E+003	5.421E+002

Laboratory Control Sample Information

SampID	WRKNO	Analyte	Activity	StdAdded	Recovery %	LCL	UCL	ZFactor

Sample Duplicate Information

Sample ID	Dup Sample ID	Analyte	Sample Activity	Dup Activity	RPD	RER	DER	ZFactor

Matrix Spike Information

SampID	SampMSID	Analyte	Sample Activity	MS Activity	StdAdded	MSRecovery %	ZFactor

Blanks Information

SampID	WRKNO	Analyte	Activity	UncTotal	ZFactor

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Prep Report for Gross Alpha/Beta

Batch: M122628 **Prep Analyst:** 250

SampID	WRKNO	Aliquot	Gross	Tare	Mass	Dilution
verification 1a	NA	6.500E-001 mL	8.6982 g	8.6436 g	0.0546 g	1.00
		Orange 5	protean 14		16	
verification 2a	NA	6.500E-001 mL	8.6698 g	8.6162 g	0.0536 g	1.00
		7	15		17	
verification 3a	NA	6.500E-001 mL	8.6466 g	8.5935 g	0.0531 g	1.00
		8			18	

Spike Information

Sample ID	Standard ID	Analyte	Std Conc	Aliquot	Ref Date	StdAdded
	Rad12-0041	Th-230	2374.5 dpm/mL	1.00 mL	11-29-12	

MS — Spiked By

LM per MS — Spike Verified By

11-28-12 — Spike Date

Standard Operating Procedures

SOPNumber	Title	Revision
☐		

Reviewed By — 11/30/12 Review Date

MS — Analyst/Relenquished By — 11-28-12 Release Date — Received By — 11/28/12 Receipt Date

1123433897/MS/11-28-12

Balance ID / Initials / Date

Reagent

Th-230_00019

TestAmerica St. Louis

Standards Preparation Logbook Record

Aug-13-2013

Logbook: \\Qstlmo01\Stdslog\RAD_STD.std

RAD13-0028, Th-230 Ampoule — Analyst: marrss

Vendor: Analytics Lot No.: 92776
Solvent: None
Date Prep./Opened: 08-13-2013
Date Expires(1): 08-08-2063 (50 Years)
Date Expires(2): 08-08-2063 (50 Years)
Activity: 3.728 E+03 Bq, Ref date: 08/08/2013, Solution mass: 5.09261g, Source ID: 92776

Component	Initial Conc (dpm/g)	Final Conc (dpm/g)
Th-230	43,922	43,922

Th-230-00019 #181198

RAD13-0029, Th-230 Parent — Analyst: marrss

Solvent: ~~None~~ 1M HNO3 SUB 8/13/13 Volume (ml): 100.00
Date Prep./Opened: 08-13-2013
Date Expires(1): 08-08-2063 (50 Years)
Date Expires(2): 08-08-2063 (50 Years)

Parent Std No.: RAD13-0028, Th-230 Ampoule Aliquot Amount (g): 5.0731
Parent Date Expires(1): 08-08-2063 Parent Date Expires(2): 08-08-2063

Component	Initial Conc (dpm/g)	Final Conc (dpm/mL)
Th-230	43,922	2,228.2

Reviewed By: SUB

Page 1 of 1

Th-230 Parent

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Reagent ID: Th-230_00019

		Expiration Date:	08/08/2063
Description:	Th-230 Parent	Laboratory:	TestAmerica St. Louis
No. of Bottles:	1	Prepared By:	Bernsen, Sarah C
Storage Location:	RAD Actinide STDs	Solvent:	1M HNO3
Reagent Volume:	100.000 mL	Solvent Lot:	n/a
Creation Date:	08/13/2013		
Container(s):	181198		
Comment:			

Reagent Analyte Information

Analyte	Source ID	Source Expiration Date	Source Conc.	Source Conc. Units	Final Conc.	Final Conc. Units
Th-230	Th-230_00018	08/08/2063	43922.46	dpm/g	2228.23072	dpm/mL

Source Reagents

Reagent	Description	Type	Expiration	Vendor	Vendor Lot #	Vendor Cat Lot #	Volume Used	Volume Units
Th-230_00018	Th-230 Ampoule	ASTD	08/08/63	Eckert & Ziegler	92776		5.07310	mL

Eckert & Ziegler
Analytics

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318
Tel 404•352•8677
Fax 404•352•2837
www.analyticsinc.com

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

92776

Th-230 5 mL Liquid in Flame Sealed Vial

Customer: TestAmerica
P.O. No.: 2532686, Item 1 Product Code: 8230-5FSA-4kBq

This standard radionuclide source was prepared gravimetrically from a master solution, calibrated by Eckert & Ziegler Analytics. The master solution was calibrated by liquid scintillation counting. Radionuclide calibration and purity were checked by germanium gamma-ray spectrometry, liquid scintillation counting, and/or alpha spectrometry, as applicable. The nuclear decay rate and reference date for this source are given below. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 2, July 2007, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Isotope	Half-Life, Days	Activity (Bq)	Uncertainty* , % Type u_A	u_B	U	Reference Date (12:00 PM EST)
Th-230	2.753E+07	3.728E+03	0.1	0.9	1.8	08/08/2013

***Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

Comments:
Impurities: α-impurities 0.04%; γ-impurities (other than decay products)<0.1%.
5.09261 g 0.5M HNO3 solution. Carrier free.

Source Prepared by: R. Ormsby
R. Ormsby, Radiochemist

QA Approved:
J.D. McCorvey, Counting Room Manager

Date: 6AUG13

RAD13-0029
Th-230 Parent
marrss
None
Prep/Opened: 8/13/2013
Exp(1): 8/8/2063
Exp(2): 8/8/2063

181198
ID: Th-230_00019
Exp: 08/08/63 Prpd: SH Cal. 08/13/13
Th-230 Parent

ACCREDITED SOURCE CALIBRATION LABORATORY HEALTH PHYSICS SOCIETY FOUNDED 1956

Single Isotope Certificate Rev 3, 23 August 2012

Corporate Office
24937 Avenue Tibbitts Valencia, California 91355

Laboratory
1380 Seaboard Industrial Blvd. Atlanta, Georgia, 30318

Reagent

Th-230_00024

455587
ID: Th-230_00024
Exp: 09/25/15 Prpd: SCB Crt: 09/22/14
Th-230 Gross Alpha Spike

St. Louis Radiological Standard Reverification Form

Standard ID Number: Th-230_00024
True Value = 22.282 DPM/L or g
Date Analyzed: 9/25/2014

Radionuclide: Th-230

	Replicates	
#1	22.16	DPM/L or g
#2	22.8	DPM/L or g
#3	24.12	DPM/L or g

Mean = 23.02667

1 sigma = 0.999467 1.96 sigma = 1.958954

True Value minus 5% = 21.1679 (True Value - 5%)
True Value plus 5% = 23.3961 (True Value + 5%)

Accuracy:
Mean value within 5% of Certified (True) Value? Yes **(Acceptance Criteria)**

Precision:
1.96 sigma Value Within 10% of Mean Value? Yes **(Acceptance Criteria)**

Standard Reverification Acceptable? Yes

Note: Criteria for reverification of radiological standards is taken from the DOE QSAS and LANL Statements of Work

Reviewed By/Date: RTM 9/30/2014

SOP Reference: STL-QA-0002, Current Revision

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:28:07AM 9/30/2014

Sample

Sample Name: Verification1 Type: Sample
Spectrum #2 Analysis #1
:
Sample Collection Date:
Comment:

Sample Volume : 0.30 Sample Units: mL
First Stage Dilution: N/A
Aliquot: N/A Aliquot Fraction: N/A
Dilution 2: N/A
Lab Preparation:

Batch

Batch Name: Th-230_00024
:
Description:

Client Name: Undefined
Client Contact:
Analyst: 60040

Tracer

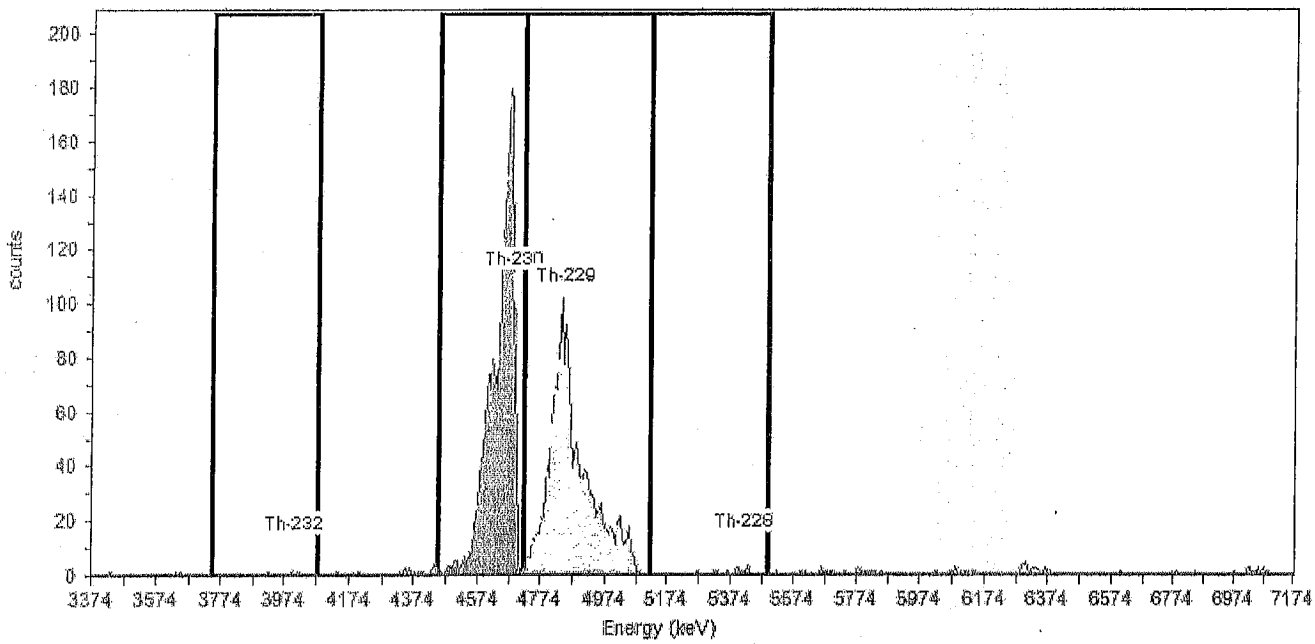
Tracer Name: Th-229_00018
Tracer Activity: 67.23 DPM / mL x (Vol.) 0.10 mL = 6.72 DPM
Tracer Ref. Date: 8/6/2014 4:36:53PM

Tracer Nuclide: Th-229
Tracer Recovery: 88.98%

Acquisition

Detector: AV247 SN: 51-027F3
Acquisition Start Date: 9/25/2014 8:58:54PM
Live Time: 960.00 min.
Real Time: 960.00 min.
Background Date: 9/14/2014 7:35:50PM
Bkgd Info: Sample: ICB;AV247; Det: AV247; Spectrum #1; 9/14/2014 7:35:50 PM

Energy Calibration: IC-8875;AV247-20140701
Efficiency Calibration:IC-8875;AV247-20140701
Calibration Date: 7/1/2014 5:29:01PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 26.06% +/- 0.36% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = Th2007_ROI
Decay Correction:9/23/2014 7:22:45PM
MDA Constants: Kα = 1.64 , Kβ = 1.64

Nuclide Library: Thorium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
Th-232	3999.0	4,010.0	-11.0	3743.0	4072.0	117.3	100.2	3	3.0000	0.00	0.000E+000	DPM/mL
Th-230	4688.0	4,687.5	0.5	4446.0	4717.0	23.3	99.7	1606	0.0000	1605.92	2.412E+001	DPM/mL
Th-229	4848.0	4,845.3	2.7	4717.0	5119.0	81.6	99.6	1492	1.0000	1491.00	1.994E+001	DPM/mL
Th-228	5420.0	5,423.3	-3.3	5119.0	5493.0	52.8	99.8	12	6.9134	5.09	7.652E-002	DPM/mL

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:28:13AM 9/30/2014

Sample

Sample Name: Verification2 Type: Sample
Spectrum #2 Analysis #1
:
Sample Collection Date:
Comment:

Sample Volume : 0.30 Sample Units: mL
First Stage Dilution: N/A
Aliquot: N/A Aliquot Fraction: N/A
Dilution 2: N/A
Lab Preparation:

Batch

Batch Name: Th-230_00024
:
Description:

Client Name: Undefined
Client Contact:
Analyst: 60040

Tracer

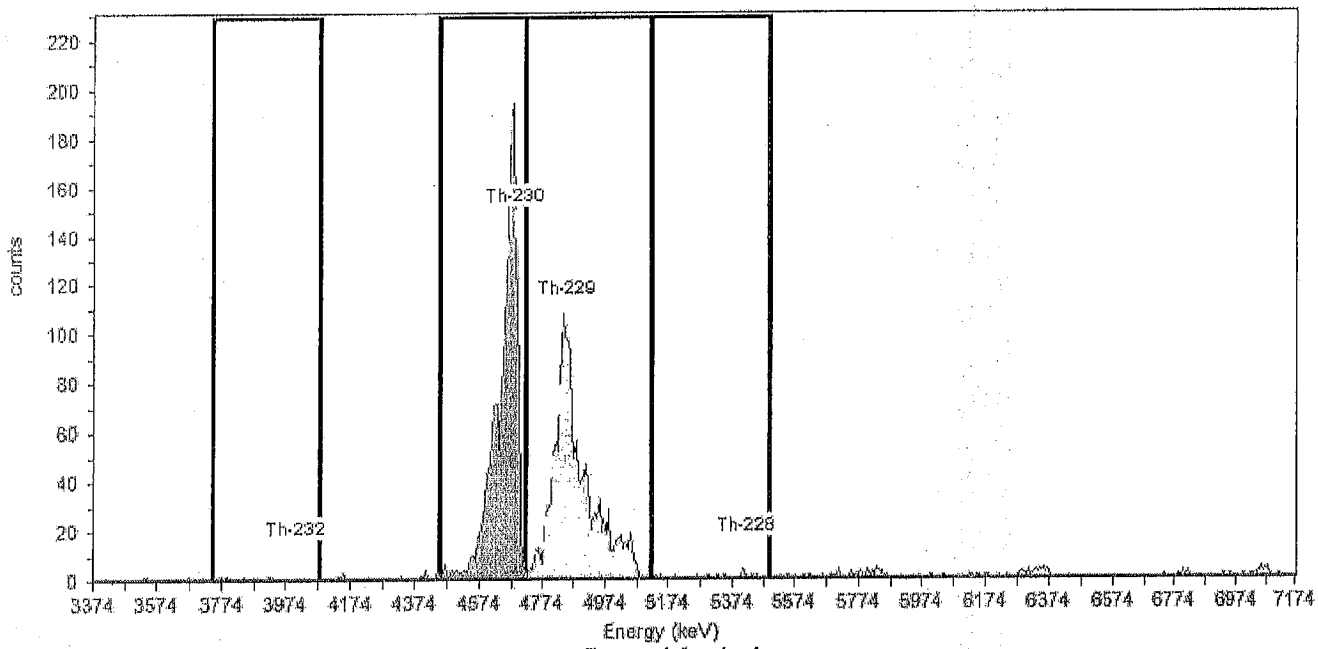
Tracer Name: Th-229_00018
Tracer Activity: 67.23 DPM / mL x (Vol.) 0.10 mL = 6.72 DPM
Tracer Ref. Date: 8/6/2014 4:36:53PM

Tracer Nuclide: Th-229
Tracer Recovery: 91.61%

Acquisition

Detector: AV248 SN: 51-005P4
Acquisition Start Date: 9/25/2014 8:58:54PM
Live Time: 960.00 min.
Real Time: 960.01 min.
Background Date: 9/14/2014 7:35:50PM
Bkgd Info: Sample: ICB;AV248; Det: AV248; Spectrum #1; 9/14/2014 7:35:50 PM

Energy Calibration: IC-8876;AV248-20140701
Efficiency Calibration:IC-8876;AV248-20140701
Calibration Date: 7/1/2014 5:29:05PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 25.83% +/- 0.30% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = Th2007_ROI
Decay Correction:9/23/2014 7:22:45PM
MDA Constants: Kα = 1.64 , Kβ = 1.64

Nuclide Library: Thorium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
Th-232	3999.0	4,010.0	-11.0	3743.0	4072.0	54.9	100.2	4	0.0000	4.43	6.480E-002	DPM/mL
Th-230	4688.0	4,687.5	0.5	4446.0	4717.0	27.0	99.7	1551	2.0000	1548.94	2.280E+001	DPM/mL
Th-229	4848.0	4,845.3	2.7	4717.0	5119.0	79.2	99.6	1522	0.0639	1521.87	2.063E+001	DPM/mL
Th-228	5420.0	5,423.3	-3.3	5119.0	5493.0	57.3	99.8	13	18.0639	-5.06	-7.463E-002	DPM/mL

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:28:19AM 9/30/2014

Sample

Sample Name: Verification3 Type: Sample
Spectrum #2 Analysis #1
:
Sample Collection Date:
Comment:

Sample Volume : 0.30 Sample Units: mL
First Stage Dilution: N/A
Aliquot: N/A Aliquot Fraction: N/A
Dilution 2: N/A
Lab Preparation:

Batch

Batch Name: Th-230_00024
:
Description:

Client Name: Undefined
Client Contact:
Analyst: 60040

Tracer

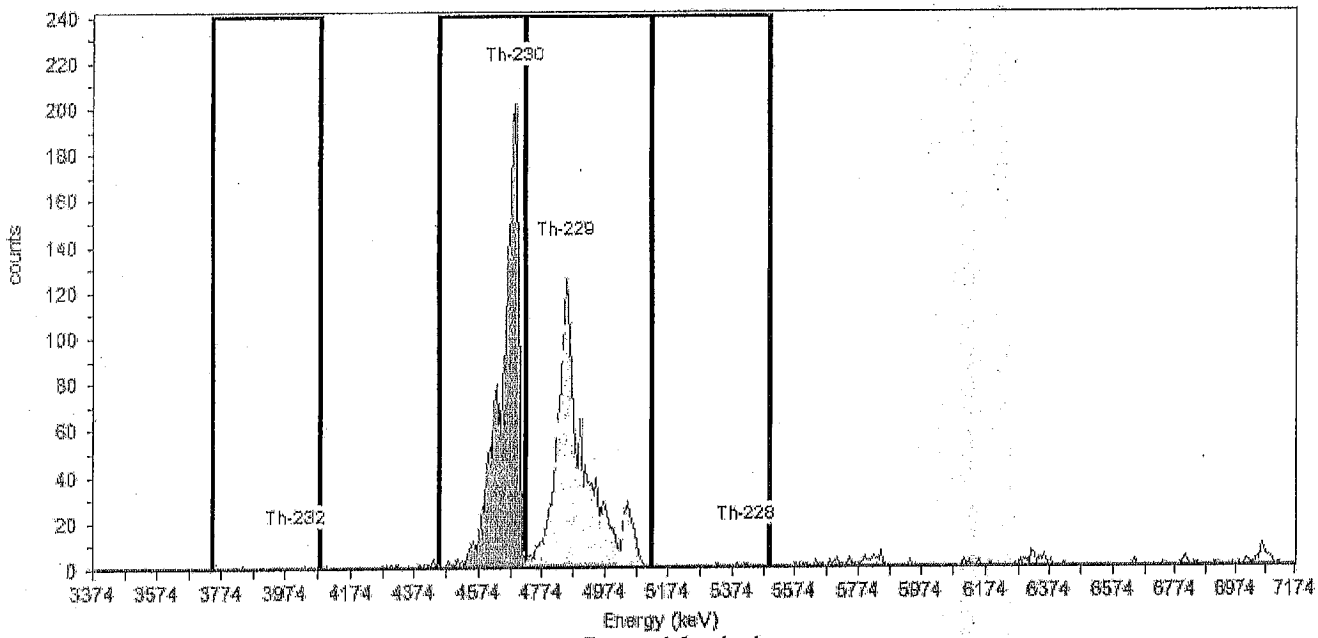
Tracer Name: Th-229_00018
Tracer Activity: 67.23 DPM / mL x (Vol.) 0.10 mL = 6.72 DPM
Tracer Ref. Date: 8/6/2014 4:36:53PM

Tracer Nuclide: Th-229
Tracer Recovery: 95.42%

Acquisition

Detector: AV250 SN: 51-027F2
Acquisition Start Date: 9/25/2014 8:58:54PM
Live Time: 960.00 min.
Real Time: 960.01 min.
Background Date: 9/14/2014 7:35:51PM
Bkgd Info: Sample: ICB;AV250; Det: AV250; Spectrum #1; 9/14/2014 7:35:51 PM

Energy Calibration: IC-9520;AV250-20140701
Efficiency Calibration:IC-9520;AV250-20140701
Calibration Date: 7/1/2014 5:29:13PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 26.40% +/- 0.36% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = Th2007_ROI
Decay Correction:9/23/2014 7:22:45PM
MDA Constants: Kα = 1.64 , Kβ = 1.64

Nuclide Library: Thorium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
Th-232	3999.0	4,010.0	-11.0	3743.0	4072.0	9.7	100.2	2	0.0000	2.00	2.751E-002	DPM/mL
Th-230	4688.0	4,687.5	0.5	4446.0	4717.0	31.9	99.7	1603	0.0000	1602.72	2.216E+001	DPM/mL
Th-229	4848.0	4,845.3	2.7	4717.0	5119.0	68.4	99.6	1621	1.0000	1620.03	2.138E+001	DPM/mL
Th-228	5420.0	5,423.3	-3.3	5119.0	5493.0	50.4	99.8	4	13.0000	-9.00	-1.246E-001	DPM/mL

Gross Alpha (Th-230) verification

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Actinide Prep ✓

Batch No.: —

Balance ID: —

960 min

No.	Sample Number	Aliquot (g / mL)	Crucible ID	Dilution
192 ✗	verification-1	0.3	RC-247	
195 2	2	1	RC-248	
196 ✗	3	1	RC-250	
4			5% Mean Failed	
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				

Note: If a section below is not used, marked the N/A box and initial & date next to the N/A. i.e. Mark the N/A box if a tracer is not added to the sample(s) then initial and date next to the N/A

Tracer ☐ N/A

Initials / Date

Isotope: Th-229
Std Sol'n No.: Th-229_00018
Vol (mL): 0.1
Ref Activity (dpm/mL): 67.22958
Act Ref Date: 08-06-14

Samples Spiked and Traced By: SMD 9-22-14 (Initials / Date)

Verification Signature & Date: MB 9-22-14 (Initials / Date)

LCS Standard ☐ N/A

Initials / Date

Isotope: Th-230
Std Sol'n ID.: Th-230_00024
Vol (mL): 0.3
Ref Activity (dpm/mL): 22.282
Act Ref Date: 08-08-13

SOP's applied in preparing these samples. Mark box to left for all that apply:

☐	ST-RC-0003 Rev.	☐	ST-RC-0040 Rev.	☐	ST-RC-0110 Rev.
☐	ST-RC-0004 Rev.	☐	ST-RC-0041 Rev.	☐	ST-RC-0120 Rev.
☐	ST-RC-0014 Rev.	☐	ST-RC-0050 Rev.	☐	ST-RC-0232 Rev.
☐	ST-RC-0020 Rev.	☐	ST-RC-0090 Rev.	☐	ST-RC-0238 Rev.
☐	ST-RC-0021 Rev.	☑	ST-RC-0100 Rev.	☐	ST-RC-0240 Rev.
				☐	ST-RC-0241 Rev.
				☑	ST-RC-0242 Rev.
				☐	ST-RC-5016 Rev.
				☐	
				☐	

Isotope(s)

αβ ☐	Iso Pu ☐	Tc-99 ☐	Iso Cm ☐
Iso Am ☐	Ra ☐	Iso Th ☑	Pu-241 ☐
KPA ☐	Sr ☐	Iso U ☐	Th-229 ☐
Np ☐	TAR ☐	C-14 ☐	Cl-36 ☐

Count Time	Matrix
Long Count ☐	Soil ☐
Short Count ☐	H_2O ☐

Prepared By: SMB
Date: 9-22-14
SMB 9-22-14

Page 1

Reviewed by: _____
Date: _____

\\Slsvr01\RAD\MasterForms\RAD-0045 Rev(3)

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Th - 230 _ 00024

Reagent ID: Th-230_00024

Description:	Th-230 Gross Alpha Spike	Expiration Date:	02/06/2015
No. of Bottles:	1	Laboratory:	TestAmerica St. Louis
Storage Location:	RAD Alpha/Beta STDs	Prepared By:	Bernsen, Sarah C
Reagent Volume:	250.000 mL	Solvent:	1M HNO3
Creation Date:	09/22/2014	Solvent Lot:	0
Container(s):	455587		
Comment:			

Reagent Analyte Information

Analyte	Source ID	Source Exp. Date	Source Conc.	Source Conc. Units	Final Conc.	Final Conc. Units
Gross Alpha	Th-230_00019	08/08/2063	2228.23100	dpm/mL	22.28231	dpm/mL
Th-230	Th-230_00019	08/08/2063	2228.23100	dpm/mL	22.28231	dpm/mL

Source Reagents

Reagent	Description	Type	Expiration	Vendor	Vendor Lot #	Vendor Cat Lot #	Volume Used	Volume Units
Th-230_00019	Th-230 Parent		08/08/63				2.50000	mL

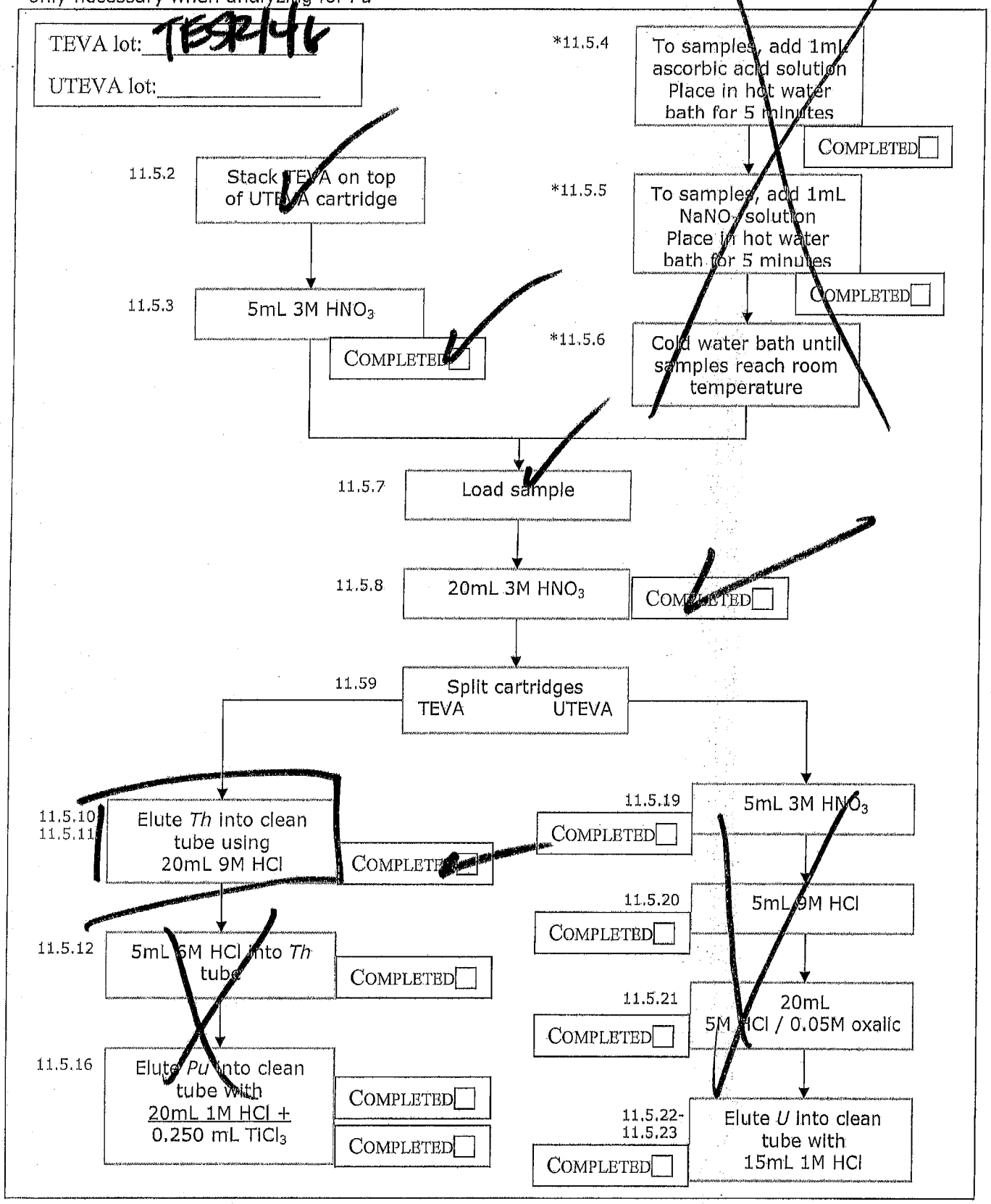
Sequential Thorium, Plutonium and Uranium via TEVA/UTEVA ST-RC-0242

Batch: Th Ur.

MB 9/23

All rinses should flow at 1 mL/minute (only 3M HNO_3 may be done at 3 mL/minute)

*only necessary when analyzing for *Pu*



Form: RAD-0063, Revised 09/18/13

Reagent

Th-230_00025

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

455603
ID: Th-230_00025
Exp: 10/14/15 Prpd: SCB Cnt: 09/22/14
Th-230 Spike- Actinides

Reagent ID: Th-230_00025

Description:	Th-230 Spike- Actinides	Expiration Date:	10/14/2015
No. of Bottles:	1	Laboratory:	TestAmerica St. Louis
Storage Location:	RAD Actinide STDs	Prepared By:	Bernsen, Sarah C
Reagent Volume:	200.000 mL	Solvent:	1M HNO3
Creation Date:	09/22/2014	Solvent Lot:	0
Container(s):	455603		
Comment:			

Reagent Analyte Information

Analyte	Source ID	Source Exp. Date	Source Conc.	Source Conc. Units	Final Conc.	Final Conc. Units
Gross Alpha	Th-230_00019	08/08/2063	2228.23100	dpm/mL	44.56461	dpm/mL
Th-230	Th-230_00019	08/08/2063	2228.23100	dpm/mL	44.56461	dpm/mL

Source Reagents

Reagent	Description	Type	Expiration	Vendor	Vendor Lot #	Vendor Cat Lot #	Volume Used	Volume Units
Th-230_00019	Th-230 Parent		08/08/63				4.00000	mL

St. Louis Radiological Standard Reverification Form

Standard ID Number: Th-230_00025
True Value = 44.564 DPM/L or g
Date Analyzed: 10/14/2014

Radionuclide: Th-230

	Replicates	
#1	44.35	DPM/L or g
#2	46.6	DPM/L or g
#3	47.34	DPM/L or g

Mean = 46.09667

1 sigma = 1.557252

1.96 sigma = 3.052214

True Value minus 5% = 42.3358 (True Value - 5%)
True Value plus 5% = 46.7922 (True Value + 5%)

Accuracy:
Mean value within 5% of Certified (True) Value? Yes **(Acceptance Criteria)**

Precision:
1.96 sigma Value Within 10% of Mean Value? Yes **(Acceptance Criteria)**

Standard Reverification Acceptable? Yes

Note: Criteria for reverification of radiological standards is taken from the DOE QSAS and LANL Statements of Work

Reviewed By/Date: RTM

SOP Reference: STL-QA-0002, Current Revision

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
9:46:06PM 10/14/2014

Sample

Sample Name: Verification1 Type: Sample
Spectrum #1 Analysis #1
:
Sample Collection Date:
Comment:

Sample Volume : 0.30 Sample Units: mL
First Stage Dilution: N/A
Aliquot: N/A Aliquot Fraction: N/A
Dilution 2: N/A
Lab Preparation:

Batch

Batch Name: TH-230_00025
:
Description:

Client Name: Undefined
Client Contact:
Analyst: 60040

Tracer

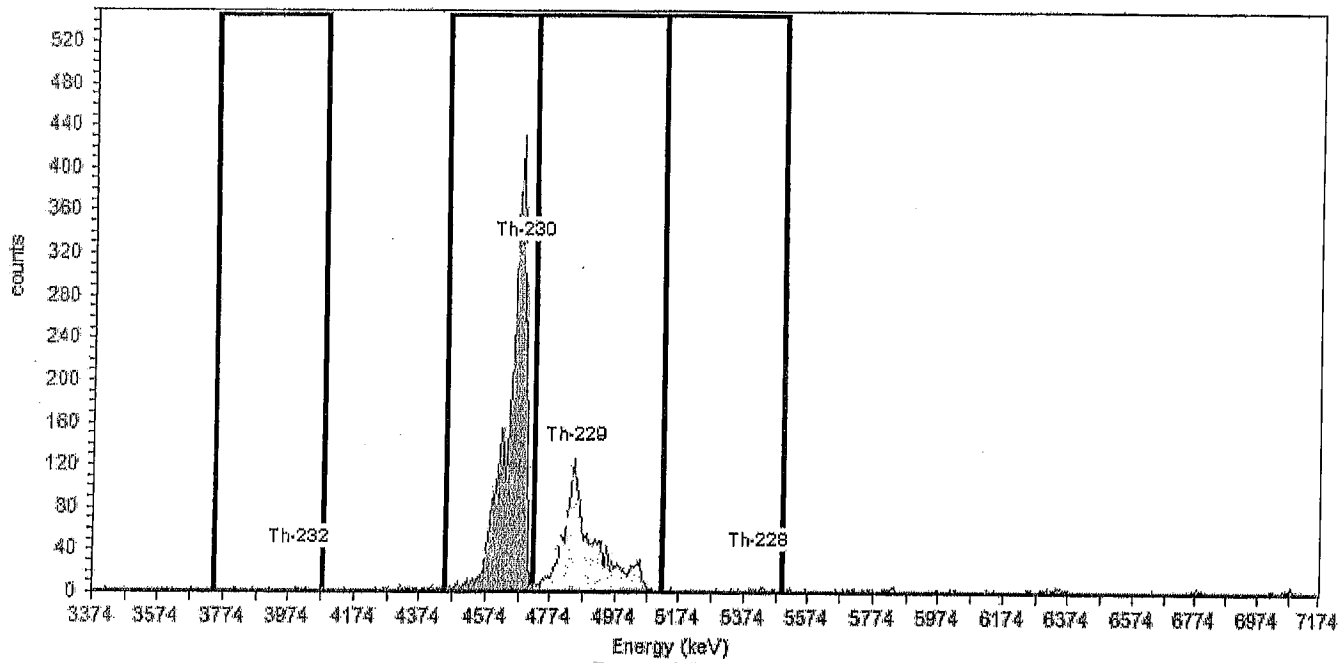
Tracer Name: Th-229_00018
Tracer Activity: 67.23 DPM / mL x (Vol.) 0.10 mL = 6.72 DPM
Tracer Ref. Date: 8/6/2014 4:36:53PM

Tracer Nuclide: Th-229
Tracer Recovery: 99.85%

Acquisition

Detector: AV247 SN: 51-027F3
Acquisition Start Date: 10/14/2014 1:33:02AM
Live Time: 960.00 min.
Real Time: 960.00 min.
Background Date: 9/14/2014 7:35:50PM
Bkgd Info: Sample: ICB;AV247; Det: AV247; Spectrum #1; 9/14/2014 7:35:50 PM

Energy Calibration: IC-8875;AV247-20140701
Efficiency Calibration:IC-8875;AV247-20140701
Calibration Date: 7/1/2014 5:29:01PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 26.06% +/- 0.36% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = Th2007_ROI
Decay Correction:10/14/2014 1:31:04AM
MDA Constants: Kα = 1.64 , Kβ = 1.64

Nuclide Library: Thorium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
Th-232	3999.0	4,010.0	-11.0	3743.0	4072.0	39.6	100.2	9	3.0000	5.54	7.381E-002	DPM/mL
Th-230	4688.0	4,687.5	0.5	4446.0	4717.0	25.9	99.7	3313	0.0000	3313.12	4.435E+001	DPM/mL
Th-229	4848.0	4,845.3	2.7	4717.0	5119.0	68.6	99.6	1674	1.0000	1673.12	2.238E+001	DPM/mL
Th-228	5420.0	5,423.3	-3.3	5119.0	5493.0	47.1	99.8	18	6.9134	11.09	1.483E-001	DPM/mL

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
9:46:18PM 10/14/2014

Sample

Sample Name: Verification2 Type: Sample
Spectrum #1 Analysis #1
:
Sample Collection Date:
Comment:

Sample Volume : 0.30 Sample Units: mL
First Stage Dilution: N/A
Aliquot: N/A Aliquot Fraction: N/A
Dilution 2: N/A
Lab Preparation:

Batch

Batch Name: TH-230_00025
:
Description:

Client Name: Undefined
Client Contact:
Analyst: 60040

Tracer

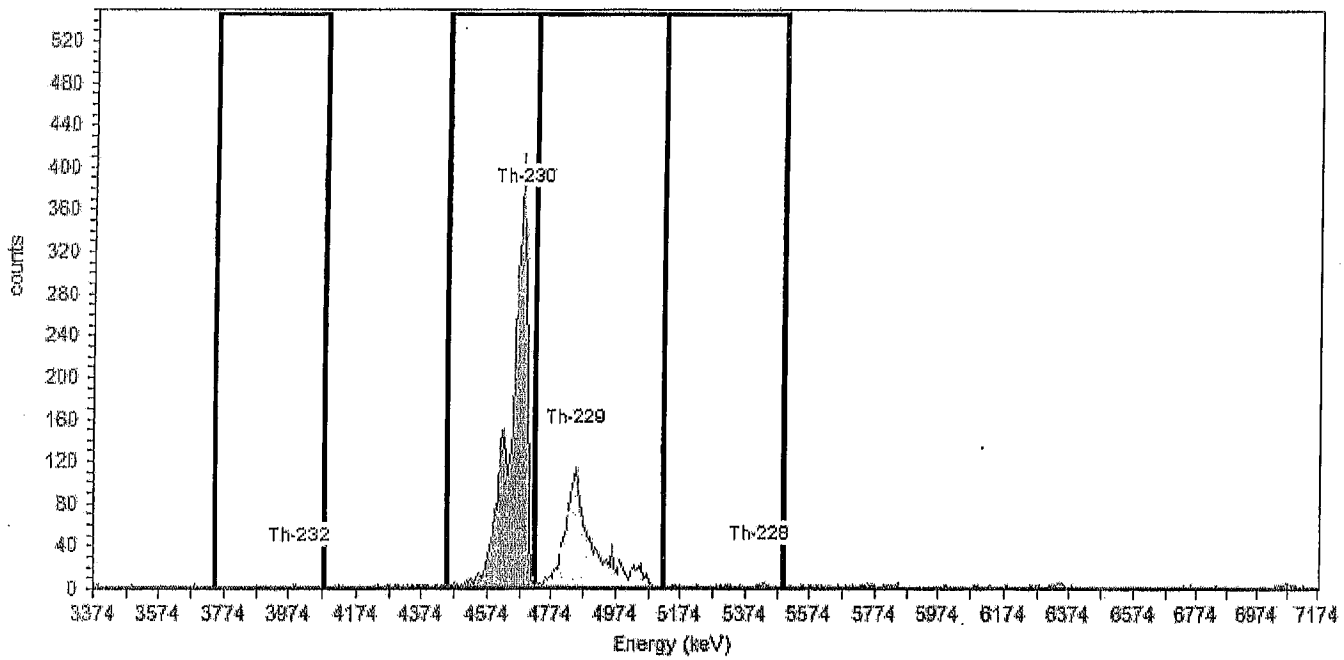
Tracer Name: Th-229_00018
Tracer Activity: 67.23 DPM / mL x (Vol.) 0.10 mL = 6.72 DPM
Tracer Ref. Date: 8/6/2014 4:36:53PM

Tracer Nuclide: Th-229
Tracer Recovery: 87.77%

Acquisition

Detector: AV248 SN: 51-005P4
Acquisition Start Date: 10/14/2014 1:33:02AM
Live Time: 960.00 min.
Real Time: 960.00 min.
Background Date: 9/14/2014 7:35:50PM
Bkgd Info: Sample: ICB;AV248; Det: AV248; Spectrum #1; 9/14/2014 7:35:50 PM

Energy Calibration: IC-8876;AV248-20140701
Efficiency Calibration:IC-8876;AV248-20140701
Calibration Date: 7/1/2014 5:29:05PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 25.83% +/- 0.30% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = Th2007_ROI
Decay Correction:10/14/2014 1:31:04AM
MDA Constants: Kα = 1.64 , Kβ = 1.64

Nuclide Library: Thorium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
Th-232	3999.0	4,010.0	-11.0	3743.0	4072.0	44.5	100.2	1	0.0000	1.00	1.529E-002	DPM/mL
Th-230	4688.0	4,687.5	0.5	4446.0	4717.0	29.3	99.7	3035	2.0000	3033.37	4.660E+001	DPM/mL
Th-229	4848.0	4,845.3	2.7	4717.0	5119.0	72.1	99.6	1458	0.0639	1458.00	1.967E+001	DPM/mL
Th-228	5420.0	5,423.3	-3.3	5119.0	5493.0	146.1	99.8	19	18.0639	0.94	1.437E-002	DPM/mL

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
9:46:30PM 10/14/2014

Sample

Sample Name: Verification3 Type: Sample
Spectrum #1 Analysis #1
:
Sample Collection Date:
Comment:

Sample Volume : 0.30 Sample Units: mL
First Stage Dilution: N/A
Aliquot: N/A Aliquot Fraction: N/A
Dilution 2: N/A
Lab Preparation:

Batch

Batch Name: TH-230_00025
:
Description:

Client Name: Undefined
Client Contact:
Analyst: 60040

Tracer

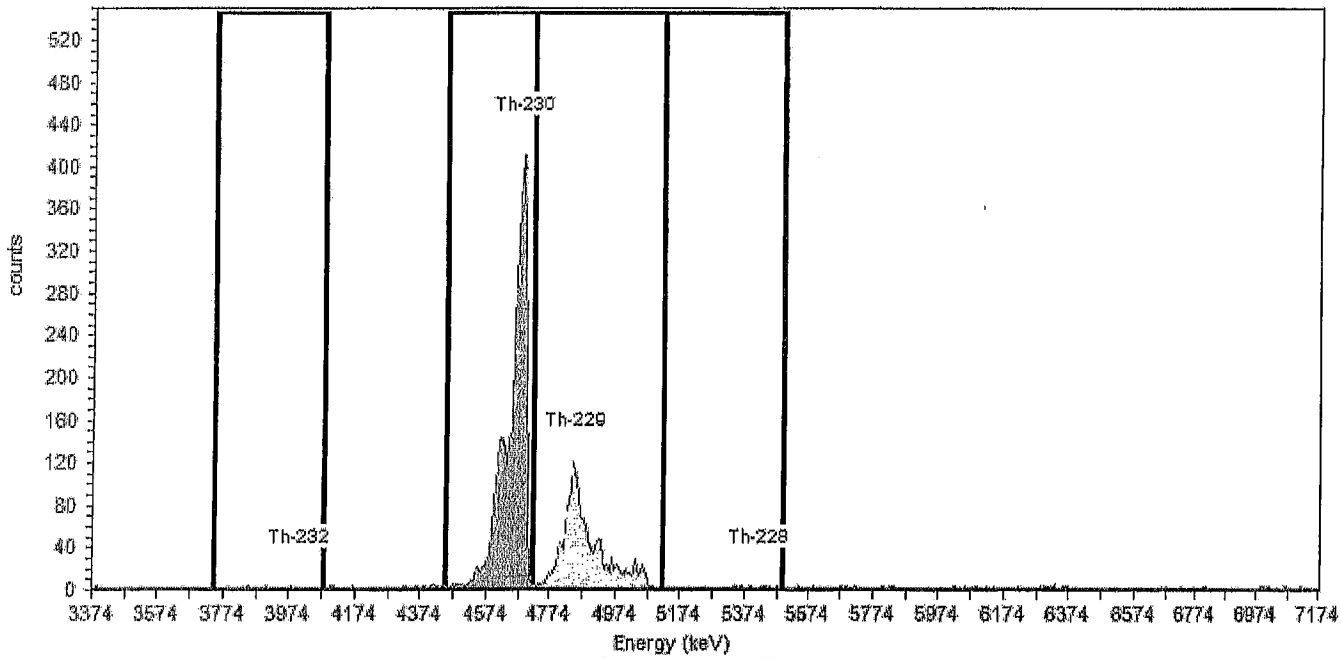
Tracer Name: Th-229_00018
Tracer Activity: 67.23 DPM / mL x (Vol.) 0.10 mL = 6.72 DPM
Tracer Ref. Date: 8/6/2014 4:36:53PM

Tracer Nuclide: Th-229
Tracer Recovery: 87.56%

Acquisition

Detector: AV249 SN: 51-005EE5
Acquisition Start Date: 10/14/2014 1:33:02AM
Live Time: 960.00 min.
Real Time: 960.00 min.
Background Date: 9/14/2014 7:35:51PM
Bkgd Info: Sample: ICB;AV249; Det: AV249; Spectrum #1; 9/14/2014 7:35:51 PM

Energy Calibration: IC-8877;AV249-20140701
Efficiency Calibration:IC-8877;AV249-20140701
Calibration Date: 7/1/2014 5:29:09PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 27.35% +/- 0.32% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = Th2007_ROI
Decay Correction:10/14/2014 1:31:04AM
MDA Constants: Kα = 1.64 , Kβ = 1.64

Nuclide Library: Thorium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
Th-232	3999.0	4,010.0	-11.0	3743.0	4072.0	39.9	100.2	3	0.4586	2.54	3.678E-002	DPM/mL
Th-230	4688.0	4,687.5	0.5	4446.0	4717.0	30.5	99.7	3256	1.0000	3255.03	4.734E+001	DPM/mL
Th-229	4848.0	4,845.3	2.7	4717.0	5119.0	69.6	99.6	1542	2.0639	1539.97	1.962E+001	DPM/mL
Th-228	5420.0	5,423.3	-3.3	5119.0	5493.0	38.0	99.8	10	6.0639	3.94	5.721E-002	DPM/mL

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Actinide Prep

Th-230 ver.

Batch No. : —

Balance ID : —

AKS 10/13/14

No.	Sample Number	Aliquot (g / mL)	Crucible ID	Dilution
1	Ver. 1 247	0.3		
2	12 248	1		
3	13 249	1		
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				

Note: If a section below is not used, marked the N/A box and initial & date next to the N/A. i.e. Mark the N/A box if a tracer is not added to the sample(s) then initial and date next to the N/A

Tracer ☐ N/A (Initials / Date)

Isotope : Th-229
Std Sol'n No. : Th-229-00018
Vol (mL) : 0.1
Ref Activity (dpm/mL) :
Act Ref Date :

Samples Spiked and Traced By: SUB 10/10/14 (Initials / Date)

Verification Signature & Date: NMN per SUB 10/10/14 (Initials / Date)

LCS Standard ☐ N/A (Initials / Date)

Isotope : Th-230
Std Sol'n ID. : Th-230-00025
Vol (mL) : 0.3
Ref Activity (dpm/mL) : 44.504
Act Ref Date : 8/8/13

SOP's applied in preparing these samples. Mark box to left for all that apply:

☐	ST-RC-0003 Rev.	☐	ST-RC-0040 Rev.	☐	ST-RC-0110 Rev.
☑	ST-RC-0004 Rev.	☐	ST-RC-0041 Rev.	☐	ST-RC-0120 Rev.
☐	ST-RC-0014 Rev.	☐	ST-RC-0050 Rev.	☐	ST-RC-0232 Rev.
☐	ST-RC-0020 Rev.	☐	ST-RC-0090 Rev.	☐	ST-RC-0238 Rev.
☐	ST-RC-0021 Rev.	☑	ST-RC-0100 Rev.	☐	ST-RC-0240 Rev.
				☐	ST-RC-0241 Rev.
				☑	ST-RC-0242 Rev.
				☐	ST-RC-5016 Rev.

Isotope(s)

αβ ☐	Iso Pu ☐	Tc-99 ☐	Iso Cm ☐
Iso Am ☐	Ra ☐	Iso Th ☑	Pu-241 ☐
KPA ☐	Sr ☐	Iso U ☐	Th-229 ☐
Np ☐	TAR ☐	C-14 ☐	Cl-36 ☐

Count Time	Matrix
Long Count ☐	Soil ☐
Short Count ☐	H_2O ☐

Prepared By : SUB
Date : 10/13/14

Reviewed by: _____
Date: _____

\\Slsvr01\RAD\MasterForms\RAD-0045 Rev(3)

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Reagent ID: Th-230_00025

		Expiration Date:	01/28/2015
Description:	Th-230 Spike- Actinides	Laboratory:	TestAmerica St. Louis
No. of Bottles:	1	Prepared By:	Bernsen, Sarah C
Storage Location:	RAD Actinide STDs	Solvent:	1M HNO3
Reagent Volume:	200.000 mL	Solvent Lot:	0
Creation Date:	09/22/2014		
Container(s):	455603		
Comment:			

Reagent Analyte Information

Analyte	Source ID	Source Exp. Date	Source Conc.	Source Conc. Units	Final Conc.	Final Conc. Units
Gross Alpha	Th-230_00019	08/08/2063	2228.23100	dpm/mL	44.56461	dpm/mL
Th-230	Th-230_00019	08/08/2063	2228.23100	dpm/mL	44.56461	dpm/mL

Source Reagents

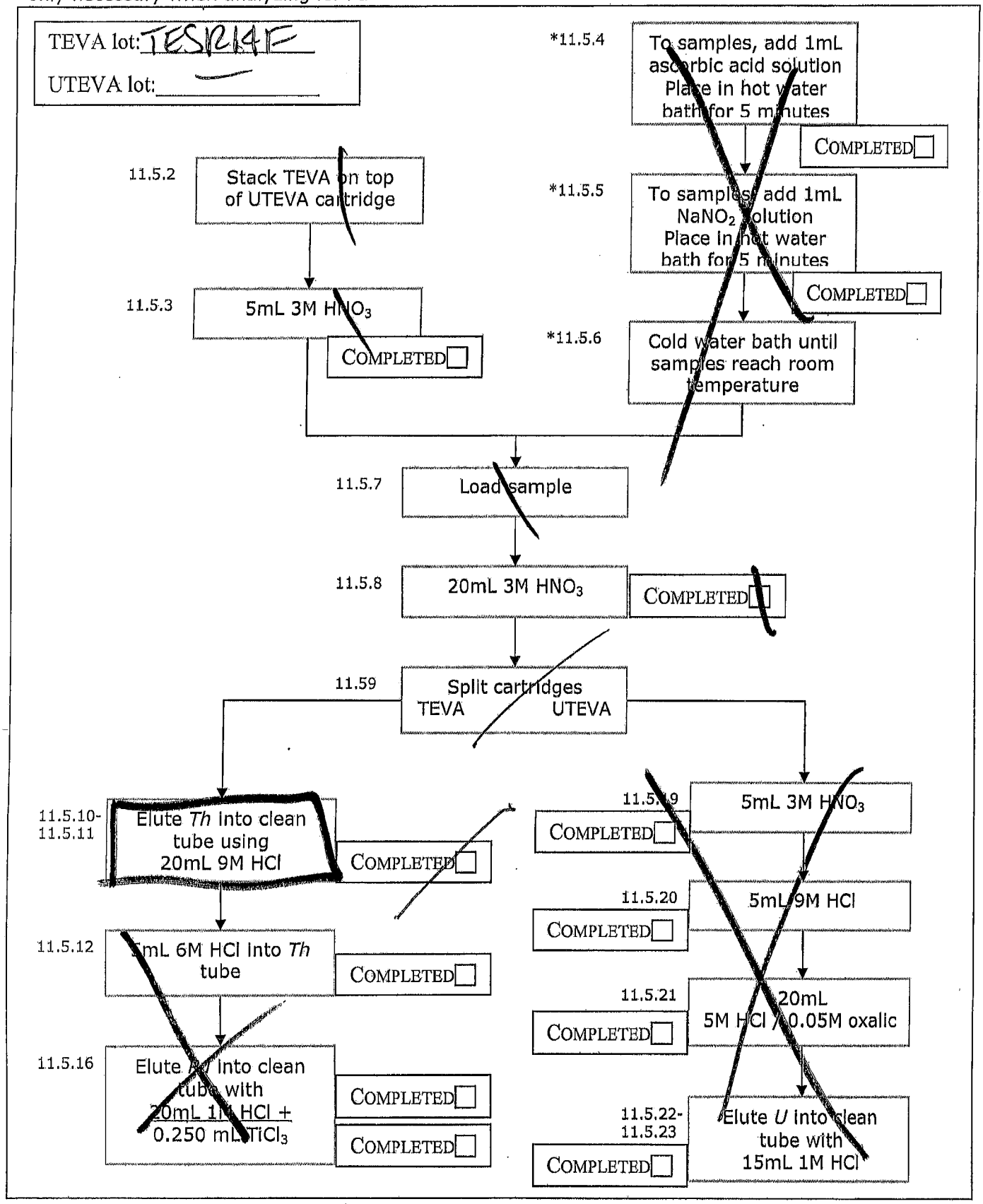
Reagent	Description	Type	Expiration	Vendor	Vendor Lot #	Vendor Cat Lot #	Volume Used	Volume Units
Th-230_00019	Th-230 Parent		08/08/63				4.00000	mL

Sequential Thorium, Plutonium and Uranium via TEVA/UTEVA ST-RC-0242

Batch:_____

All rinses should flow at 1 mL/minute (only 3M HNO_3 may be done at 3 mL/minute)

*only necessary when analyzing for *Pu*



Form: RAD-0063, Revised 09/18/13

Reagent

U-232_00003

Eckert & Ziegler
Analytics

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318
Tel 404·352·8677
Fax 404·352·2837
www.analyticsinc.com

CERTIFICATE OF CALIBRATION
Standard Radionuclide Source

85539-334

5 mL Liquid in Flame Sealed Vial

Customer: Test America/Earth City, MO
P.O. No.: 2434448, Item 1

This standard radionuclide source was prepared gravimetrically from a master solution, calibrated by Eckert & Ziegler Analytics. The master solution was calibrated by liquid scintillation counting. Radionuclide purity and calibration were checked by germanium gamma-ray spectrometry and liquid scintillation counting. The nuclear decay rate and reference date for this source are given below. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 1, February, 1979, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Isotope	Half-Life, Days	Activity (Bq)	Uncertainty*, % Type u_A	u_B	U	Reference Date (12:00 PM EST)
U-232	2.517E+04	1.725E+04	0.5	2.4	4.9	08/25/2011

***Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

Comments:
Impurities: U-232 daughters, γ-impurities (other than decay products) < 0.1 %.

Source Prepared by: M. I. Taskaeva
M. I. Taskaeva, Radiochemist

QA Approved:
J. D. McCorvey, QA Manager Alternate

Date: 8/25/11

ACCREDITED SOURCE CALIBRATION LABORATORY HEALTH PHYSICS SOCIETY FOUNDED 1956

Corporate Office
24937 Avenue Tibbitts Valencia, California 91355

Laboratory
1380 Seaboard Industrial Blvd. Atlanta, Georgia, 30318

Reagent

U-232_00028

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Reagent ID: U-232_00028

		Expiration Date:	09/30/2015
Description:	U-232 Clean Tracer	Laboratory:	TestAmerica St. Louis
No. of Bottles:	1	Prepared By:	Bernsen, Sarah C
Storage Location:	RAD Actinide STDs	Solvent:	DI Water
Reagent Volume:	250.000 mL	Solvent Lot:	0
Creation Date:	09/23/2014		
Container(s):	456736		
Comment:	Prepared according to SOP ST-RC-0244, Rev.16 section 7.28 to different volume. 2 mL of parent to ~100 mL, 3g potassium sulfate, pH adjusted with 2M sulfuric acid. 25 mL of 1% lead nitrate. pH checked. Final volume 250 mL (instead of 100 mL).		

Reagent Analyte Information

Analyte	Source ID	Source Exp. Date	Source Conc.	Source Conc. Units	Final Conc.	Final Conc. Units
U-232	U-232_00009	08/25/2061	10280.70700	dpm/mL	82.24566	dpm/mL

Source Reagents

Reagent	Description	Type	Expiration	Vendor	Vendor Lot #	Vendor Cat Lot #	Volume Used	Volume Units
U-232_00009	U-232 Parent		08/25/61				2.00000	mL

St. Louis Radiological Standard Reverification Form

Standard ID Number: U-232_00028
True Value = 79.72088 DPM/L or g
Date Analyzed: 9/30/2014

Radionuclide: U-232 clean

	Replicates	
#1	78.189	DPM/L or g
#2	74.447	DPM/L or g
#3	77.297	DPM/L or g

Mean = 76.64433

1 sigma = 1.954513

1.96 sigma = 3.830846

True Value minus 5% = 75.73483 (True Value - 5%)
True Value plus 5% = 83.70692 (True Value + 5%)

Accuracy:
Mean value within 5% of Certified (True) Value? **Yes** **(Acceptance Criteria)**

Precision:
1.96 sigma Value Within 10% of Mean Value? **Yes** **(Acceptance Criteria)**

Standard Reverification Acceptable? **Yes**

Note: Criteria for reverification of radiological standards is taken from the DOE QSAS and LANL Statements of Work

Reviewed By/Date: Michaela L. Korrinhizer 10/1/2014

SOP Reference: STL-QA-0002, Current Revision

Uranium-232					
Initial Activity:	82.24565	dpm			
Reference Date:	8/25/2011				
Current Date:	9/30/2014		(or date at which you wish to determine activity)		
Elapsed Time:	1132	days			
Half Life:	25165.725	days	603977.4		
Exponential Term:	0.969302034				
Corrected Activity:	79.72087587	dpm	35.91030445	pCi	

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
5:12:13PM 10/1/2014

Sample

Sample Name: Verification 1
SampleType: Sample
:
Sample Collection Date:

Spectrum #1 Analysis #1
Sample Volume : 0.1000mL
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: U-232_00028_Clean
AnalysisID: 621980

Analyst: 60040

Tracer

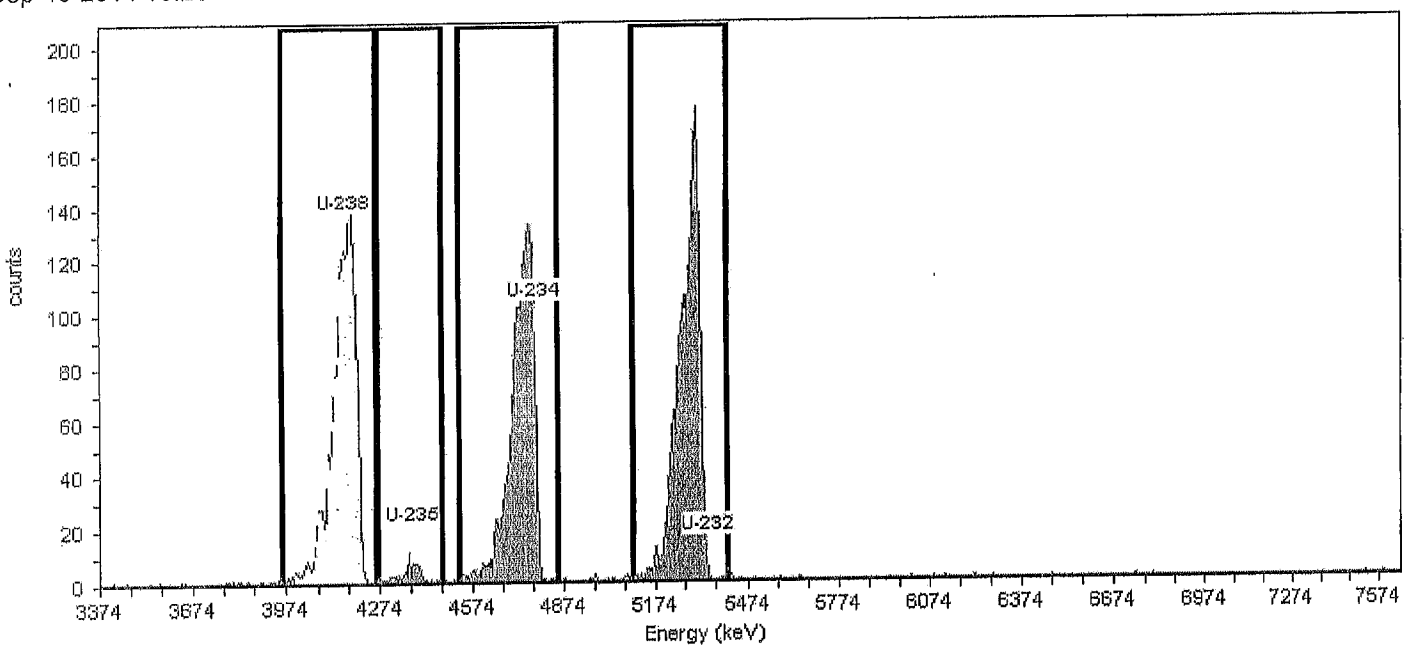
Tracer Name: UNAT Spike_00001
Tracer Activity: 72.27 DPM/mL x (Vol.)0.10 mL = 7.23 DPM
Tracer Ref. Date: 3/30/2008 11:00:22AM

Tracer Nuclide: U-238
Tracer Recovery: 84.88%

Acquisition

Detector: AV103
Serial Number: 49-037F3
Acquisition Start Date: 9/30/2014 7:28:49PM
Live Time: 960.00 min.
Real Time: 960.01 min.
Background Date: 9/19/2014 3:26:33PM
Background Info: Sample: ICB;AV103; Det: AV103; Spectrum #1; Sep-19-2014 15:26

Calibration Name: IC-9794;AV103-20140501
Calibration Date: 5/1/2014 5:53:36PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 26.03% +/- 0.32% TPU(2 sigma)



General Analysis

Analysis Method: ROI Analysis, Set Name = UROI
Decay Correction: 9/30/2014 7:27:32PM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Uranium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
U-238	4157.5	4,196.0	-38.5	3956.1	4261.9	76.6	100.0	1533	0.0000	1533.00	61.340	DPM/mL
U-235	4381.2	4,396.0	-14.8	4269.3	4470.7	48.5	80.2	64	2.0000	62.00	3.644	DPM/mL
U-234	4776.4	4,775.8	0.6	4530.3	4851.0	77.4	99.8	1472	2.0000	1470.00	69.434	DPM/mL
U-232	5343.2	5,320.3	22.9	5097.1	5410.3	63.8	100.1	1662	2.0000	1660.00	78.189	DPM/mL

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
5:12:04PM 10/1/2014

Sample

Sample Name: Verification 2
SampleType: Sample
:
Sample Collection Date:

Spectrum #1 Analysis #1
Sample Volume : 0.1000mL
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: U-232_00028_Clean
AnalysisID: 621981

Analyst: 60040

Tracer

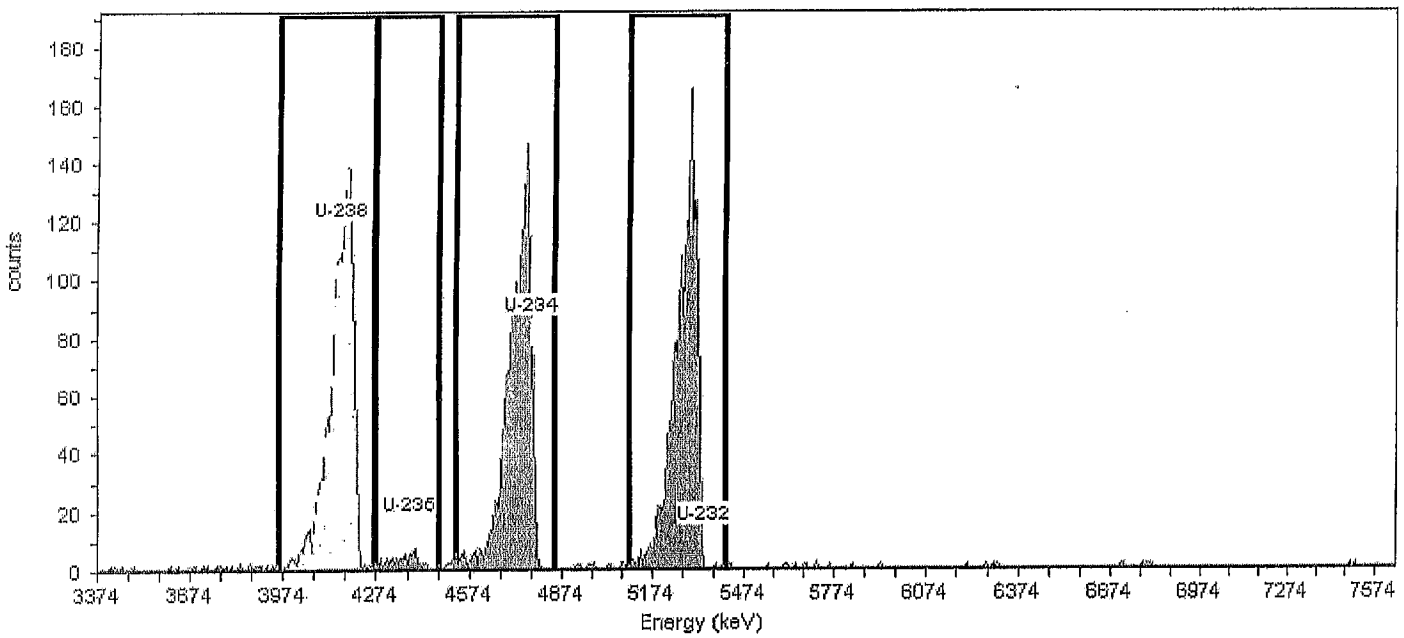
Tracer Name: UNAT Spike_00001
Tracer Activity: 72.27 DPM/mL x (Vol.)0.10 mL = 7.23 DPM
Tracer Ref. Date: 3/30/2008 11:00:22AM

Tracer Nuclide: U-238
Tracer Recovery: 82.24%

Acquisition

Detector: AV104
Serial Number: 49-037E5
Acquisition Start Date: 9/30/2014 7:28:49PM
Live Time: 960.00 min.
Real Time: 960.01 min.
Background Date: 9/19/2014 3:26:35PM
Background Info: Sample: ICB;AV104; Det: AV104; Spectrum #1; Sep-19-2014 15:26

Calibration Name: IC-9795;AV104-20140501
Calibration Date: 5/1/2014 5:53:43PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 25.99% +/- 0.34% TPU(2 sigma)



General Analysis

Analysis Method: ROI Analysis, Set Name = UROI
Decay Correction: 9/30/2014 7:27:32PM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Uranium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
U-238	4157.5	4,196.0	-38.5	3956.1	4261.9	76.7	100.0	1489	6.0000	1483.00	59.433	DPM/mL
U-235	4381.2	4,396.0	-14.8	4269.3	4470.7	96.9	80.2	68	0.0000	68.00	4.132	DPM/mL
U-234	4776.4	4,775.8	0.6	4530.3	4851.0	85.2	99.8	1492	3.0000	1489.00	72.703	DPM/mL
U-232	5343.2	5,320.3	22.9	5097.1	5410.3	80.3	100.1	1532	3.0000	1529.00	74.447	DPM/mL

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
5:11:54PM 10/1/2014

Sample

Sample Name: Verification 3
SampleType: Sample
:
Sample Collection Date:

Spectrum #1 Analysis #1
Sample Volume : 0.1000mL
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: U-232_00028_Clean
AnalysisID: 621982

Analyst: 60040

Tracer

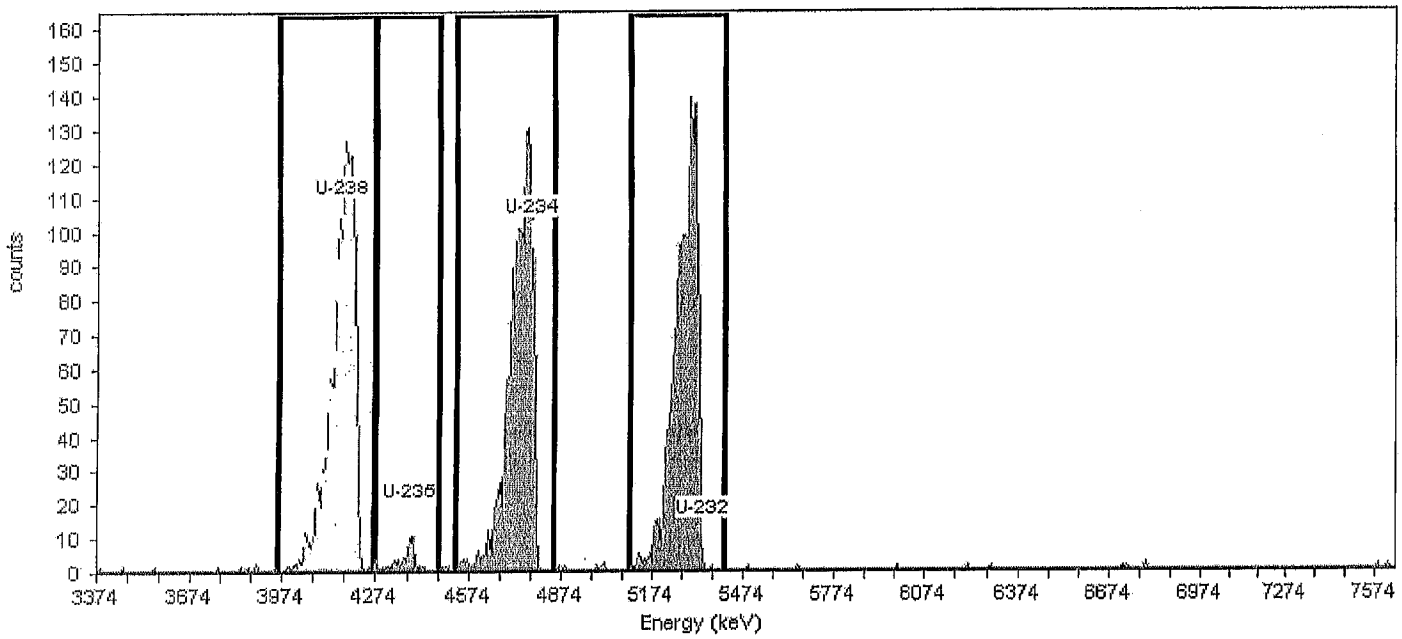
Tracer Name: UNAT Spike_00001
Tracer Activity: 72.27 DPM/mL x (Vol.)0.10 mL = 7.23 DPM
Tracer Ref. Date: 3/30/2008 11:00:22AM

Tracer Nuclide: U-238
Tracer Recovery: 82.46%

Acquisition

Detector: AV105
Serial Number: 49-037F1
Acquisition Start Date: 9/30/2014 7:28:50PM
Live Time: 960.00 min.
Real Time: 960.01 min.
Background Date: 9/19/2014 3:26:37PM
Background Info: Sample: ICB;AV105; Det: AV105; Spectrum #1; Sep-19-2014 15:26

Calibration Name: IC-9817;AV105-20140501
Calibration Date: 5/1/2014 5:53:50PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 24.05% +/- 0.30% TPU(2 sigma)



General Analysis

Analysis Method: ROI Analysis, Set Name = UROI
Decay Correction: 9/30/2014 7:27:32PM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Uranium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
U-238	4157.5	4,196.0	-38.5	3956.1	4261.9	73.2	100.0	1377	1.0000	1376.00	59.593	DPM/mL
U-235	4381.2	4,396.0	-14.8	4269.3	4470.7	23.1	80.2	52	1.0000	51.00	3.340	DPM/mL
U-234	4776.4	4,775.8	0.6	4530.3	4851.0	81.9	99.8	1393	1.0000	1392.00	73.252	DPM/mL
U-232	5343.2	5,320.3	22.9	5097.1	5410.3	87.1	100.1	1478	5.0000	1473.00	77.297	DPM/mL

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
11:10:20PM 10/1/2014

Sample

Sample Name: Verification 1
SampleType: Sample
:
Sample Collection Date:

Spectrum #1 Analysis #1
Sample Volume : 1.0000mL
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: U-232_00028_Th_Clean
AnalysisID: 621985

Analyst: 60040

Tracer

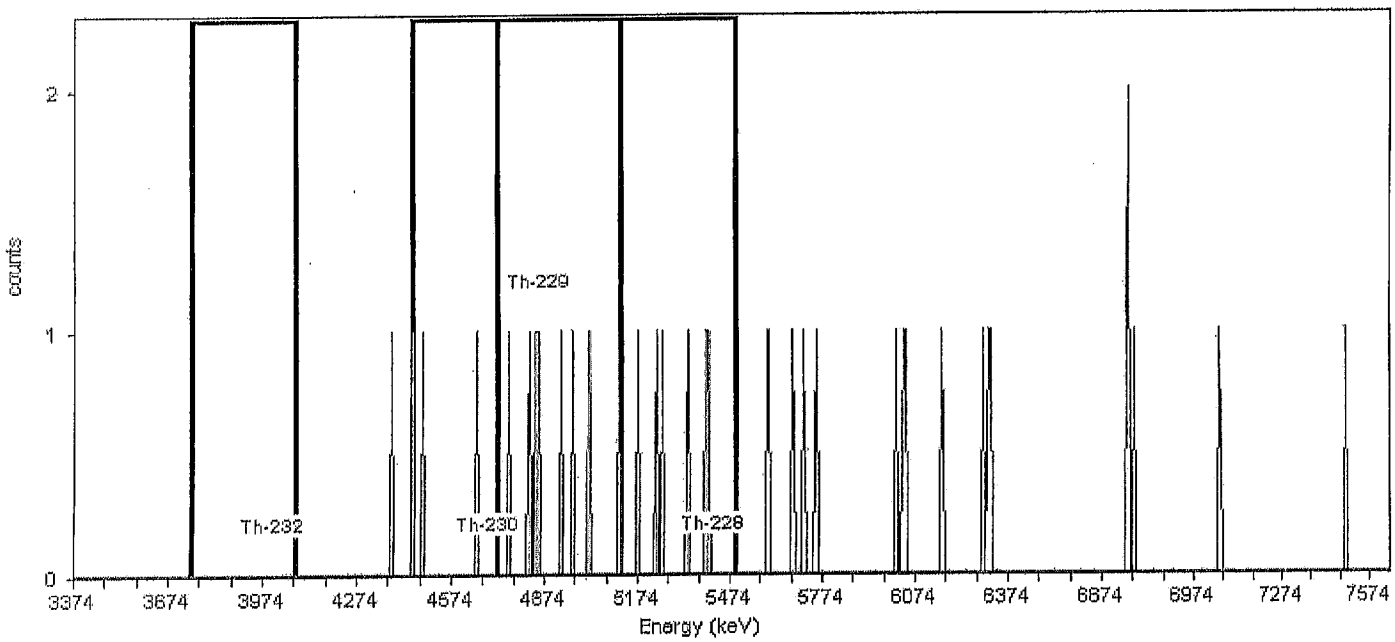
Tracer Name: Undefined
Tracer Activity:
Tracer Ref. Date:

Tracer Nuclide: External Recovery
Tracer Recovery: 100.00%

Acquisition

Detector: AV106
Serial Number: 49-037F6
Acquisition Start Date: 9/30/2014 7:30:38PM
Live Time: 960.00 min.
Real Time: 960.01 min.
Background Date: 9/19/2014 3:26:39PM
Background Info: Sample: ICB;AV106; Det: AV106; Spectrum #1; Sep-19-2014 15:26

Calibration Name: IC-9884;AV106-20140501
Calibration Date: 5/1/2014 5:53:57PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 26.42% +/- 0.37% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = Th2007_ROI
Decay Correction: 9/30/2014 7:29:07PM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Thorium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
Th-232	3999.0	4,010.0	-11.0	3743.0	4072.0	.0	100.2	0	2.0000	-2.00	-0.008	DPM/mL
Th-230	4688.0	4,687.5	0.5	4446.0	4717.0	39.9	99.7	3	3.0000	-0.31	-0.001	DPM/mL
Th-229	4848.0	4,845.3	2.7	4717.0	5119.0	.3	99.8	7	5.0000	2.06	0.008	DPM/mL
Th-228	5420.0	5,423.3	-3.3	5119.0	5493.0	.0	99.8	6	3.0000	3.06	0.012	DPM/mL

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
11:10:38PM 10/1/2014

Sample

Sample Name: Verification 2
SampleType: Sample
:
Sample Collection Date:

Spectrum #1 Analysis #1
Sample Volume : 1.0000mL
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: U-232_00028_Th_Clean
AnalysisID: 621983

Analyst: 60040

Tracer

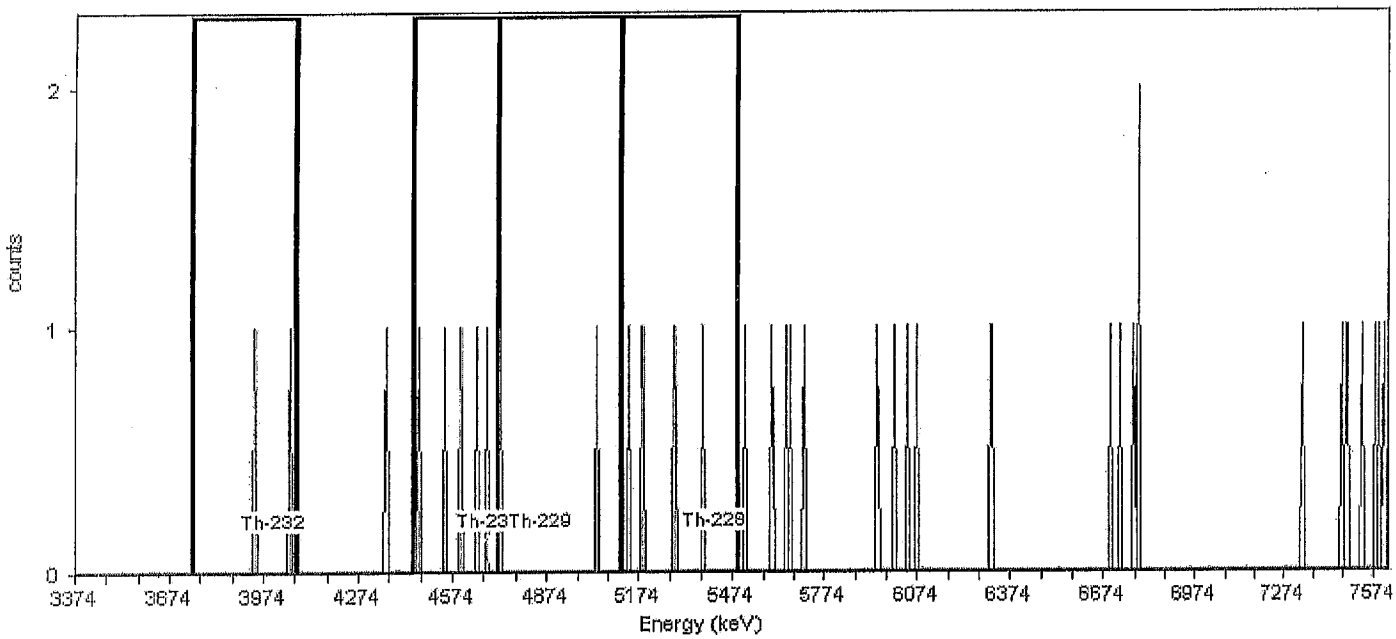
Tracer Name: Undefined
Tracer Activity:
Tracer Ref. Date:

Tracer Nuclide: External Recovery
Tracer Recovery: 100.00%

Acquisition

Detector: AV107
Serial Number: 49-037X7
Acquisition Start Date: 9/30/2014 7:30:39PM
Live Time: 960.00 min.
Real Time: 960.00 min.
Background Date: 9/19/2014 3:26:41PM
Background Info: Sample: ICB;AV107; Det: AV107; Spectrum #1; Sep-19-2014 15:26

Calibration Name: IC-9885;AV107-20140501
Calibration Date: 5/1/2014 5:54:04PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 25.60% +/- 0.38% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = Th2007_ROI
Decay Correction: 9/30/2014 7:29:07PM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Thorium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
Th-232	3999.0	4,010.0	-11.0	3743.0	4072.0	10.7	100.2	2	0.0000	2.00	0.008	DPM/mL
Th-230	4688.0	4,687.5	0.5	4446.0	4717.0	10.1	99.7	5	1.0000	4.03	0.016	DPM/mL
Th-229	4848.0	4,845.3	2.7	4717.0	5119.0	18.0	99.8	1	1.0000	0.03	0.000	DPM/mL
Th-228	5420.0	5,423.3	-3.3	5119.0	5493.0	20.4	99.8	4	2.0000	2.00	0.008	DPM/mL

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
11:10:49PM 10/1/2014

Sample

Sample Name: Verification 3
SampleType: Sample
:
Sample Collection Date:

Spectrum #1 Analysis #1
Sample Volume : 1.0000mL
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: U-232_00028_Th_Clean
AnalysisID: 621984

Analyst: 60040

Tracer

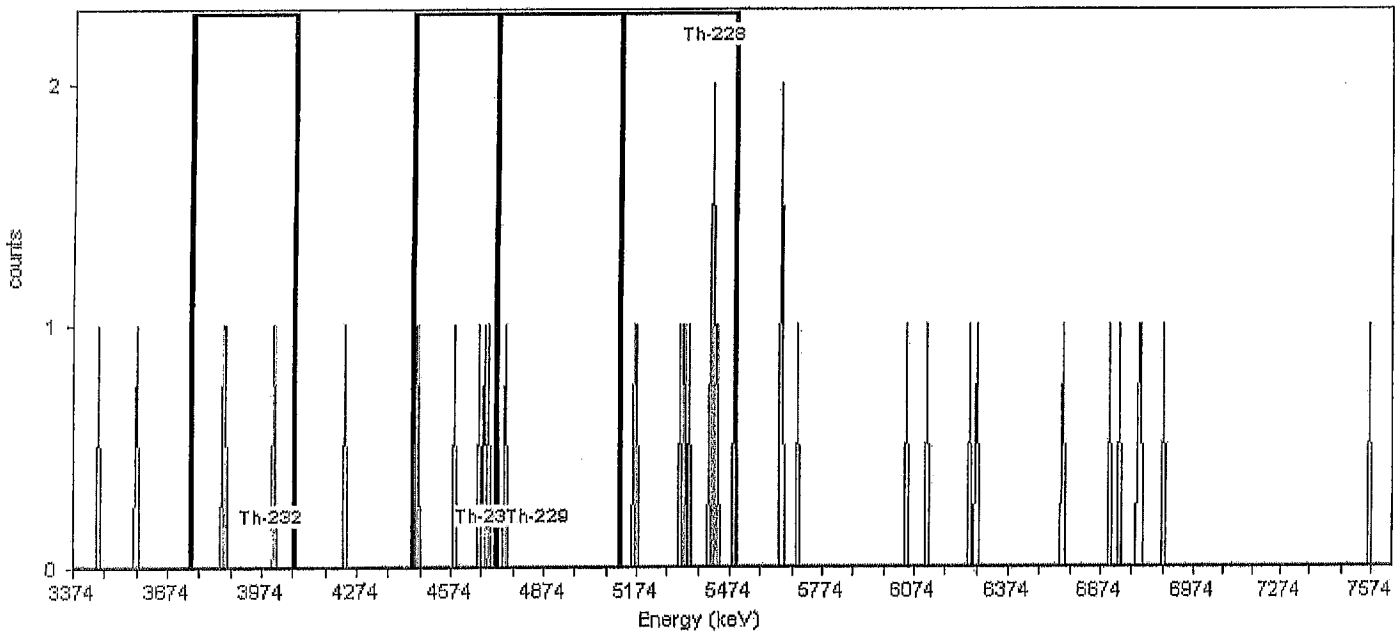
Tracer Name: Undefined
Tracer Activity:
Tracer Ref. Date:

Tracer Nuclide: External Recovery
Tracer Recovery: 100.00%

Acquisition

Detector: AV108
Serial Number: 49-037W1
Acquisition Start Date: 9/30/2014 7:30:41PM
Live Time: 960.00 min.
Real Time: 960.00 min.
Background Date: 9/19/2014 3:26:42PM
Background Info: Sample: ICB;AV108; Det: AV108; Spectrum #1; Sep-19-2014 15:26

Calibration Name: IC-9886;AV108-20140501
Calibration Date: 5/1/2014 5:54:10PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 26.31% +/- 0.35% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = Th2007_ROI
Decay Correction: 9/30/2014 7:29:07PM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Thorium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
Th-232	3999.0	4,010.0	-11.0	3743.0	4072.0	44.6	100.2	3	3.0000	0.00	0.000	DPM/mL
Th-230	4688.0	4,687.5	0.5	4446.0	4717.0	10.9	99.7	5	2.0310	2.97	0.012	DPM/mL
Th-229	4848.0	4,845.3	2.7	4717.0	5119.0	34.6	99.8	1	1.0310	-0.03	0.000	DPM/mL
Th-228	5420.0	5,423.3	-3.3	5119.0	5493.0	75.9	99.8	11	4.0000	7.00	0.028	DPM/mL

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

U-232 clean verification

Actinide Prep

Batch No. : —

Balance ID : —

No.	Sample Number	Aliquot (g / mL)	Crucible ID	Dilution
103 1	verification-1	0.1	102	
104 2	2	1	107	
105 3	3	1	108	
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				

Note: If a section below is not used, marked the N/A box and initial & date next to the N/A. i.e. Mark the N/A box if a tracer is not added to the sample(s) then initial and date next to the N/A.

Tracer ☐ N/A — Initials / Date

Isotope : UNAT
Std Sol'n No. : UNAT Spike -00001
Vol (mL) : 0.1
Ref Activity (dpm/mL) : 234- 70.691 / 235- 3.370 / 238- 72.264
Act Ref Date : 03-30-08

Samples Spiked and Traced By: Initials / Date

Verification Signature & Date: Initials / Date

LCS Standard ☐ N/A — Initials / Date

Isotope : U-232 clean
Std Sol'n ID. : U-232-00028
Vol (mL) : 0.1
Ref Activity (dpm/mL) : 82.245165
Act Ref Date : 08-25-11

SOP's applied in preparing these samples. Mark box to left for all that apply:

☐ ST-RC-0003 Rev.	☐ ST-RC-0040 Rev.	☐ ST-RC-0110 Rev.
☐ ST-RC-0004 Rev.	☐ ST-RC-0041 Rev.	☐ ST-RC-0120 Rev.
☐ ST-RC-0014 Rev.	☐ ST-RC-0050 Rev.	☐ ST-RC-0232 Rev.
☐ ST-RC-0020 Rev.	☐ ST-RC-0090 Rev.	☐ ST-RC-0238 Rev.
☐ ST-RC-0021 Rev.	☐ ST-RC-0100 Rev.	☐ ST-RC-0240 Rev.
		☐ ST-RC-0241 Rev.
		☐ ST-RC-0242 Rev.
		☐ ST-RC-5016 Rev.

Isotope(s)

αβ ☐	Iso Pu ☐	Tc-99 ☐	Iso Cm ☐
Iso Am ☐	Ra ☐	Iso Th ☐	Pu-241 ☐
KPA ☐	Sr ☐	Iso U ☒	Th-229 ☐
Np ☐	TAR ☐	C-14 ☐	Cl-36 ☐

Count Time	Matrix
Long Count ☒	Soil ☐
Short Count ☐	H_2O ☐

Prepared By : SNB
Date : 9-25-14

Reviewed by: _____
Date: _____

\\Slsvr01\RAD\MasterForms\RAD-0045 Rev(3)

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Reagent ID: U-232_00028

		Expiration Date:	05/11/2015
Description:	U-232 Clean Tracer	Laboratory:	TestAmerica St. Louis
No. of Bottles:	1	Prepared By:	Bernsen, Sarah C
Storage Location:	RAD Actinide STDs	Solvent:	DI Water
Reagent Volume:	250.000 mL	Solvent Lot:	0
Creation Date:	09/23/2014		
Container(s):	456736		
Comment:	Prepared according to SOP ST-RC-0244, Rev.16 section 7.28 to different volume. 2 mL of parent to ~100 mL, 3g potassium sulfate, pH adjusted with 2M sulfuric acid. 25 mL of 1% lead nitrate. pH checked. Final volume 250 mL (instead of 100 mL).		

Reagent Analyte Information

Analyte	Source ID	Source Exp. Date	Source Conc.	Source Conc. Units	Final Conc.	Final Conc. Units
U-232	U-232_00009	08/25/2061	10280.70700	dpm/mL	82.24566	dpm/mL

Source Reagents

Reagent	Description	Type	Expiration	Vendor	Vendor Lot #	Vendor Cat Lot #	Volume Used	Volume Units
U-232_00009	U-232 Parent		08/25/61				2.00000	mL

Sequential Thorium, Plutonium and Uranium via TEVA/UTEVA ST-RC-0242

Batch: U232 Clean

MB 9/26

All rinses should flow at 1 mL/minute (only 3M HNO_3 may be done at 3 mL/minute)

*only necessary when analyzing for *Pu*

TEVA lot: TES214G

UTEVA lot: UTB214D

*11.5.4 To samples, add 1mL ascorbic acid solution Place in hot water bath for 5 minutes — COMPLETED ☐

*11.5.5 To samples, add 1mL $NaNO_2$ solution Place in hot water bath for 5 minutes — COMPLETED ☐

*11.5.6 Cold water bath until samples reach room temperature

11.5.2 Stack TEVA on top of UTEVA cartridge

11.5.3 5mL 3M HNO_3 — COMPLETED ☐

11.5.7 Load sample

11.5.8 20mL 3M HNO_3 — COMPLETED ☑

11.59 Split cartridges TEVA UTEVA

11.5.10-11.5.11 Elute *Th* into clean tube using 20mL 9M HCl — COMPLETED ☑

11.5.12 5mL 6M HCl into *Th* tube — COMPLETED ☐

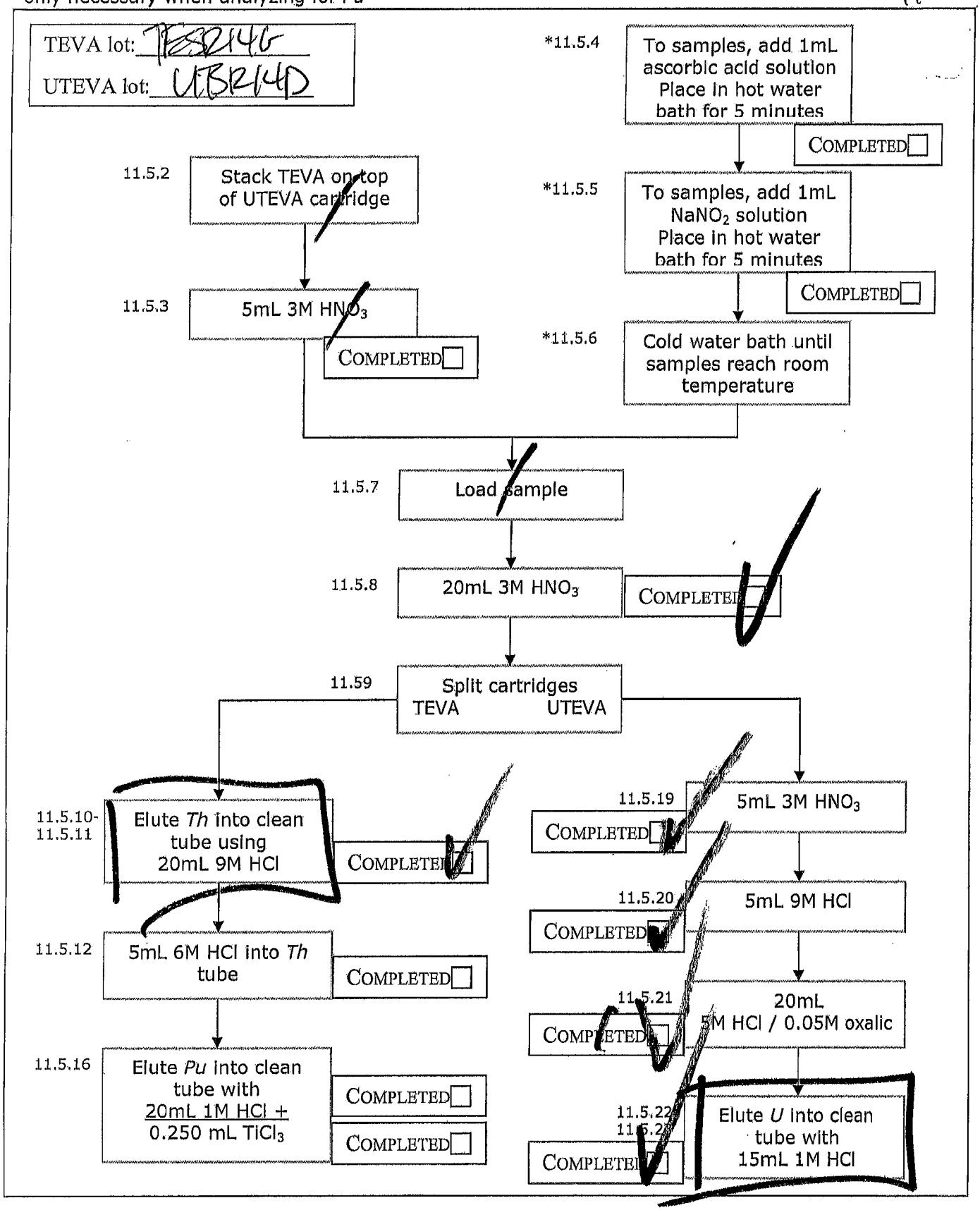
11.5.16 Elute *Pu* into clean tube with 20mL 1M HCl + 0.250 mL $TiCl_3$ — COMPLETED ☐ COMPLETED ☐

11.5.19 5mL 3M HNO_3 — COMPLETED ☑

11.5.20 5mL 9M HCl — COMPLETED ☑

11.5.21 20mL 5M HCl / 0.05M oxalic — COMPLETED ☑

11.5.22 11.5.23 Elute *U* into clean tube with 15mL 1M HCl — COMPLETED ☑



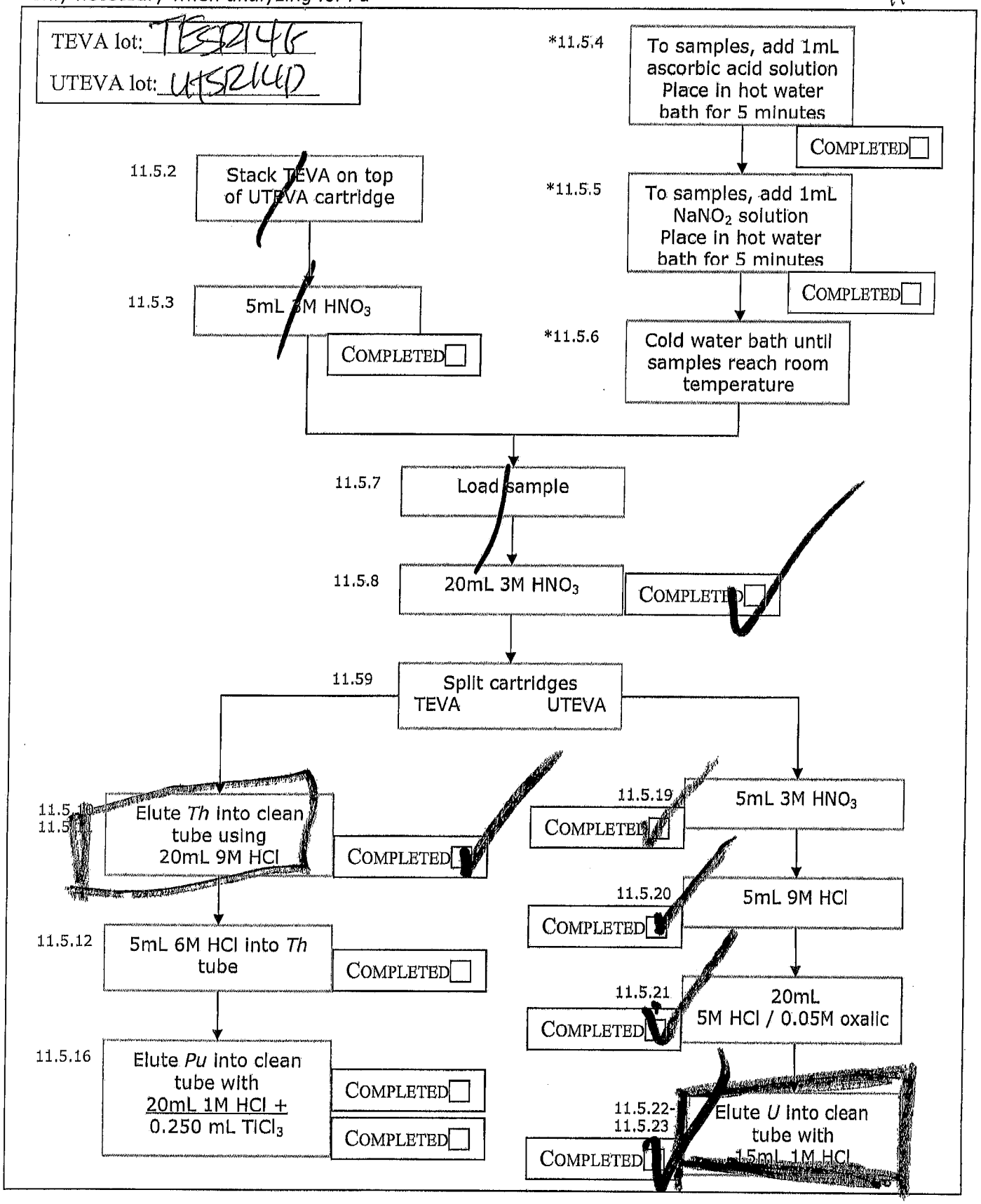
Form: RAD-0063, Revised 09/18/13

Sequential Thorium, Plutonium and Uranium via TEVA/UTEVA ST-RC-0242

Batch: U732 clean ver.

All rinses should flow at 1 mL/minute (only 3M HNO_3 may be done at 3 mL/minute)

*only necessary when analyzing for *Pu*



Reagent

UNAT Ampoule_00001

New Brunswick Laboratory
U.S. Department of Energy

Certificate of Analysis

CRM 145

Uranyl (Normal) Nitrate Assay and Isotopic Solution

Uranium Mass Fraction: **0.0101356 g U/g solution ± 0.0000011 g U/g solution**
[10.1356 mg U/g solution ± 0.0011 mg U/g solution]

	$^{234}U/^{238}U$	$^{235}U/^{238}U$
Atom Ratio:	**0.000052841**	**0.0072543**
Atom Ratio Uncertainty:	**0.000000082**	**0.0000040**

	^{234}U	^{235}U	^{238}U
Atom Percent:	**0.0052458**	**0.72017**	**99.27458**
Atom Percent Uncertainty:	**0.0000081**	**0.00039**	**0.00039**
Weight Percent:	**0.0051579**	**0.71114**	**99.28370**
Weight Percent Uncertainty:	**0.0000080**	**0.00038**	**0.00038**

Relative Atomic Weight: **238.028918**
Relative Atomic Weight Uncertainty: **0.000012**

Note: ^{233}U and ^{236}U were not detected. The detection limit of uranium ratios for the technique used is 5×10^{-9}.

This Certified Reference Material (CRM) is a uranium concentration and isotopic solution standard intended for use in calibration of and/or quality control for uranium analysis methods. Each unit of CRM 145 consists of approximately 20-mL of uranyl nitrate solution in 1M nitric acid, contained in a sealed glass ampoule.

NOTE: The vial should be handled under proper radiologically-controlled conditions at all times.

The certified uranium content value is based on the mass of high-purity metal dissolved and diluted to a known solution mass. The stated uranium concentration was calculated as the prepared value and verified experimentally by the NBL-modified Davies and Gray titration. The certified uranium isotopic composition and atomic weight is based upon measurements performed on multiple samples by two different measurement techniques on a Thermal Ionization Mass Spectrometer (TIMS), calibrated using CRM U030-A as primary comparator and CRM 129-A as a quality control sample. The isotopic values are shared with CRM 112-A, uranium (normal) metal standard which was the source of uranium used to produce the solutions.

RAD13-0018
UNAT Spike
marrss
None
Prep/Opened: 5/3/2013
Exp(1): 5/10/2014
Exp(2): 5/10/2014

All uncertainties for the certified values are expressed as expanded uncertainties (U) where $U = k*u_c$, where u_c is the

September 30, 2010
Argonne, Illinois

www.nbl.doe.gov

Jon Neuhoff, Director
New Brunswick Laboratory

(Revision of Certificate dated March 30, 2008)

127971
ID: UNAT_00008
Exp: 05/10/14 Prpd: SB Crt: 05/03/13
UNAT spike

combined standard uncertainty and the coverage factor k = 2. Uncertainties were determined according to the JCGM 100:2008 *Guide to the Expression of Uncertainty in Measurement*. The coverage factor of 2 was chosen to provide an approximate 95% level of confidence. The input quantities associated with the uranium content included uncertainties due to weighing, CRM 112-A purity, and buoyancy factors. The input quantities associated with the uranium isotopic composition included uncertainties from the certified value for CRM U030-A, measurement precision, and background corrections associated with the analytical techniques.

The CRM was produced by dissolving uranium metal in a single batch and container, with extensive mixing of the resultant solution followed by dispensation into individual bottles. Subsequent measurements of a random sampling of the total lot produced did not indicate any inhomogeneity in uranium concentration or isotopic composition. The minimum sample sizes taken from packaged units and measured were 30 mg U by titration and 1 μg U by TIMS. The NBL makes no recommendation as to the minimum sample size to be used to ensure concentration or isotopic homogeneity.

Users are cautioned that once the vial is opened, the uranium concentration and/or isotopic composition of the material may be affected by evaporative losses or environmental contamination. User's should take appropriate precautions to safeguard the material before, during and after use to ensure valid certificate values.

Recommended Procedure for Ampoule Handling and Dispensing of Solution

1. The ampoule contains a strongly acidic solution of uranium. Appropriate precautions should be taken.

2. Before opening the ampoule, ensure that any dried uranium or condensed liquid in the neck or body of the ampoule is re-dissolved into solution. This can be accomplished by inverting the ampoule repeatedly.

3. The glass ampoules are scored at the neck for ease of opening. However, glass burrs and fragments pose a cut hazard to anyone opening the ampoules. Appropriate precautions should be taken.

4. Lightly moisten the scored line on the neck with distilled water to help ensure a clean break at the score.

5. Because of the narrow neck of the ampoule it may be difficult or impossible to pour the solution out. Here is one possible method:

    a. Obtain approximately 12-cm length of plastic capillary tubing (e.g. i.d. 0f 0.1", o.d. of 0.16").
    b. Insert one end of the capillary tubing fully into the ampoule
    c. Fold the remaining length of tubing along the outside of the ampoule, ensuring that the tube is not crimped and will allow the free flow of air through the tube and into the ampoule.
    d. Holding the ampoule and tubing in one hand, and a beaker or dispensing bottle in another, invert the ampoule over the container allowing the solution to drain into it.
    e. The capillary tubing allows air to flow into the ampoule, eliminating the "airlock" created by the narrow neck of the open ampoule.

6. The user should be wary of evaporative losses once the ampoule is opened, and prevent uranium contamination of the sample. It is recommended that the entire solution be accurately weighed and aliquanted as soon as possible after opening the sample. Precautions should be taken (clean glass/plastic ware, air filtration, etc) to prevent uranium contamination of the CRM with subsequent perturbation of the isotopic composition.

Reagent

UNAT_00009

St. Louis Radiological Standard Reverification Form

Standard ID Number: UNAT_00009
True Value = 70.69 DPM/L or g
Date Analyzed: 5/28/2014

Radionuclide: U-234

	Replicates	
#1	66.479	DPM/L or g
#2	72.6	DPM/L or g
#3	69.32	DPM/L or g

371928
ID: UNAT_00009
Exp: 05/28/15 Prpd: SCB Crl: 05/23/14
UNAT spike

Mean = 69.46633

1 sigma = 3.063123 1.96 sigma = 6.00372

True Value minus 5% = 67.1555 (True Value - 5%)
True Value plus 5% = 74.2245 (True Value + 5%)

Accuracy:
Mean value within 5% of Certified (True) Value? **Yes** **(Acceptance Criteria)**

Precision:
1.96 sigma Value Within 10% of Mean Value? **Yes** **(Acceptance Criteria)**

Standard Reverification Acceptable? **Yes**

Note: Criteria for reverification of radiological standards is taken from the DOE QSAS and LANL Statements of Work

Reviewed By/Date: Micha L. Korrinhizer 5/29/2014

SOP Reference: STL-QA-0002, Current Revision

St. Louis Radiological Standard Reverification Form

Standard ID Number: UNAT_00009
True Value = 3.37 DPM/L or g
Date Analyzed: 5/28/2014

Radionuclide: U-235

	Replicates	
#1	4.075	DPM/L or g
#2	3.273	DPM/L or g
#3	4.276	DPM/L or g

Mean = 3.874667

1 sigma = 0.530662 1.96 sigma = 1.040098

True Value minus 5% = 3.2015 (True Value - 5%)
True Value plus 5% = 3.5385 (True Value + 5%)

Accuracy:
Mean value within 5% of Certified (True) Value? **No** **(Acceptance Criteria)**

Precision:
1.96 sigma Value Within 10% of Mean Value? **No** **(Acceptance Criteria)**

Standard Reverification Acceptable? **No**

Note: Criteria for reverification of radiological standards is taken from the DOE QSAS and LANL Statements of Work

Reviewed By/Date: Micha L. Korrinhizer 5/29/2014

SOP Reference: STL-QA-0002, Current Revision

St. Louis Radiological Standard Reverification Form

Standard ID Number: UNAT_00009
True Value = 72.264 DPM/L or g
Date Analyzed: 5/28/2014

Radionuclide: U-238

	Replicates	
#1	69.37	DPM/L or g
#2	73.023	DPM/L or g
#3	73.168	DPM/L or g

Mean = 71.85367

1 sigma = 2.15214 1.96 sigma = 4.218194

True Value minus 5% = 68.6508 (True Value - 5%)
True Value plus 5% = 75.8772 (True Value + 5%)

Accuracy:
Mean value within 5% of Certified (True) Value? **Yes** **(Acceptance Criteria)**

Precision:
1.96 sigma Value Within 10% of Mean Value? **Yes** **(Acceptance Criteria)**

Standard Reverification Acceptable? **Yes**

Note: Criteria for reverification of radiological standards is taken from the DOE QSAS and LANL Statements of Work

Reviewed By/Date: Micha L. Korrinhizer 5/29/2014

SOP Reference: STL-QA-0002, Current Revision

UNIAT Spike Verification

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

960mins.
LL

Actinide Prep

Batch No. : —

Balance ID : _____

No.	Sample Number	Aliquot (g / mL)	Crucible ID	Dilution
43 1	verification 1	0.1		
44 2	1 2	1		
45 3	3			
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				

Note: If a section below is not used, marked the N/A box and initial & date next to the N/A. i.e. Mark the N/A box if a tracer is not added to the sample(s) & put initial and date next to the N/A

Tracer ☐ N/A SUB 5/27/14 (Initials / Date)

Isotope : U-232
Std Sol'n No. : U-232-000210
Vol (mL) : 0.1
Ref Activity (dpm/mL) : 82.247
Act Ref Date : 08.25.11

Samples Spiked and Traced By: SUB 5/27/14 (Initials / Date)

Verification Signature & Date: MS 5/27/14 (Initials / Date)

LCS Standard ☐ N/A SUB 5/27/14 (Initials / Date)

Isotope : UNIAT
Std Sol'n ID. : UNIAT_000009
Vol (mL) : 0.1
Ref Activity (dpm/mL) : 234: 70.69 / 235: 3.370 / 238: 72.264
Act Ref Date : 03.30.09

SOP's applied in preparing these samples. Mark box to left for all that apply:

☐ ST-RC-0003 Rev.	☐ ST-RC-0040 Rev.	☐ ST-RC-0110 Rev.
☐ ST-RC-0004 Rev.	☐ ST-RC-0041 Rev.	☐ ST-RC-0120 Rev.
☐ ST-RC-0014 Rev.	☐ ST-RC-0050 Rev.	☐ ST-RC-0232 Rev.
☐ ST-RC-0020 Rev.	☐ ST-RC-0090 Rev.	☐ ST-RC-0238 Rev.
☐ ST-RC-0021 Rev.	☐ ST-RC-0100 Rev.	☐ ST-RC-0240 Rev.
		☐ ST-RC-0241 Rev.
		☐ ST-RC-0242 Rev.
		☐ ST-RC-5016 Rev.

Isotope(s)

αβ ☐	Iso Pu ☐	Tc-99 ☐	Iso Cm ☐
Iso Am ☐	Ra ☐	Iso Th ☐	Pu-241 ☐
KPA ☐	Sr ☐	Iso U ☑	Th-229 ☐
Np ☐	TAR ☐	C-14 ☐	Cl-36 ☐

Count Time	Matrix
Long Count ☐	Soil ☐
Short Count ☐	H_2O ☐

Prepared By : SUB
Date : 5/27/14

Reviewed by: MK
Date: 5/29/14

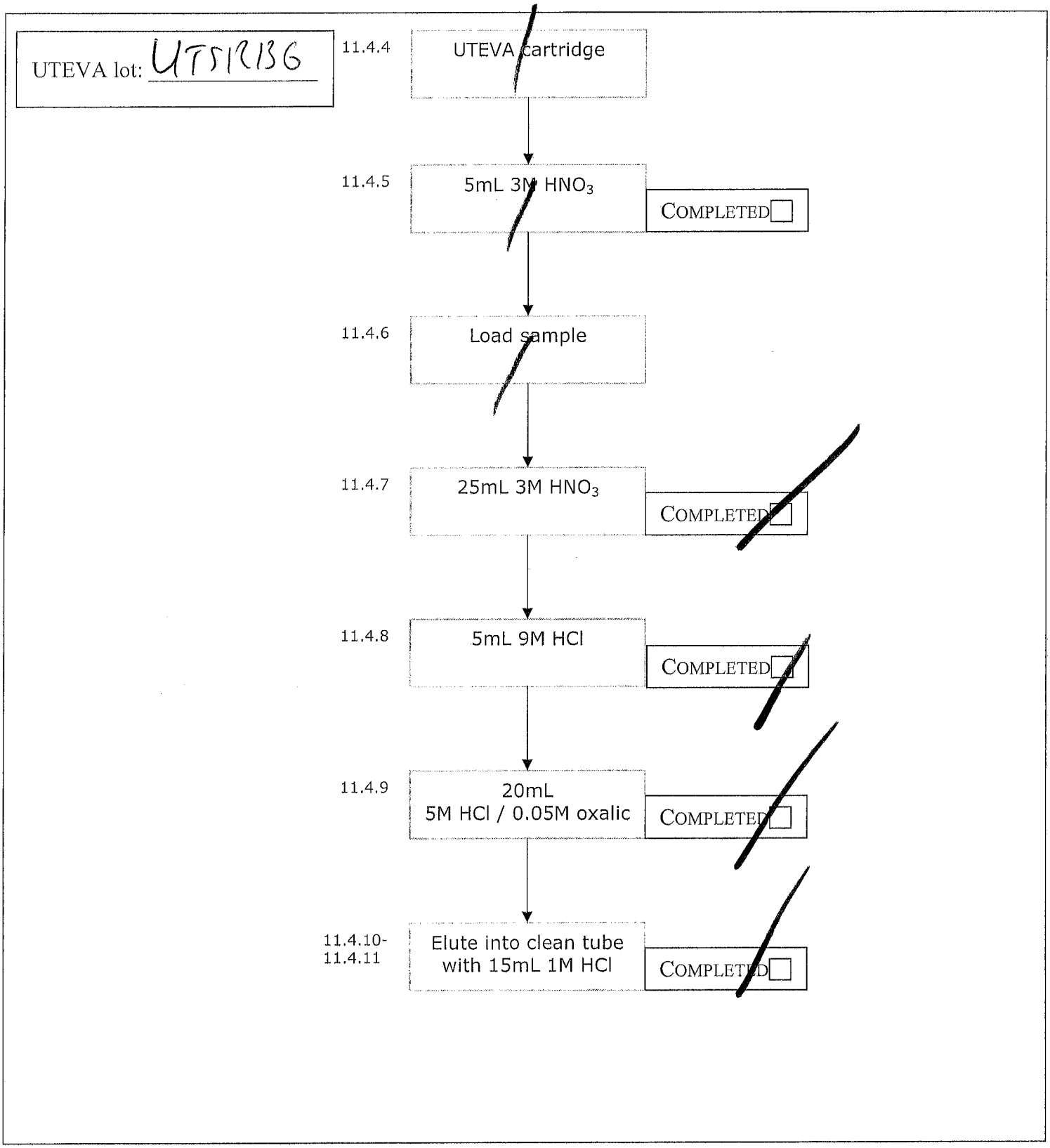
\\Slsvr01\RAD\MasterForms\RAD-0045 Rev(3)

Uranium only via UTEVA

Batch: U Verf

ST-RC-0238

*All rinses should flow at 1 mL/minute (only 3M HNO_3 may be done at 3 mL/minute)



TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

UNAT - 00009

Reagent ID: UNAT_00009

Description:	UNAT spike	Expiration Date:	05/23/2015
No. of Bottles:	1	Laboratory:	TestAmerica St. Louis
Storage Location:	RAD Actinide STDs	Prepared By:	Bernsen, Sarah C
Reagent Volume:	200.000 mL	Solvent:	1M HNO3
Creation Date:	05/23/2014	Solvent Lot:	n/a
Container(s):	371928		
Comment:			

Reagent Analyte Information

Analyte	Source ID	Source Exp. Date	Source Conc.	Source Conc. Units	Final Conc.	Final Conc. Units
U-234	UNAT Parent_00001	03/30/2058	706.91200	dpm/mL	70.69123	dpm/mL
U-235	UNAT Parent_00001	03/30/2058	33.70600	dpm/mL	3.37064	dpm/mL
U-238	UNAT Parent_00001	03/30/2058	722.65000	dpm/mL	72.26499	dpm/mL

Source Reagents

Reagent	Description	Type	Expiration	Vendor	Vendor Lot #	Vendor Cat Lot #	Volume Used	Volume Units
UNAT Parent_00001	UNAT Parent		03/30/58				20.00000	mL

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
8:28:03AM 5/29/2014

Sample

Sample Name: Verification-1
SampleType: Sample
:
Sample Collection Date:

Spectrum #1 Analysis #1
Sample Volume : 0.1000mL
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: UNAT_00009 Spike Ver
AnalysisID: 609171

Analyst: 60040

Tracer

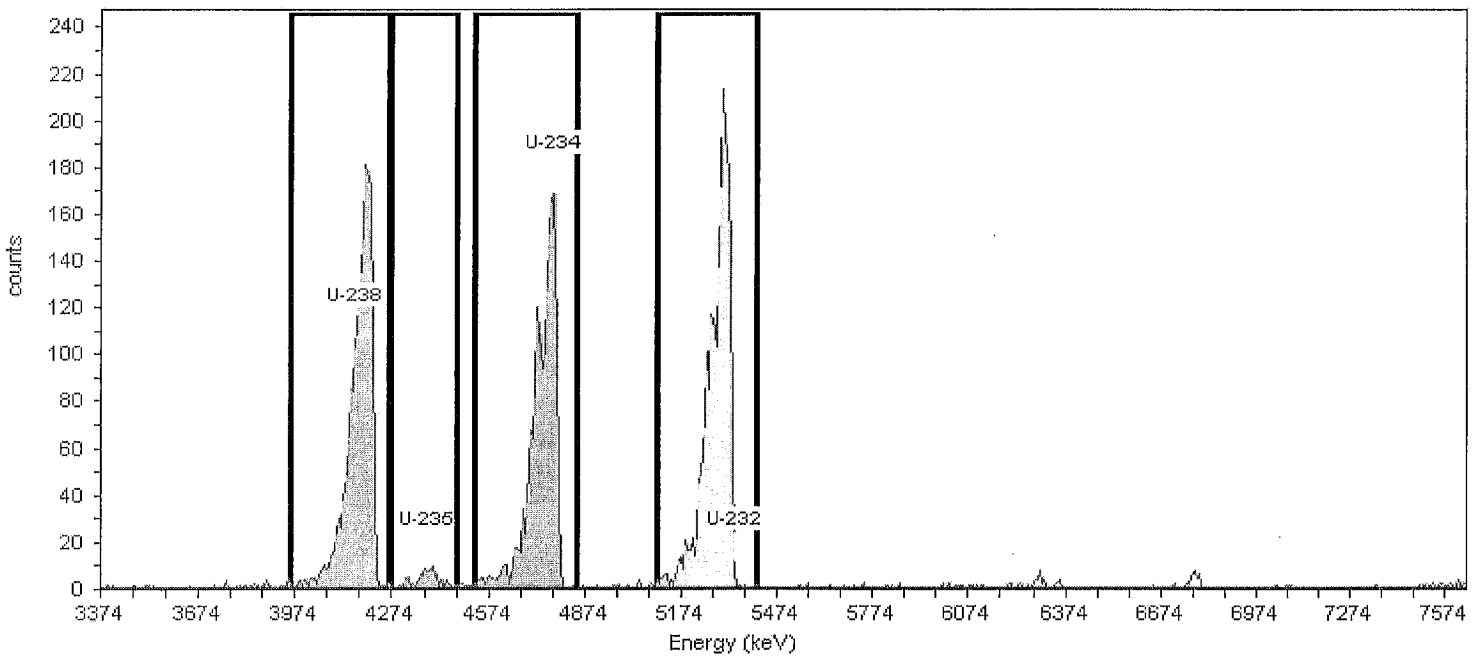
Tracer Name: U-232_00026
Tracer Activity: 82.25 DPM/mL x (Vol.)0.10 mL = 8.22 DPM
Tracer Ref. Date: 8/25/2011 11:00:51AM

Tracer Nuclide: U-232
Tracer Recovery: 99.08%

Acquisition

Detector: AV43
Serial Number: 49-190X4
Acquisition Start Date: 5/28/2014 4:07:16PM
Live Time: 960.00 min.
Real Time: 960.02 min.
Background Date: 5/15/2014 1:18:19AM
Background Info: Sample: ICB;AV43; Det: AV43; Spectrum #1; May-15-2014 01:18

Calibration Name: IC-9794;AV43-20140505
Calibration Date: 5/5/2014 10:09:47PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 25.74% +/- 0.32% TPU(2 sigma)



General Analysis

Analysis Method: ROI Analysis, Set Name = UROI
Decay Correction: 5/28/2014 4:04:57PM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Uranium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
U-238	4157.5	4,196.0	-38.5	3956.1	4261.9	65.7	100.0	1698	0.0000	1698.00	69.370	DPM/mL
U-235	4381.2	4,396.0	-14.8	4269.3	4470.7	54.6	80.2	80	0.0000	80.00	4.075	DPM/mL
U-234	4776.4	4,775.8	0.6	4530.3	4851.0	81.7	99.8	1625	1.0000	1624.00	66.479	DPM/mL
U-232	5343.2	5,320.3	22.9	5097.1	5410.3	72.8	100.1	1962	0.0000	1962.00	81.486	DPM/mL

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
8:28:17AM 5/29/2014

Sample

Sample Name: Verification-2
SampleType: Sample
:
Sample Collection Date:

Spectrum #1 Analysis #1
Sample Volume : 0.1000mL
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: UNAT_00009 Spike Ver
AnalysisID: 609172

Analyst: 60040

Tracer

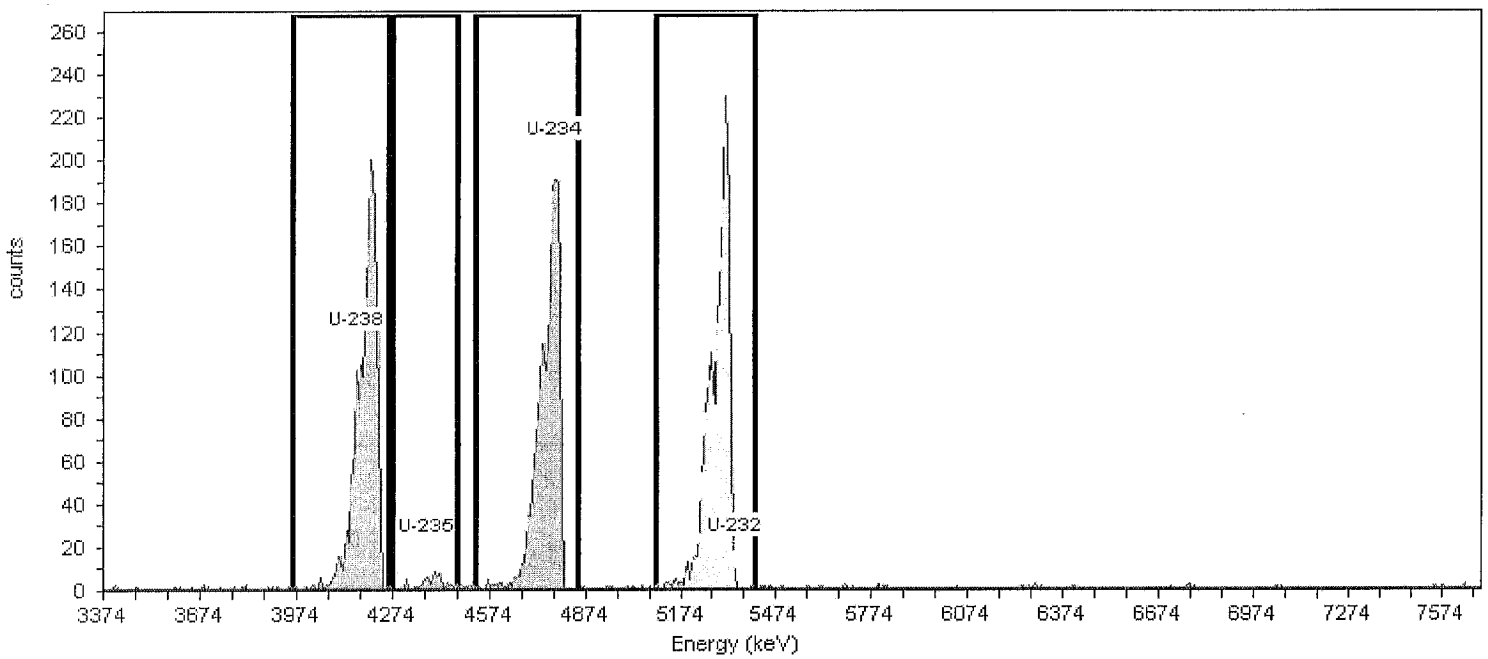
Tracer Name: U-232_00026
Tracer Activity: 82.25 DPM/mL x (Vol.)0.10 mL = 8.22 DPM
Tracer Ref. Date: 8/25/2011 11:00:51AM

Tracer Nuclide: U-232
Tracer Recovery: 90.45%

Acquisition

Detector: AV44
Serial Number: 50-051JJ1
Acquisition Start Date: 5/28/2014 4:07:17PM
Live Time: 960.00 min.
Real Time: 960.02 min.
Background Date: 5/15/2014 1:18:20AM
Background Info: Sample: ICB;AV44; Det: AV44; Spectrum #1; May-15-2014 01:18

Calibration Name: IC-9795;AV44-20140505
Calibration Date: 5/5/2014 10:09:57PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 26.32% +/- 0.35% TPU(2 sigma)



General Analysis

Analysis Method: ROI Analysis, Set Name = UROI
Decay Correction: 5/28/2014 4:04:57PM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Uranium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
U-238	4157.5	4,196.0	-38.5	3956.1	4261.9	53.8	100.0	1671	2.0000	1669.00	73.023	DPM/mL
U-235	4381.2	4,396.0	-14.8	4269.3	4470.7	52.6	80.2	61	1.0000	60.00	3.273	DPM/mL
U-234	4776.4	4,775.8	0.6	4530.3	4851.0	67.5	99.8	1659	3.0000	1656.00	72.600	DPM/mL
U-232	5343.2	5,320.3	22.9	5097.1	5410.3	63.4	100.1	1840	8.0000	1832.00	74.394	DPM/mL

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
8:28:26AM 5/29/2014

Sample

Sample Name: Verification-3
SampleType: Sample
:
Sample Collection Date:

Spectrum #1 Analysis #1
Sample Volume : 0.1000mL
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: UNAT_00009 Spike Ver
AnalysisID: 609173

Analyst: 60040

Tracer

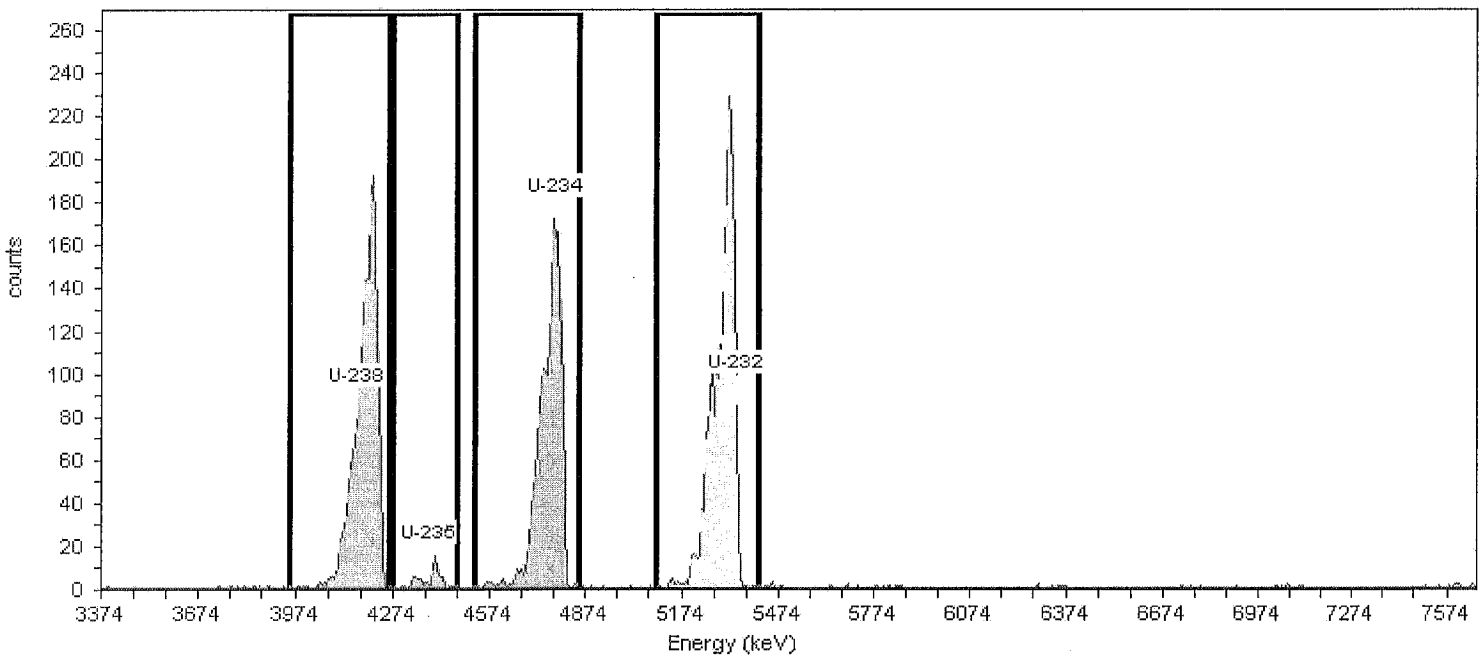
Tracer Name: U-232_00026
Tracer Activity: 82.25 DPM/mL x (Vol.)0.10 mL = 8.22 DPM
Tracer Ref. Date: 8/25/2011 11:00:51AM

Tracer Nuclide: U-232
Tracer Recovery: 93.24%

Acquisition

Detector: AV45
Serial Number: 48-158FF2
Acquisition Start Date: 5/28/2014 4:07:19PM
Live Time: 960.00 min.
Real Time: 960.02 min.
Background Date: 5/15/2014 1:18:21AM
Background Info: Sample: ICB;AV45; Det: AV45; Spectrum #1; May-15-2014 01:18

Calibration Name: IC-9817;AV45-20140505
Calibration Date: 5/5/2014 10:10:03PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 26.06% +/- 0.31% TPU(2 sigma)



General Analysis

Analysis Method: ROI Analysis, Set Name = UROI
Decay Correction: 5/28/2014 4:04:57PM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Uranium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
U-238	4157.5	4,196.0	-38.5	3956.1	4261.9	58.4	100.0	1710	3.0000	1707.00	73.168	DPM/mL
U-235	4381.2	4,396.0	-14.8	4269.3	4470.7	24.2	80.2	80	0.0000	80.00	4.276	DPM/mL
U-234	4776.4	4,775.8	0.6	4530.3	4851.0	72.2	99.8	1616	2.0000	1614.00	69.320	DPM/mL
U-232	5343.2	5,320.3	22.9	5097.1	5410.3	64.3	100.1	1875	5.0000	1870.00	76.687	DPM/mL

METALS

COVER PAGE
METALS

Lab Name: TestAmerica St. Louis Job Number: 160-9438-1

SDG No.:

Project: START Site in New Mexico

Client Sample ID	Lab Sample ID
MW358-20141113-21	160-9438-1
MW359-20141113-21	160-9438-2

Comments:

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: MW358-20141113-21 Lab Sample ID: 160-9438-1

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG ID.:

Matrix: Water Date Sampled: 11/13/2014 12:05

Reporting Basis: WET Date Received: 11/14/2014 09:20

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	ND	2000	220	ug/L			10	6010C
7440-36-0	Antimony	ND	100	37	ug/L			10	6010C
7440-38-2	Arsenic	ND	100	18	ug/L			10	6010C
7440-39-3	Barium	ND	500	21	ug/L			10	6010C
7440-42-8	Boron	350	500	72	ug/L	J		10	6010C
7440-41-7	Beryllium	ND	50	2.8	ug/L			10	6010C
7440-43-9	Cadmium	ND	50	3.4	ug/L			10	6010C
7440-70-2	Calcium	550000	10000	540	ug/L			10	6010C
7440-47-3	Chromium	ND	100	34	ug/L			10	6010C
7440-48-4	Cobalt	ND	500	27	ug/L			10	6010C
7440-50-8	Copper	ND	250	21	ug/L			10	6010C
7439-89-6	Iron	260	1000	130	ug/L	J		10	6010C
7439-92-1	Lead	12	100	6.0	ug/L	J	B	10	6010C
7439-95-4	Magnesium	160000	10000	510	ug/L			10	6010C
7439-96-5	Manganese	43	150	10	ug/L	J		10	6010C
7440-02-0	Nickel	ND	400	26	ug/L			10	6010C
7439-98-7	Molybdenum	ND	400	19	ug/L			10	6010C
7440-09-7	Potassium	ND	50000	4600	ug/L			10	6010C
7782-49-2	Selenium	ND	150	21	ug/L			10	6010C
7440-22-4	Silver	ND	100	9.9	ug/L			10	6010C
7723-14-0	Phosphorus	ND	2500	140	ug/L			10	6010C
7440-23-5	Sodium	270000	10000	1100	ug/L			10	6010C
7440-28-0	Thallium	ND	200	24	ug/L			10	6010C
7440-62-2	Vanadium	ND	500	44	ug/L			10	6010C
7440-66-6	Zinc	ND	200	83	ug/L			10	6010C
7440-21-3	Silicon	6900	4000	200	ug/L			10	6010C
7440-31-5	Tin	ND	1000	50	ug/L			10	6010C
7440-32-6	Titanium	18	200	13	ug/L	J		10	6010C
7440-61-1	Uranium	ND	5000	260	ug/L			10	6010C
7439-97-6	Mercury	ND	0.20	0.060	ug/L			1	7470A

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS - DISSOLVED

Client Sample ID: MW358-20141113-21 Lab Sample ID: 160-9438-1

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG ID.:

Matrix: Water Date Sampled: 11/13/2014 12:05

Reporting Basis: WET Date Received: 11/14/2014 09:20

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	ND	2000	220	ug/L			10	6010C
7440-36-0	Antimony	ND	100	37	ug/L			10	6010C
7440-38-2	Arsenic	20	100	18	ug/L	J		10	6010C
7440-39-3	Barium	ND	500	21	ug/L			10	6010C
7440-41-7	Beryllium	ND	50	2.8	ug/L			10	6010C
7440-42-8	Boron	320	500	72	ug/L	J		10	6010C
7440-43-9	Cadmium	ND	50	3.4	ug/L			10	6010C
7440-70-2	Calcium	520000	10000	540	ug/L			10	6010C
7440-47-3	Chromium	ND	100	34	ug/L			10	6010C
7440-48-4	Cobalt	ND	500	27	ug/L			10	6010C
7440-50-8	Copper	ND	250	21	ug/L			10	6010C
7439-89-6	Iron	ND	1000	130	ug/L			10	6010C
7439-92-1	Lead	8.0	100	6.0	ug/L	J		10	6010C
7439-95-4	Magnesium	130000	10000	510	ug/L			10	6010C
7439-96-5	Manganese	29	150	10	ug/L	J		10	6010C
7439-98-7	Molybdenum	ND	400	19	ug/L			10	6010C
7440-02-0	Nickel	ND	400	26	ug/L			10	6010C
7723-14-0	Phosphorus	ND	2500	140	ug/L			10	6010C
7440-09-7	Potassium	ND	50000	4600	ug/L			10	6010C
7782-49-2	Selenium	ND	150	21	ug/L			10	6010C
7440-21-3	Silicon	5600	4000	200	ug/L			10	6010C
7440-22-4	Silver	ND	100	9.9	ug/L			10	6010C
7440-23-5	Sodium	250000	10000	1100	ug/L			10	6010C
7440-28-0	Thallium	24	200	24	ug/L	J	B	10	6010C
7440-31-5	Tin	ND	1000	50	ug/L			10	6010C
7440-32-6	Titanium	ND	200	13	ug/L			10	6010C
7440-61-1	Uranium	ND	5000	260	ug/L			10	6010C
7440-62-2	Vanadium	ND	500	44	ug/L			10	6010C
7440-66-6	Zinc	ND	200	83	ug/L			10	6010C
7439-97-6	Mercury	0.12	0.20	0.060	ug/L	J		1	7470A

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: MW359-20141113-21 Lab Sample ID: 160-9438-2

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG ID.:

Matrix: Water Date Sampled: 11/13/2014 13:45

Reporting Basis: WET Date Received: 11/14/2014 09:20

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	410	2000	220	ug/L	J		10	6010C
7440-36-0	Antimony	ND	100	37	ug/L			10	6010C
7440-38-2	Arsenic	ND	100	18	ug/L			10	6010C
7440-39-3	Barium	ND	500	21	ug/L			10	6010C
7440-42-8	Boron	260	500	72	ug/L	J		10	6010C
7440-41-7	Beryllium	ND	50	2.8	ug/L			10	6010C
7440-43-9	Cadmium	ND	50	3.4	ug/L			10	6010C
7440-70-2	Calcium	460000	10000	540	ug/L			10	6010C
7440-47-3	Chromium	ND	100	34	ug/L			10	6010C
7440-48-4	Cobalt	ND	500	27	ug/L			10	6010C
7440-50-8	Copper	28	250	21	ug/L	J		10	6010C
7439-89-6	Iron	460	1000	130	ug/L	J		10	6010C
7439-92-1	Lead	16	100	6.0	ug/L	J	B	10	6010C
7439-95-4	Magnesium	210000	10000	510	ug/L			10	6010C
7439-96-5	Manganese	150	150	10	ug/L			10	6010C
7440-02-0	Nickel	ND	400	26	ug/L			10	6010C
7439-98-7	Molybdenum	ND	400	19	ug/L			10	6010C
7440-09-7	Potassium	6200	50000	4600	ug/L	J		10	6010C
7782-49-2	Selenium	ND	150	21	ug/L			10	6010C
7440-22-4	Silver	ND	100	9.9	ug/L			10	6010C
7723-14-0	Phosphorus	ND	2500	140	ug/L			10	6010C
7440-23-5	Sodium	330000	10000	1100	ug/L			10	6010C
7440-28-0	Thallium	ND	200	24	ug/L			10	6010C
7440-62-2	Vanadium	ND	500	44	ug/L			10	6010C
7440-66-6	Zinc	ND	200	83	ug/L			10	6010C
7440-21-3	Silicon	4500	4000	200	ug/L			10	6010C
7440-31-5	Tin	ND	1000	50	ug/L			10	6010C
7440-32-6	Titanium	18	200	13	ug/L	J		10	6010C
7440-61-1	Uranium	ND	5000	260	ug/L			10	6010C
7439-97-6	Mercury	ND	0.20	0.060	ug/L			1	7470A

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS - DISSOLVED

Client Sample ID: MW359-20141113-21 Lab Sample ID: 160-9438-2

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG ID.:

Matrix: Water Date Sampled: 11/13/2014 13:45

Reporting Basis: WET Date Received: 11/14/2014 09:20

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	ND	2000	220	ug/L			10	6010C
7440-36-0	Antimony	ND	100	37	ug/L			10	6010C
7440-38-2	Arsenic	24	100	18	ug/L	J		10	6010C
7440-39-3	Barium	ND	500	21	ug/L			10	6010C
7440-41-7	Beryllium	ND	50	2.8	ug/L			10	6010C
7440-42-8	Boron	300	500	72	ug/L	J		10	6010C
7440-43-9	Cadmium	ND	50	3.4	ug/L			10	6010C
7440-70-2	Calcium	470000	10000	540	ug/L			10	6010C
7440-47-3	Chromium	ND	100	34	ug/L			10	6010C
7440-48-4	Cobalt	ND	500	27	ug/L			10	6010C
7440-50-8	Copper	ND	250	21	ug/L			10	6010C
7439-89-6	Iron	130	1000	130	ug/L	J		10	6010C
7439-92-1	Lead	ND	100	6.0	ug/L			10	6010C
7439-95-4	Magnesium	220000	10000	510	ug/L			10	6010C
7439-96-5	Manganese	110	150	10	ug/L	J		10	6010C
7439-98-7	Molybdenum	ND	400	19	ug/L			10	6010C
7440-02-0	Nickel	ND	400	26	ug/L			10	6010C
7723-14-0	Phosphorus	ND	2500	140	ug/L			10	6010C
7440-09-7	Potassium	5800	50000	4600	ug/L	J		10	6010C
7782-49-2	Selenium	ND	150	21	ug/L			10	6010C
7440-21-3	Silicon	3800	4000	200	ug/L	J		10	6010C
7440-22-4	Silver	ND	100	9.9	ug/L			10	6010C
7440-23-5	Sodium	350000	10000	1100	ug/L			10	6010C
7440-28-0	Thallium	28	200	24	ug/L	J	B	10	6010C
7440-31-5	Tin	ND	1000	50	ug/L			10	6010C
7440-32-6	Titanium	22	200	13	ug/L	J		10	6010C
7440-61-1	Uranium	ND	5000	260	ug/L			10	6010C
7440-62-2	Vanadium	ND	500	44	ug/L			10	6010C
7440-66-6	Zinc	ND	200	83	ug/L			10	6010C
7439-97-6	Mercury	ND	0.20	0.060	ug/L			1	7470A

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

ICV Source: ICP ICV_00015 Concentration Units: ug/L

CCV Source: ICP CAL2/CCV_00033

Analyte	ICV 160-161515/5 12/05/2014 12:26				CCV 160-161515/11 12/05/2014 12:49				CCV 160-161515/37 12/05/2014 14:50			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Aluminum	49300		50000	99	49300		50000	99	48500		50000	97
Antimony	988		1000	99	988		1000	99	1030		1000	103
Arsenic	4820		5000	96	4980		5000	100	5210		5000	104
Barium	4900		5000	98	4970		5000	99	4910		5000	98
Beryllium	4880		5000	98	5050		5000	101	4960		5000	99
Boron	5000		5000	100	5010		5000	100	4880		5000	98
Cadmium	4930		5000	99	4970		5000	99	5180		5000	104
Calcium	50300		50000	101	50300		50000	101	52300		50000	105
Chromium	5010		5000	100	5030		5000	101	5210		5000	104
Cobalt	5050		5000	101	5030		5000	101	5250		5000	105
Copper	4930		5000	99	4970		5000	99	5180		5000	104
Iron	49700		50000	99	50100		50000	100	50400		50000	101
Lead	5010		5000	100	5060		5000	101	5310		5000	106
Magnesium	48100		50000	96	49200		50000	98	49800		50000	100
Manganese	4920		5000	98	5010		5000	100	5020		5000	100
Molybdenum	1020		1000	102	996		1000	100	1050		1000	105
Nickel	4960		5000	99	5050		5000	101	5280		5000	106
Phosphorus	5160		5000	103	50900		50000	102	53100		50000	106
Potassium	49400		50000	99	50000		50000	100	49400		50000	99
Selenium	974		1000	97	993		1000	99	1040		1000	104
Silicon	5190		5000	104	4930		5000	99	4890		5000	98
Silver	973		1000	97	980		1000	98	996		1000	100
Sodium	48700		50000	97	50000		50000	100	48300		50000	97
Thallium	999		1000	100	1020		1000	102	1060		1000	106
Tin	4970		5000	99	5040		5000	101	5280		5000	106
Titanium	4980		5000	100	4990		5000	100	4950		5000	99
Uranium	5020		5000	100	4990		5000	100	5110		5000	102
Vanadium	4790		5000	96	5000		5000	100	4970		5000	99
Zinc	4930		5000	99	5000		5000	100	5230		5000	105

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

ICV Source: ICP ICV_00015 Concentration Units: ug/L

CCV Source: ICP CAL2/CCV_00033

Analyte	CCV 160-161515/49 12/05/2014 15:37				CCV 160-161515/61 12/05/2014 16:22							
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Aluminum	47900		50000	96	46900		50000	94				
Antimony	1000		1000	100	964		1000	96				
Arsenic	5050		5000	101	4880		5000	98				
Barium	4750		5000	95	4700		5000	94				
Beryllium	4920		5000	98	4760		5000	95				
Boron	4860		5000	97	4750		5000	95				
Cadmium	5060		5000	101	4880		5000	98				
Calcium	51400		50000	103	50500		50000	101				
Chromium	5160		5000	103	4970		5000	99				
Cobalt	5120		5000	102	4980		5000	100				
Copper	5050		5000	101	4850		5000	97				
Iron	49900		50000	100	48600		50000	97				
Lead	5180		5000	104	5030		5000	101				
Magnesium	49800		50000	100	48900		50000	98				
Manganese	4970		5000	99	4870		5000	97				
Molybdenum	1020		1000	102	985		1000	98				
Nickel	5150		5000	103	5010		5000	100				
Phosphorus	51600		50000	103	50300		50000	101				
Potassium	49100		50000	98	48000		50000	96				
Selenium	1000		1000	100	971		1000	97				
Silicon	4840		5000	97	4730		5000	95				
Silver	987		1000	99	952		1000	95				
Sodium	48300		50000	97	47400		50000	95				
Thallium	1040		1000	104	1010		1000	101				
Tin	5150		5000	103	5020		5000	100				
Titanium	4900		5000	98	4780		5000	96				
Uranium	5080		5000	102	4840		5000	97				
Vanadium	4920		5000	98	4830		5000	97				
Zinc	5090		5000	102	4930		5000	99				

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

ICV Source: ICP ICV_00015 Concentration Units: ug/L

CCV Source: ICP CAL2/CCV_00033

Analyte	ICV 160-162455/5 12/10/2014 08:53				CCV 160-162455/11 12/10/2014 09:16				CCV 160-162455/23 12/10/2014 10:02			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Aluminum	49400		50000	99	50000		50000	100	50200		50000	100
Antimony	1020		1000	102	1020		1000	102	1030		1000	103
Arsenic	4990		5000	100	5120		5000	102	5110		5000	102
Barium	5010		5000	100	5090		5000	102	5090		5000	102
Beryllium	5040		5000	101	5120		5000	102	5120		5000	102
Boron	5040		5000	101	5070		5000	101	5060		5000	101
Cadmium	5070		5000	101	5150		5000	103	5160		5000	103
Calcium	52600		50000	105	52400		50000	105	52200		50000	104
Chromium	5040		5000	101	5150		5000	103	5210		5000	104
Cobalt	5210		5000	104	5200		5000	104	5200		5000	104
Copper	5050		5000	101	5150		5000	103	5170		5000	103
Iron	49700		50000	99	50900		50000	102	50700		50000	101
Lead	5150		5000	103	5180		5000	104	5210		5000	104
Magnesium	49200		50000	98	50000		50000	100	50000		50000	100
Manganese	4930		5000	99	5050		5000	101	5070		5000	101
Molybdenum	1040		1000	104	1040		1000	104	1040		1000	104
Nickel	5120		5000	102	5210		5000	104	5210		5000	104
Phosphorus	5340		5000	107	52400		50000	105	52300		50000	105
Potassium	49300		50000	99	50300		50000	101	50700		50000	101
Selenium	1020		1000	102	1020		1000	102	1020		1000	102
Silicon	5230		5000	105	4980		5000	100	5010		5000	100
Silver	984		1000	98	1010		1000	101	1020		1000	102
Sodium	49300		50000	99	50900		50000	102	51100		50000	102
Thallium	1030		1000	103	1050		1000	105	1050		1000	105
Tin	5110		5000	102	5170		5000	103	5180		5000	104
Titanium	5000		5000	100	5040		5000	101	5070		5000	101
Uranium	4960		5000	99	5090		5000	102	5160		5000	103
Vanadium	4830		5000	97	5080		5000	102	5080		5000	102
Zinc	5090		5000	102	5180		5000	104	5180		5000	104

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

ICV Source: Hg QC Int._00445 Concentration Units: ug/L

CCV Source: Hg QC Int._00445

Analyte	ICV 160-158460/7 11/19/2014 14:17				CCV 160-158460/31 11/19/2014 15:16				CCV 160-158460/42 11/19/2014 15:46			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Mercury	5.07		5.00	101	5.04		5.00	101	4.66		5.00	93

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

ICV Source: Hg QC Int._00445 Concentration Units: ug/L

CCV Source: Hg QC Int._00445

Analyte	CCV 160-158460/51 11/19/2014 16:10				CCV 160-158460/53 11/20/2014 07:07				CCV 160-158460/57 11/20/2014 07:54			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Mercury	4.26		5.00	85	4.98		5.00	100	4.82		5.00	96

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2B-IN
CRQL CHECK STANDARD
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Method: 6010C Instrument ID: ICP6500

Lab Sample ID: CRI 160-161515/7 Concentration Units: ug/L

CRQL Check Standard Source: ICP CAL1/LLC_00020

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Aluminum	200	200		100	70-130
Antimony	10.0	11.0		110	70-130
Arsenic	10.0	10.4		104	70-130
Barium	50.0	49.4	J	99	70-130
Beryllium	5.00	5.20		104	70-130
Boron	50.0	56.6		113	70-130
Cadmium	5.00	5.20		104	70-130
Calcium	1000	1130		113	70-130
Chromium	10.0	10.4		104	70-130
Cobalt	50.0	55.4		111	70-130
Copper	25.0	26.8		107	70-130
Iron	100	104		104	70-130
Lead	10.0	12.1		121	70-130
Magnesium	1000	968	J	97	70-130
Manganese	15.0	15.2		101	70-130
Molybdenum	40.0	42.5		106	70-130
Nickel	40.0	44.8		112	70-130
Potassium	5000	4920	J	98	70-130
Selenium	15.0	15.5		103	70-130
Phosphorus	250	259		104	70-130
Silver	10.0	10.1		101	70-130
Sodium	1000	960	J	96	70-130
Thallium	20.0	23.0		115	70-130
Silicon	400	388	J	97	70-130
Tin	100	108		108	70-130
Titanium	20.0	19.8	J	99	70-130
Vanadium	50.0	51.2		102	70-130
Uranium	500	538		108	70-130
Zinc	20.0	21.4		107	70-130

Lab Sample ID: CRI 160-162455/7 Concentration Units: ug/L

CRQL Check Standard Source: ICP CAL1/LLC_00020

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Aluminum	200	201		100	70-130

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IIB-IN

2B-IN
CRQL CHECK STANDARD
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Method: 6010C Instrument ID: ICP6500

Lab Sample ID: CRI 160-162455/7 Concentration Units: ug/L

CRQL Check Standard Source: ICP CAL1/LLC_00020

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Antimony	10.0	9.40	J	94	70-130
Arsenic	10.0	10.5		105	70-130
Barium	50.0	50.4		101	70-130
Beryllium	5.00	5.10		102	70-130
Boron	50.0	55.0		110	70-130
Cadmium	5.00	4.80	J	96	70-130
Calcium	1000	1080		108	70-130
Chromium	10.0	8.80	J	88	70-130
Cobalt	50.0	53.1		106	70-130
Copper	25.0	24.2	J	97	70-130
Iron	100	101		101	70-130
Lead	10.0	11.5		115	70-130
Magnesium	1000	974	J	97	70-130
Manganese	15.0	15.0		100	70-130
Molybdenum	40.0	40.5		101	70-130
Nickel	40.0	42.6		107	70-130
Potassium	5000	4880	J	98	70-130
Selenium	15.0	14.2	J	95	70-130
Phosphorus	250	245	J	98	70-130
Silver	10.0	10.0		100	70-130
Sodium	1000	983	J	98	70-130
Thallium	20.0	24.0		120	70-130
Silicon	400	389	J	97	70-130
Tin	100	103		103	70-130
Titanium	20.0	18.8	J	94	70-130
Vanadium	50.0	49.9	J	100	70-130
Uranium	500	480	J	96	70-130
Zinc	20.0	20.3		102	70-130

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IIB-IN

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Concentration Units: ug/L

Analyte	RL	ICB 160-161515/6 12/05/2014 12:30		CCB 160-161515/12 12/05/2014 12:53		CCB 160-161515/38 12/05/2014 14:54		CCB 160-161515/50 12/05/2014 15:40	
		Found	C	Found	C	Found	C	Found	C
Aluminum	200	ND		ND		ND		ND	
Antimony	10	ND		ND		ND		ND	
Arsenic	10	ND		ND		ND		ND	
Barium	50	ND		ND		ND		ND	
Beryllium	5.0	0.300	J	0.400	J	0.300	J	0.500	J
Boron	50	17.9	J	17.3	J	12.3	J	11.1	J
Cadmium	5.0	ND		ND		ND		ND	
Calcium	1000	ND		ND		ND		ND	
Chromium	10	ND		ND		ND		ND	
Cobalt	50	ND		ND		ND		ND	
Copper	25	2.70	J	ND		ND		ND	
Iron	100	ND		ND		ND		ND	
Lead	10	0.600	J	1.40	J	0.900	J	1.00	J
Magnesium	1000	ND		ND		ND		ND	
Manganese	15	ND		ND		ND		ND	
Molybdenum	40	ND		ND		ND		ND	
Nickel	40	ND		ND		ND		ND	
Phosphorus	250	ND		ND		ND		ND	
Potassium	5000	ND		ND		ND		ND	
Selenium	15	ND		ND		ND		ND	
Silicon	400	ND		ND		ND		ND	
Silver	10	ND		ND		ND		ND	
Sodium	1000	ND		ND		ND		ND	
Thallium	20	ND		ND		ND		ND	
Tin	100	ND		ND		ND		ND	
Titanium	20	ND		ND		ND		ND	
Uranium	500	ND		ND		ND		ND	
Vanadium	50	ND		ND		ND		ND	
Zinc	20	ND		ND		ND		ND	

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Concentration Units: ug/L

Analyte	RL	CCB 160-161515/62 12/05/2014 16:26							
		Found	C	Found	C	Found	C	Found	C
Aluminum	200	ND							
Antimony	10	ND							
Arsenic	10	ND							
Barium	50	ND							
Beryllium	5.0	0.500	J						
Boron	50	12.6	J						
Cadmium	5.0	ND							
Calcium	1000	ND							
Chromium	10	ND							
Cobalt	50	ND							
Copper	25	ND							
Iron	100	ND							
Lead	10	1.70	J						
Magnesium	1000	ND							
Manganese	15	ND							
Molybdenum	40	ND							
Nickel	40	ND							
Phosphorus	250	ND							
Potassium	5000	ND							
Selenium	15	ND							
Silicon	400	ND							
Silver	10	ND							
Sodium	1000	ND							
Thallium	20	ND							
Tin	100	ND							
Titanium	20	ND							
Uranium	500	ND							
Vanadium	50	ND							
Zinc	20	ND							

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Concentration Units: ug/L

Analyte	RL	ICB 160-162455/6 12/10/2014 08:57		CCB 160-162455/12 12/10/2014 09:20		CCB 160-162455/24 12/10/2014 10:06			
		Found	C	Found	C	Found	C	Found	C
Aluminum	200	ND		ND		ND			
Antimony	10	ND		ND		ND			
Arsenic	10	ND		2.20	J	ND			
Barium	50	ND		ND		ND			
Beryllium	5.0	0.600	J	0.700	J	0.600	J		
Boron	50	18.7	J	17.9	J	11.6	J		
Cadmium	5.0	ND		ND		ND			
Calcium	1000	ND		ND		ND			
Chromium	10	ND		ND		ND			
Cobalt	50	ND		ND		ND			
Copper	25	ND		ND		ND			
Iron	100	ND		ND		ND			
Lead	10	0.700	J	1.20	J	0.800	J		
Magnesium	1000	ND		ND		ND			
Manganese	15	ND		ND		ND			
Molybdenum	40	ND		ND		ND			
Nickel	40	ND		ND		ND			
Phosphorus	250	ND		ND		ND			
Potassium	5000	ND		ND		ND			
Selenium	15	2.10	J	ND		ND			
Silicon	400	ND		ND		ND			
Silver	10	ND		ND		ND			
Sodium	1000	ND		ND		ND			
Thallium	20	ND		ND		3.50	J		
Tin	100	ND		ND		ND			
Titanium	20	ND		ND		ND			
Uranium	500	ND		ND		ND			
Vanadium	50	ND		ND		ND			
Zinc	20	ND		ND		ND			

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Concentration Units: ug/L

Analyte	RL	ICB 160-158460/8 11/19/2014 14:20		CCB 160-158460/32 11/19/2014 15:19		CCB 160-158460/43 11/19/2014 15:48		CCB 160-158460/52 11/19/2014 16:13	
		Found	C	Found	C	Found	C	Found	C
Mercury	0.20	ND		ND		ND		ND	

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Concentration Units: ug/L

Analyte	RL	CCB 160-158460/54 11/20/2014 07:10		CCB 160-158460/58 11/20/2014 07:57					
		Found	C	Found	C	Found	C	Found	C
Mercury	0.20	ND		ND					

Italicized analytes were not requested for this sequence.

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Concentration Units: ug/L Lab Sample ID: MB 160-160137/1-A

Instrument Code: ICP6500 Batch No.: 161515

CAS No.	Analyte	Concentration	C	Q	Method
7429-90-5	Aluminum	ND			6010C
7440-36-0	Antimony	ND			6010C
7440-38-2	Arsenic	ND			6010C
7440-39-3	Barium	ND			6010C
7440-41-7	Beryllium	ND			6010C
7440-42-8	Boron	ND			6010C
7440-43-9	Cadmium	ND			6010C
7440-70-2	Calcium	ND			6010C
7440-47-3	Chromium	ND			6010C
7440-48-4	Cobalt	ND			6010C
7440-50-8	Copper	ND			6010C
7439-89-6	Iron	ND			6010C
7439-92-1	Lead	1.50	J		6010C
7439-95-4	Magnesium	ND			6010C
7439-96-5	Manganese	ND			6010C
7439-98-7	Molybdenum	ND			6010C
7440-02-0	Nickel	ND			6010C
7440-09-7	Potassium	ND			6010C
7782-49-2	Selenium	ND			6010C
7723-14-0	Phosphorus	ND			6010C
7440-22-4	Silver	ND			6010C
7440-23-5	Sodium	ND			6010C
7440-28-0	Thallium	ND			6010C
7440-21-3	Silicon	ND			6010C
7440-31-5	Tin	ND			6010C
7440-32-6	Titanium	ND			6010C
7440-62-2	Vanadium	ND			6010C
7440-61-1	Uranium	ND			6010C
7440-66-6	Zinc	10.1	J		6010C

3-IN
METHOD BLANK
METALS - DISSOLVED

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Concentration Units: ug/L Lab Sample ID: LB 160-157719/1-C

Instrument Code: ICP6500 Batch No.: 162455

CAS No.	Analyte	Concentration	C	Q	Method
7429-90-5	Aluminum	ND			6010C
7440-36-0	Antimony	ND			6010C
7440-38-2	Arsenic	ND			6010C
7440-39-3	Barium	ND			6010C
7440-41-7	Beryllium	ND			6010C
7440-42-8	Boron	ND			6010C
7440-43-9	Cadmium	ND			6010C
7440-70-2	Calcium	ND			6010C
7440-47-3	Chromium	ND			6010C
7440-48-4	Cobalt	ND			6010C
7440-50-8	Copper	ND			6010C
7439-89-6	Iron	ND			6010C
7439-92-1	Lead	ND			6010C
7439-95-4	Magnesium	ND			6010C
7439-96-5	Manganese	ND			6010C
7439-98-7	Molybdenum	ND			6010C
7440-02-0	Nickel	ND			6010C
7440-09-7	Potassium	ND			6010C
7782-49-2	Selenium	ND			6010C
7723-14-0	Phosphorus	ND			6010C
7440-22-4	Silver	ND			6010C
7440-23-5	Sodium	ND			6010C
7440-28-0	Thallium	2.70	J		6010C
7440-21-3	Silicon	ND			6010C
7440-31-5	Tin	ND			6010C
7440-32-6	Titanium	ND			6010C
7440-62-2	Vanadium	ND			6010C
7440-61-1	Uranium	ND			6010C
7440-66-6	Zinc	ND			6010C

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Concentration Units: ug/L Lab Sample ID: MB 160-158128/1-A

Instrument Code: HAA2 Batch No.: 158460

CAS No.	Analyte	Concentration	C	Q	Method
7439-97-6	Mercury	ND			7470A

3-IN
METHOD BLANK
METALS - DISSOLVED

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Concentration Units: ug/L Lab Sample ID: LB 160-157719/1-B

Instrument Code: HAA2 Batch No.: 158460

CAS No.	Analyte	Concentration	C	Q	Method
7439-97-6	Mercury	ND			7470A

FORM III-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Lab Sample ID: ICSA 160-161515/8 Instrument ID: ICP6500

Lab File ID: 120514C2.asc ICS Source: ICPC MIX ICSA_00044

Concentration Units: ug/L

Analyte	True Solution A	Found Solution A	Percent Recovery
Aluminum	**100000**	**98890**	**99**
Antimony		**0.0000**	
Arsenic		**3.40**	
Barium		**0.200**	
Beryllium		**0.0000**	
Boron		**0.0000**	
Cadmium		**0.0000**	
Calcium	**100000**	**97510**	**98**
Chromium		**0.0000**	
Cobalt		**1.40**	
Copper		**4.50**	
Iron	**100000**	**99000**	**99**
Lead		**0.0000**	
Magnesium	**100000**	**99500**	**100**
Manganese		**4.70**	
Molybdenum		**0.0000**	
Nickel		**1.40**	
Phosphorus	**100000**	**97560**	**98**
Potassium	**100000**	**99400**	**99**
Selenium		**3.10**	
Silicon		**0.0000**	
Silver		**0.0000**	
Sodium	**100000**	**98380**	**98**
Thallium		**0.0000**	
Tin		**0.0000**	
Titanium		**3.40**	
Uranium		**66.4**	
Vanadium		**3.60**	
Zinc		**0.0000**	

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Lab Sample ID: ICSAB 160-161515/9 Instrument ID: ICP6500

Lab File ID: 120514C2.asc ICS Source: ICPC MIX AB_00048

Concentration Units: ug/L

Analyte	True Solution AB	Found Solution AB	Found Percent Recovery
Aluminum	**100000**	**98740**	**99**
Antimony	**500**	**485**	**97**
Arsenic	**2500**	**2445**	**98**
Barium	**2500**	**2471**	**99**
Beryllium	**2500**	**2508**	**100**
Boron	**2500**	**2435**	**97**
Cadmium	**2500**	**2468**	**99**
Calcium	**100000**	**97530**	**98**
Chromium	**2500**	**2467**	**99**
Cobalt	**2500**	**2463**	**99**
Copper	**2500**	**2461**	**98**
Iron	**100000**	**99070**	**99**
Lead	**2500**	**2461**	**98**
Magnesium	**100000**	**99910**	**100**
Manganese	**2500**	**2447**	**98**
Molybdenum	**500**	**495**	**99**
Nickel	**2500**	**2433**	**97**
Phosphorus	**100000**	**97230**	**97**
Potassium	**100000**	**99570**	**100**
Selenium	**500**	**490**	**98**
Silicon	**2500**	**2490**	**100**
Silver	**500**	**493**	**99**
Sodium	**100000**	**98310**	**98**
Thallium	**500**	**487**	**97**
Tin	**2500**	**2469**	**99**
Titanium	**2500**	**2474**	**99**
Uranium	**2500**	**2512**	**100**
Vanadium	**2500**	**2421**	**97**
Zinc	**2500**	**2488**	**100**

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Lab Sample ID: ICSA 160-162455/8 Instrument ID: ICP6500

Lab File ID: 121014C1.asc ICS Source: ICPC MIX ICSA_00044

Concentration Units: ug/L

Analyte	True Solution A	Found Solution A	Percent Recovery
Aluminum	**100000**	**97270**	**97**
Antimony		**0.0000**	
Arsenic		**3.50**	
Barium		**0.600**	
Beryllium		**0.0000**	
Boron		**0.0000**	
Cadmium		**0.0000**	
Calcium	**100000**	**100100**	**100**
Chromium		**0.0000**	
Cobalt		**1.50**	
Copper		**0.0000**	
Iron	**100000**	**97820**	**98**
Lead		**0.0000**	
Magnesium	**100000**	**98770**	**99**
Manganese		**4.50**	
Molybdenum		**0.0000**	
Nickel		**1.20**	
Phosphorus	**100000**	**99480**	**99**
Potassium	**100000**	**97810**	**98**
Selenium		**0.0000**	
Silicon		**0.0000**	
Silver		**0.500**	
Sodium	**100000**	**97140**	**97**
Thallium		**2.80**	
Tin		**0.0000**	
Titanium		**3.50**	
Uranium		**0.0000**	
Vanadium		**3.60**	
Zinc		**0.0000**	

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Lab Sample ID: ICSAB 160-162455/9 Instrument ID: ICP6500

Lab File ID: 121014C1.asc ICS Source: ICPC MIX AB_00048

Concentration Units: ug/L

Analyte	True Solution AB	Found Solution AB	Found Percent Recovery
Aluminum	**100000**	**99570**	**100**
Antimony	**500**	**495**	**99**
Arsenic	**2500**	**2485**	**99**
Barium	**2500**	**2535**	**101**
Beryllium	**2500**	**2553**	**102**
Boron	**2500**	**2469**	**99**
Cadmium	**2500**	**2512**	**100**
Calcium	**100000**	**99000**	**99**
Chromium	**2500**	**2489**	**100**
Cobalt	**2500**	**2501**	**100**
Copper	**2500**	**2512**	**100**
Iron	**100000**	**98980**	**99**
Lead	**2500**	**2494**	**100**
Magnesium	**100000**	**99690**	**100**
Manganese	**2500**	**2450**	**98**
Molybdenum	**500**	**500**	**100**
Nickel	**2500**	**2472**	**99**
Phosphorus	**100000**	**99120**	**99**
Potassium	**100000**	**100300**	**100**
Selenium	**500**	**497**	**99**
Silicon	**2500**	**2505**	**100**
Silver	**500**	**497**	**99**
Sodium	**100000**	**99800**	**100**
Thallium	**500**	**499**	**100**
Tin	**2500**	**2507**	**100**
Titanium	**2500**	**2499**	**100**
Uranium	**2500**	**2451**	**98**
Vanadium	**2500**	**2437**	**97**
Zinc	**2500**	**2525**	**101**

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

5A-IN
MATRIX SPIKE SAMPLE RECOVERY
METALS

Client ID: MW358-20141113-21 MS Lab ID: 160-9438-1 MS

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Matrix: Water Concentration Units: ug/L

% Solids:

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Aluminum	10400		ND		10000	104	75-125		6010C
Antimony	507		ND		500	101	75-125		6010C
Arsenic	1050		ND		1000	105	75-125		6010C
Barium	995		ND		1000	100	75-125		6010C
Beryllium	1000		ND		1000	100	75-125		6010C
Boron	2300		350	J	2000	97	75-125		6010C
Cadmium	1070		ND		1000	107	75-125		6010C
Calcium	552000		550000		10000	10	75-125	4	6010C
Chromium	1080		ND		1000	108	75-125		6010C
Cobalt	1140		ND		1000	114	75-125		6010C
Copper	1120		ND		1000	112	75-125		6010C
Iron	10800		260	J	10000	105	75-125		6010C
Lead	1140		12	J	1000	113	75-125		6010C
Magnesium	167000		160000		10000	98	75-125	4	6010C
Manganese	1070		43	J	1000	102	75-125		6010C
Molybdenum	519		ND		500	104	75-125		6010C
Nickel	1120		ND		1000	112	75-125		6010C
Potassium	11000	J	ND		10000	110	75-125		6010C
Selenium	526		ND		500	105	75-125		6010C
Phosphorus	1170	J	ND		1000	117	75-125		6010C
Silver	195		ND		200	98	75-125		6010C
Sodium	284000		270000		10000	92	75-125	4	6010C
Thallium	225		ND		200	113	75-125		6010C
Silicon	12700		6900		5000	117	75-125		6010C
Tin	1060		ND		1000	106	75-125		6010C
Titanium	973		18	J	1000	96	75-125		6010C
Vanadium	1030		ND		1000	103	75-125		6010C
Uranium	1130	J	ND		1000	113	75-125		6010C
Zinc	1130		ND		1000	113	75-125		6010C

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VA - IN

5A-IN
MATRIX SPIKE SAMPLE RECOVERY
METALS - DISSOLVED

Client ID: MW358-20141113-21 MS
Lab ID: 160-9438-1 MS
Lab Name: TestAmerica St. Louis
Job No.: 160-9438-1
SDG No.:
Matrix: Water
Concentration Units: ug/L
% Solids:

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Mercury	5.32		0.12	J	5.00	104	80-120		7470A

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VA - IN

5A-IN
MATRIX SPIKE SAMPLE RECOVERY
METALS - DISSOLVED

Client ID: MW359-20141113-21 MS
Lab ID: 160-9438-2 MS
Lab Name: TestAmerica St. Louis
Job No.: 160-9438-1
SDG No.:
Matrix: Water
Concentration Units: ug/L
% Solids:

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Aluminum	8620		ND		10000	86	75-125		6010C
Antimony	477		ND		500	95	75-125		6010C
Arsenic	952		24	J	1000	93	75-125		6010C
Barium	865		ND		1000	87	75-125		6010C
Beryllium	858		ND		1000	86	75-125		6010C
Boron	2010		300	J	2000	85	75-125		6010C
Cadmium	932		ND		1000	93	75-125		6010C
Calcium	490000		470000		10000	157	75-125	4	6010C
Chromium	882		ND		1000	88	75-125		6010C
Cobalt	1000		ND		1000	100	75-125		6010C
Copper	960		ND		1000	96	75-125		6010C
Iron	8970		130	J	10000	90	75-125		6010C
Lead	978		ND		1000	98	75-125		6010C
Magnesium	233000		220000		10000	176	75-125	4	6010C
Manganese	974		110	J	1000	87	75-125		6010C
Molybdenum	485		ND		500	97	75-125		6010C
Nickel	973		ND		1000	97	75-125		6010C
Potassium	14600	J	5800	J	10000	88	75-125		6010C
Selenium	443		ND		500	89	75-125		6010C
Phosphorus	1020	J	ND		1000	102	75-125		6010C
Silver	165		ND		200	83	75-125		6010C
Sodium	373000		350000		10000	246	75-125	4	6010C
Thallium	223		28	J	200	98	75-125		6010C
Silicon	8410		3800	J	5000	93	75-125		6010C
Tin	953	J	ND		1000	95	75-125		6010C
Titanium	864		22	J	1000	84	75-125		6010C
Vanadium	853		ND		1000	85	75-125		6010C
Uranium	449	J	ND		1000	45	75-125	F1	6010C
Zinc	988		ND		1000	99	75-125		6010C

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VA - IN

5A-IN
MATRIX SPIKE DUPLICATE SAMPLE RECOVERY
METALS

Client ID: MW358-20141113-21 MSD Lab ID: 160-9438-1 MSD

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Matrix: Water Concentration Units: ug/L

% Solids:

Analyte	(SDR)	C	Spike Added (SA)	%R	Control Limit %R	RPD	RPD Limit	Q	Method
Aluminum	10700		10000	107	75-125	2	20		6010C
Antimony	521		500	104	75-125	3	20		6010C
Arsenic	1050		1000	105	75-125	1	20		6010C
Barium	996		1000	100	75-125	0	20		6010C
Beryllium	1010		1000	101	75-125	0	20		6010C
Boron	2300		2000	97	75-125	0	20		6010C
Cadmium	1060		1000	106	75-125	1	20		6010C
Calcium	542000		10000	-90	75-125	2	20	4	6010C
Chromium	1110		1000	111	75-125	2	20		6010C
Cobalt	1140		1000	114	75-125	0	20		6010C
Copper	1080		1000	108	75-125	3	20		6010C
Iron	11000		10000	107	75-125	2	20		6010C
Lead	1130		1000	112	75-125	1	20		6010C
Magnesium	166000		10000	88	75-125	1	20	4	6010C
Manganese	1070		1000	103	75-125	1	20		6010C
Molybdenum	529		500	106	75-125	2	20		6010C
Nickel	1120		1000	112	75-125	0	20		6010C
Potassium	11300	J	10000	113	75-125	2	20		6010C
Selenium	523		500	105	75-125	1	20		6010C
Phosphorus	1160	J	1000	116	75-125	1	20		6010C
Silver	193		200	97	75-125	1	20		6010C
Sodium	278000		10000	37	75-125	2	20	4	6010C
Thallium	234		200	117	75-125	4	20		6010C
Silicon	13000		5000	123	75-125	2	20		6010C
Tin	1060		1000	106	75-125	0	20		6010C
Titanium	982		1000	96	75-125	1	20		6010C
Vanadium	1040		1000	104	75-125	1	20		6010C
Uranium	1240	J	1000	124	75-125	9	20		6010C
Zinc	1120		1000	112	75-125	1	20		6010C

SDR = Sample Duplicate Result

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VD - IN

5A-IN
MATRIX SPIKE DUPLICATE SAMPLE RECOVERY
METALS - DISSOLVED

Client ID: MW358-20141113-21 MSD
Lab ID: 160-9438-1 MSD
Lab Name: TestAmerica St. Louis
Job No.: 160-9438-1
SDG No.:
Matrix: Water
Concentration Units: ug/L
% Solids:

Analyte	(SDR) C		Spike Added (SA)	%R	Control Limit %R	RPD	RPD Limit	Q	Method
Mercury	5.13		5.00	100	80-120	4	20		7470A

SDR = Sample Duplicate Result

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VD - IN

5A-IN
MATRIX SPIKE DUPLICATE SAMPLE RECOVERY
METALS - DISSOLVED

Client ID: MW359-20141113-21 MSD
Lab ID: 160-9438-2 MSD
Lab Name: TestAmerica St. Louis
Job No.: 160-9438-1
SDG No.:
Matrix: Water
Concentration Units: ug/L
% Solids:

Analyte	(SDR)	C	Spike Added (SA)	%R	Control Limit %R	RPD	RPD Limit	Q	Method
Aluminum	9650		10000	96	75-125	11	20		6010C
Antimony	468		500	94	75-125	2	20		6010C
Arsenic	961		1000	94	75-125	1	20		6010C
Barium	954		1000	95	75-125	10	20		6010C
Beryllium	932		1000	93	75-125	8	20		6010C
Boron	2130		2000	92	75-125	6	20		6010C
Cadmium	940		1000	94	75-125	1	20		6010C
Calcium	484000		10000	94	75-125	1	20	4	6010C
Chromium	936		1000	94	75-125	6	20		6010C
Cobalt	1010		1000	101	75-125	1	20		6010C
Copper	937		1000	94	75-125	2	20		6010C
Iron	9700		10000	97	75-125	8	20		6010C
Lead	999		1000	100	75-125	2	20		6010C
Magnesium	245000		10000	292	75-125	5	20	4	6010C
Manganese	1050		1000	94	75-125	8	20		6010C
Molybdenum	491		500	98	75-125	1	20		6010C
Nickel	985		1000	99	75-125	1	20		6010C
Potassium	15600	J	10000	98	75-125	6	20		6010C
Selenium	461		500	92	75-125	4	20		6010C
Phosphorus	1000	J	1000	100	75-125	1	20		6010C
Silver	182		200	91	75-125	10	20		6010C
Sodium	399000		10000	513	75-125	7	20	4	6010C
Thallium	225		200	99	75-125	1	20		6010C
Silicon	9430		5000	113	75-125	11	20		6010C
Tin	959	J	1000	96	75-125	1	20		6010C
Titanium	951		1000	93	75-125	10	20		6010C
Vanadium	922		1000	92	75-125	8	20		6010C
Uranium	413	J	1000	41	75-125	8	20	F1	6010C
Zinc	1000		1000	100	75-125	1	20		6010C

SDR = Sample Duplicate Result

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VD - IN

LINEAR RANGE CHECK STANDARD
METALS -

Lab ID: LRC 160-161515/10

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

Sample Matrix: Water LCS Source: ICP CAL3\LRC_00018

Analyte	Water(ug/L)							
	True	Found	C	%R	Limits		Q	Method
Aluminum	100000	99100		99	90	110		6010C
Antimony	2000	1980		99	90	110		6010C
Arsenic	10000	9890		99	90	110		6010C
Barium	10000	9760		98	90	110		6010C
Beryllium	10000	9680		97	90	110		6010C
Boron	10000	9800		98	90	110		6010C
Cadmium	10000	9790		98	90	110		6010C
Calcium	100000	96900		97	90	110		6010C
Chromium	10000	9730		97	90	110		6010C
Cobalt	10000	9730		97	90	110		6010C
Copper	10000	9800		98	90	110		6010C
Iron	100000	98200		98	90	110		6010C
Lead	10000	9730		97	90	110		6010C
Magnesium	100000	98100		98	90	110		6010C
Manganese	10000	9780		98	90	110		6010C
Molybdenum	2000	1960		98	90	110		6010C
Nickel	10000	9720		97	90	110		6010C
Potassium	100000	99400		99	90	110		6010C
Selenium	2000	1990		100	90	110		6010C
Phosphorus	100000	97400		97	90	110		6010C
Silver	2000	1950		98	90	110		6010C
Sodium	100000	97800		98	90	110		6010C
Thallium	2000	1930		97	90	110		6010C
Silicon	10000	9850		98	90	110		6010C
Tin	10000	9750		97	90	110		6010C
Titanium	10000	9800		98	90	110		6010C
Vanadium	10000	9750		97	90	110		6010C
Uranium	10000	9680		97	90	110		6010C
Zinc	10000	9770		98	90	110		6010C

Calculations are performed before rounding to avoid round-off errors in calculated results.

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 160-160137/2-A

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

Sample Matrix: Water LCS Source: PREP 1 and 2_00006

Analyte	Water(ug/L)							
	True	Found	C	%R	Limits		Q	Method
Aluminum	10000	10000		100	80	120		6010C
Antimony	500	506		101	80	120		6010C
Arsenic	1000	1050		105	80	120		6010C
Barium	1000	1030		103	80	120		6010C
Beryllium	1000	1030		103	80	120		6010C
Boron	2000	1990		100	80	120		6010C
Cadmium	1000	1050		105	80	120		6010C
Calcium	10000	11600		116	80	120		6010C
Chromium	1000	1100		110	80	120		6010C
Cobalt	1000	1160		116	80	120		6010C
Copper	1000	1100		110	80	120		6010C
Iron	10000	10500		105	80	120		6010C
Lead	1000	1140		114	80	120		6010C
Magnesium	10000	10000		100	80	120		6010C
Manganese	1000	1040		104	80	120		6010C
Molybdenum	500	530		106	80	120		6010C
Nickel	1000	1130		113	80	120		6010C
Potassium	10000	10100		101	80	120		6010C
Selenium	500	531		106	80	120		6010C
Phosphorus	1000	1120		112	80	120		6010C
Silver	200	199		99	80	120		6010C
Sodium	10000	10100		101	80	120		6010C
Thallium	200	230		115	80	120		6010C
Silicon	5000	5030		101	80	120		6010C
Tin	1000	1070		107	80	120		6010C
Titanium	1000	978		98	80	120		6010C
Vanadium	1000	1020		102	80	120		6010C
Uranium	1000	1150		115	80	120		6010C
Zinc	1000	1090		109	80	120		6010C

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

LINEAR RANGE CHECK STANDARD
METALS -

Lab ID: LRC 160-162455/10

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

Sample Matrix: Water LCS Source: ICP CAL3\LRC_00018

Analyte	Water(ug/L)							
	True	Found	C	%R	Limits		Q	Method
Aluminum	100000	101000		101	90	110		6010C
Antimony	2000	1990		100	90	110		6010C
Arsenic	10000	9960		100	90	110		6010C
Barium	10000	10100		101	90	110		6010C
Beryllium	10000	10000		100	90	110		6010C
Boron	10000	9960		100	90	110		6010C
Cadmium	10000	9910		99	90	110		6010C
Calcium	100000	99500		99	90	110		6010C
Chromium	10000	9990		100	90	110		6010C
Cobalt	10000	9900		99	90	110		6010C
Copper	10000	9890		99	90	110		6010C
Iron	100000	99400		99	90	110		6010C
Lead	10000	9880		99	90	110		6010C
Magnesium	100000	101000		101	90	110		6010C
Manganese	10000	9940		99	90	110		6010C
Molybdenum	2000	2000		100	90	110		6010C
Nickel	10000	9890		99	90	110		6010C
Potassium	100000	101000		101	90	110		6010C
Selenium	2000	2000		100	90	110		6010C
Phosphorus	100000	99000		99	90	110		6010C
Silver	2000	2020		101	90	110		6010C
Sodium	100000	100000		100	90	110		6010C
Thallium	2000	1970		98	90	110		6010C
Silicon	10000	10000		100	90	110		6010C
Tin	10000	9900		99	90	110		6010C
Titanium	10000	9990		100	90	110		6010C
Vanadium	10000	9970		100	90	110		6010C
Uranium	10000	10100		101	90	110		6010C
Zinc	10000	9900		99	90	110		6010C

Calculations are performed before rounding to avoid round-off errors in calculated results.

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 160-161405/2-A

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

Sample Matrix: Water LCS Source: PREP 1 and 2_00006

Analyte	Water(ug/L)							
	True	Found	C	%R	Limits		Q	Method
Aluminum	10000	10500		105	80	120		6010C
Antimony	500	524		105	80	120		6010C
Arsenic	1000	1050		105	80	120		6010C
Barium	1000	1070		107	80	120		6010C
Beryllium	1000	1060		106	80	120		6010C
Boron	2000	2060		103	80	120		6010C
Cadmium	1000	1060		106	80	120		6010C
Calcium	10000	11500		115	80	120		6010C
Chromium	1000	1100		110	80	120		6010C
Cobalt	1000	1150		115	80	120		6010C
Copper	1000	1100		110	80	120		6010C
Iron	10000	10700		107	80	120		6010C
Lead	1000	1130		113	80	120		6010C
Magnesium	10000	10300		103	80	120		6010C
Manganese	1000	1060		106	80	120		6010C
Molybdenum	500	546		109	80	120		6010C
Nickel	1000	1120		112	80	120		6010C
Potassium	10000	10300		103	80	120		6010C
Selenium	500	528		106	80	120		6010C
Phosphorus	1000	1110		111	80	120		6010C
Silver	200	215		107	80	120		6010C
Sodium	10000	10500		105	80	120		6010C
Thallium	200	227		114	80	120		6010C
Silicon	5000	5140		103	80	120		6010C
Tin	1000	1090		109	80	120		6010C
Titanium	1000	1050		105	80	120		6010C
Vanadium	1000	1050		105	80	120		6010C
Uranium	1000	1120		112	80	120		6010C
Zinc	1000	1090		109	80	120		6010C

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 160-158127/2-A

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

Sample Matrix: Water LCS Source: Hg QC Int._00445

Analyte	Water(ug/L)							
	True	Found	C	%R	Limits		Q	Method
Mercury	5.00	5.36		107	80	120		7470A

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 160-158128/2-A

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

Sample Matrix: Water LCS Source: Hg QC Int._00445

Analyte	Water(ug/L)							
	True	Found	C	%R	Limits		Q	Method
Mercury	5.00	4.84		97	80	120		7470A

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

8-IN
ICP-AES AND ICP-MS SERIAL DILUTIONS
METALS

Lab ID: 160-9438-1

SDG No:

Lab Name: TestAmerica St. Louis Job No: 160-9438-1

Matrix: Water Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	Method
Aluminum	ND		ND		NC		6010C
Antimony	ND		ND		NC		6010C
Arsenic	ND		ND		NC		6010C
Barium	ND		ND		NC		6010C
Beryllium	ND		ND		NC		6010C
Boron	350	J	540	J	NC		6010C
Cadmium	ND		ND		NC		6010C
Calcium	550000		552000		0.09		6010C
Chromium	ND		ND		NC		6010C
Cobalt	ND		ND		NC		6010C
Copper	ND		ND		NC		6010C
Iron	260	J	ND		NC		6010C
Lead	12	J	55.0	J	NC		6010C
Magnesium	160000		154000		1.8		6010C
Manganese	43	J	ND		NC		6010C
Molybdenum	ND		ND		NC		6010C
Nickel	ND		ND		NC		6010C
Potassium	ND		ND		NC		6010C
Selenium	ND		ND		NC		6010C
Phosphorus	ND		ND		NC		6010C
Silver	ND		ND		NC		6010C
Sodium	270000		262000		4.6		6010C
Thallium	ND		ND		NC		6010C
Silicon	6900		6710	J	NC		6010C
Tin	ND		ND		NC		6010C
Titanium	18	J	ND		NC		6010C
Vanadium	ND		ND		NC		6010C
Uranium	ND		ND		NC		6010C
Zinc	ND		ND		NC		6010C

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIII-IN

8-IN
ICP-AES AND ICP-MS SERIAL DILUTIONS
METALS - DISSOLVED

Lab ID: 160-9438-2

SDG No:

Lab Name: TestAmerica St. Louis Job No: 160-9438-1

Matrix: Water Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	Method
Aluminum	ND		ND		NC		6010C
Antimony	ND		ND		NC		6010C
Arsenic	24	J	105	J	NC		6010C
Barium	ND		ND		NC		6010C
Beryllium	ND		ND		NC		6010C
Boron	300	J	ND		NC		6010C
Cadmium	ND		ND		NC		6010C
Calcium	470000		446000		6.0		6010C
Chromium	ND		ND		NC		6010C
Cobalt	ND		ND		NC		6010C
Copper	ND		ND		NC		6010C
Iron	130	J	ND		NC		6010C
Lead	ND		ND		NC		6010C
Magnesium	220000		198000		8.4		6010C
Manganese	110	J	95.0	J	NC		6010C
Molybdenum	ND		ND		NC		6010C
Nickel	ND		ND		NC		6010C
Potassium	5800	J	ND		NC		6010C
Selenium	ND		ND		NC		6010C
Phosphorus	ND		ND		NC		6010C
Silver	ND		ND		NC		6010C
Sodium	350000		315000		9.6		6010C
Thallium	28	J	150	J	NC		6010C
Silicon	3800	J	3360	J	NC		6010C
Tin	ND		ND		NC		6010C
Titanium	22	J	ND		NC		6010C
Vanadium	ND		ND		NC		6010C
Uranium	ND		ND		NC		6010C
Zinc	ND		ND		NC		6010C

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIII-IN

8-IN
ICP-AES AND ICP-MS SERIAL DILUTIONS
METALS - DISSOLVED

Lab ID: 160-9438-1

SDG No:

Lab Name: TestAmerica St. Louis Job No: 160-9438-1

Matrix: Water Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	Method
Mercury	0.12	J	ND		NC		7470A

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIII-IN

9-IN
DETECTION LIMITS
METALS

Lab Name: TestAmerica St. Louis Job Number: 160-9438-1

SDG Number:

Matrix: Water Instrument ID: ICP6500

Method: 6010C MDL Date: 03/19/2014 10:27

Prep Method: 3010A

Analyte	Wavelength/ Mass	RL (ug/L)	MDL (ug/L)
Aluminum		200	22.4
Antimony		10	3.74
Arsenic		10	1.78
Barium		50	2.12
Beryllium		5	0.283
Boron		50	7.17
Cadmium		5	0.336
Calcium		1000	54.2
Chromium		10	3.35
Cobalt		50	2.72
Copper		25	2.1
Iron		100	12.8
Lead		10	0.598
Magnesium		1000	50.5
Manganese		15	1
Molybdenum		40	1.92
Nickel		40	2.57
Phosphorus		250	13.8
Potassium		5000	456
Selenium		15	2.08
Silicon		400	19.5
Silver		10	0.994
Sodium		1000	105
Thallium		20	2.38
Tin		100	5.01
Titanium		20	1.27
Uranium		500	25.7
Vanadium		50	4.39
Zinc		20	8.32

9-IN
CALIBRATION BLANK DETECTION LIMITS
METALS

Lab Name: TestAmerica St. Louis Job Number: 160-9438-1

SDG Number:

Matrix: Water Instrument ID: ICP6500

Method: 6010C XMDL Date: 03/19/2014 10:24

Analyte	Wavelength/ Mass	XRL (ug/L)	XMDL (ug/L)
Aluminum		200	22.4
Antimony		10	3.74
Arsenic		10	1.78
Barium		50	2.12
Beryllium		5	0.283
Boron		50	7.17
Cadmium		5	0.336
Calcium		1000	54.2
Chromium		10	3.35
Cobalt		50	2.72
Copper		25	2.1
Iron		100	12.8
Lead		10	0.598
Magnesium		1000	50.5
Manganese		15	1
Molybdenum		40	1.92
Nickel		40	2.57
Phosphorus		250	13.8
Potassium		5000	456
Selenium		15	2.08
Silicon		400	19.5
Silver		10	0.994
Sodium		1000	105
Thallium		20	2.38
Tin		100	5.01
Titanium		20	1.27
Uranium		500	25.7
Vanadium		50	4.39
Zinc		20	8.32

9-IN
DETECTION LIMITS
METALS - DISSOLVED

Lab Name: TestAmerica St. Louis Job Number: 160-9438-1

SDG Number:

Matrix: Water Instrument ID: ICP6500

Method: 6010C MDL Date: 03/19/2014 10:27

Prep Method: 3010A

Analyte	Wavelength/ Mass	RL (ug/L)	MDL (ug/L)
Aluminum		200	22.4
Antimony		10	3.74
Arsenic		10	1.78
Barium		50	2.12
Beryllium		5	0.283
Boron		50	7.17
Cadmium		5	0.336
Calcium		1000	54.2
Chromium		10	3.35
Cobalt		50	2.72
Copper		25	2.1
Iron		100	12.8
Lead		10	0.598
Magnesium		1000	50.5
Manganese		15	1
Molybdenum		40	1.92
Nickel		40	2.57
Phosphorus		250	13.8
Potassium		5000	456
Selenium		15	2.08
Silicon		400	19.5
Silver		10	0.994
Sodium		1000	105
Thallium		20	2.38
Tin		100	5.01
Titanium		20	1.27
Uranium		500	25.7
Vanadium		50	4.39
Zinc		20	8.32

9-IN
CALIBRATION BLANK DETECTION LIMITS
METALS - DISSOLVED

Lab Name: TestAmerica St. Louis Job Number: 160-9438-1

SDG Number:

Matrix: Water Instrument ID: ICP6500

Method: 6010C XMDL Date: 03/19/2014 10:24

Analyte	Wavelength/ Mass	XRL (ug/L)	XMDL (ug/L)
Aluminum		200	22.4
Antimony		10	3.74
Arsenic		10	1.78
Barium		50	2.12
Beryllium		5	0.283
Boron		50	7.17
Cadmium		5	0.336
Calcium		1000	54.2
Chromium		10	3.35
Cobalt		50	2.72
Copper		25	2.1
Iron		100	12.8
Lead		10	0.598
Magnesium		1000	50.5
Manganese		15	1
Molybdenum		40	1.92
Nickel		40	2.57
Phosphorus		250	13.8
Potassium		5000	456
Selenium		15	2.08
Silicon		400	19.5
Silver		10	0.994
Sodium		1000	105
Thallium		20	2.38
Tin		100	5.01
Titanium		20	1.27
Uranium		500	25.7
Vanadium		50	4.39
Zinc		20	8.32

9-IN
DETECTION LIMITS
METALS

Lab Name: TestAmerica St. Louis Job Number: 160-9438-1

SDG Number:

Matrix: Water Instrument ID: HAA2

Method: 7470A MDL Date: 06/28/2011 19:17

Prep Method: 7470A

Analyte	Wavelength/ Mass	RL (ug/L)	MDL (ug/L)
Mercury		0.2	0.06

9-IN
CALIBRATION BLANK DETECTION LIMITS
METALS

Lab Name: TestAmerica St. Louis Job Number: 160-9438-1

SDG Number:

Matrix: Water Instrument ID: HAA2

Method: 7470A XMDL Date: 06/28/2011 19:19

Analyte	Wavelength/ Mass	XRL (ug/L)	XMDL (ug/L)
Mercury		0.2	0.06

9-IN
DETECTION LIMITS
METALS - DISSOLVED

Lab Name: TestAmerica St. Louis Job Number: 160-9438-1

SDG Number:

Matrix: Water Instrument ID: HAA2

Method: 7470A MDL Date: 06/28/2011 19:17

Prep Method: 7470A

Analyte	Wavelength/ Mass	RL (ug/L)	MDL (ug/L)
Mercury		0.2	0.06

9-IN
CALIBRATION BLANK DETECTION LIMITS
METALS - DISSOLVED

Lab Name: TestAmerica St. Louis Job Number: 160-9438-1

SDG Number:

Matrix: Water Instrument ID: HAA2

Method: 7470A XMDL Date: 06/28/2011 19:19

Analyte	Wavelength/ Mass	XRL (ug/L)	XMDL (ug/L)
Mercury		0.2	0.06

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: TestAmerica St. Louis Job Number: 160-9438-1

SDG No.:

ICP-AES Instrument ID: ICP6500 Date: 10/17/2014

Analyte	Wave Length	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	In
Aluminum	396.152														
Antimony	206.833											0.009771		0.000037	
Arsenic	189.042													-0.000092	
Barium	455.403														
Beryllium	313.042														
Bismuth	223.061														
Boron	249.678													-0.000697	
Cadmium	228.802			0.00291							-0.002107				
Calcium	184.006														
Chromium	283.563													0.001797	
Cobalt	228.616														
Copper	217.894														
Iron	259.940														
Lead	220.353		-0.000067										0.0003	0.000015	
Lithium	670.784														
Magnesium	279.806														
Manganese	257.610														
Molybdenum	202.030														
Nickel	221.647														
Phosphorus	177.495														
Potassium	766.490														
Selenium	196.090													-0.000161	
Silicon	251.611														
Silver	328.068														
Sodium	589.592														
Strontium	407.771								0.000051						
Sulfur	182.034														
Thallium	190.856										0.004905				
Thorium	283.231														
Tin	189.989														

X-IN

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: TestAmerica St. Louis Job Number: 160-9438-1

SDG No.:

ICP-AES Instrument ID: ICP6500 Date: 10/17/2014

Analyte	Wave Length	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	In
Titanium	334.941										0.004905				
Uranium	367.007													0.003929	
Vanadium	290.882		0.00006				0.000458								
Yttrium	371.030														
Zinc	213.856		0.000045										0.001724	0.000154	

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: TestAmerica St. Louis Job Number: 160-9438-1

SDG No.:

ICP-AES Instrument ID: ICP6500 Date: 10/17/2014

Analyte	Wave Length	K	Li	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Se	Si	Sn
Aluminum	396.152					0.039350									
Antimony	206.833														-0.005978
Arsenic	189.042														
Barium	455.403														
Beryllium	313.042														
Bismuth	223.061														
Boron	249.678														
Cadmium	228.802														
Calcium	184.006														
Chromium	283.563				0.000411										
Cobalt	228.616														
Copper	217.894														
Iron	259.940														
Lead	220.353					.001683									
Lithium	670.784														
Magnesium	279.806														
Manganese	257.610														
Molybdenum	202.030														
Nickel	221.647														
Phosphorus	177.495														
Potassium	766.490														
Selenium	196.090				0.000548										
Silicon	251.611														
Silver	328.068														
Sodium	589.592														
Strontium	407.771														
Sulfur	182.034														
Thallium	190.856				0.001127										
Thorium	283.231														
Tin	189.989														

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: TestAmerica St. Louis Job Number: 160-9438-1

SDG No.:

ICP-AES Instrument ID: ICP6500 Date: 10/17/2014

Analyte	Wave Length	K	Li	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Se	Si	Sn
Titanium	334.941				0.001127										
Uranium	367.007														
Vanadium	290.882												0.00354		
Yttrium	371.030														
Zinc	213.856							0.006227							

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: TestAmerica St. Louis Job Number: 160-9438-1

SDG No.:

ICP-AES Instrument ID: ICP6500 Date: 10/17/2014

Analyte	Wave Length	Sr	Th	Ti	Tl	U	V	Y	Zn						
Aluminum	396.152														
Antimony	206.833						-0.001548								
Arsenic	189.042														
Barium	455.403														
Beryllium	313.042			-0.000304											
Bismuth	223.061														
Boron	249.678														
Cadmium	228.802														
Calcium	184.006														
Chromium	283.563		-0.016			0.004988	0.000751								
Cobalt	228.616			0.001621											
Copper	217.894														
Iron	259.940														
Lead	220.353					0.001155									
Lithium	670.784														
Magnesium	279.806		-0.036831												
Manganese	257.610														
Molybdenum	202.030														
Nickel	221.647														
Phosphorus	177.495														
Potassium	766.490														
Selenium	196.090														
Silicon	251.611														
Silver	328.068					0.001663									
Sodium	589.592														
Strontium	407.771														
Sulfur	182.034														
Thallium	190.856		-0.000423	-0.000526											
Thorium	283.231			0.008116		-0.00617									
Tin	189.989														

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: TestAmerica St. Louis Job Number: 160-9438-1

SDG No.:

ICP-AES Instrument ID: ICP6500 Date: 10/17/2014

Analyte	Wave Length	Sr	Th	Ti	Tl	U	V	Y	Zn						
Titanium	334.941														
Uranium	367.007		0.1427												
Vanadium	290.882				0.002273	0.000924									
Yttrium	371.030														
Zinc	213.856														

11-IN
LINEAR RANGES
METALS

Lab Name: TestAmerica St. Louis Job No: 160-9438-1

SDG No.:

Instrument ID: ICP6500 Date: 09/25/2013 10:39

Analyte	Integ. Time (Sec.)	Concentration (mg/L)	Method
Aluminum		90	6010C
Antimony		1.8	6010C
Arsenic		9	6010C
Barium		9	6010C
Beryllium		9	6010C
Boron		9	6010C
Cadmium		9	6010C
Calcium		90	6010C
Chromium		9	6010C
Cobalt		9	6010C
Copper		9	6010C
Iron		90	6010C
Lead		9	6010C
Magnesium		90	6010C
Manganese		9	6010C
Molybdenum		1.8	6010C
Nickel		9	6010C
Potassium		90	6010C
Selenium		1.8	6010C
Phosphorus		90	6010C
Silver		3.6	6010C
Sodium		90	6010C
Thallium		1.8	6010C
Silicon		9	6010C
Tin		9	6010C
Titanium		9	6010C
Vanadium		9	6010C
Uranium		9	6010C
Zinc		9	6010C

11-IN
LINEAR RANGES
METALS

Lab Name: TestAmerica St. Louis Job No: 160-9438-1

SDG No.:

Instrument ID: HAA2 Date: 03/14/2012 13:48

Analyte	Integ. Time (Sec.)	Concentration (ug/L)	Method
Mercury		10	7470A

12-IN
PREPARATION LOG
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Prep Method: 3010A

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight	Initial Volume (mL)	Final Volume (mL)
MB 160-160137/1-A	12/01/2014 10:49	160137		50	50
LCS 160-160137/2-A	12/01/2014 10:49	160137		50	50
160-9438-1	12/01/2014 10:49	160137		50	50
160-9438-1 MS	12/01/2014 10:49	160137		50	50
160-9438-1 MSD	12/01/2014 10:49	160137		50	50
160-9438-2	12/01/2014 10:49	160137		50	50

12-IN
PREPARATION LOG
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Prep Method: 3010A

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight	Initial Volume (mL)	Final Volume (mL)
LB 160-157719/1-C	12/05/2014 12:09	161405		50	50
LCS 160-161405/2-A	12/05/2014 12:09	161405		50	50
160-9438-1	12/05/2014 12:09	161405		50	50
160-9438-2	12/05/2014 12:09	161405		50	50
160-9438-2 MS	12/05/2014 12:09	161405		50	50
160-9438-2 MSD	12/05/2014 12:09	161405		50	50

12-IN
PREPARATION LOG
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Prep Method: 7470A

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight	Initial Volume (mL)	Final Volume (mL)
LB 160-157719/1-B	11/19/2014 11:06	158127		30	30
LCS 160-158127/2-A	11/19/2014 11:06	158127		30	30
160-9438-1	11/19/2014 11:06	158127		30	30
160-9438-1 MS	11/19/2014 11:06	158127		30	30
160-9438-1 MSD	11/19/2014 11:06	158127		30	30
160-9438-2	11/19/2014 11:06	158127		30	30

12-IN
PREPARATION LOG
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Prep Method: 7470A

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight	Initial Volume (mL)	Final Volume (mL)
MB 160-158128/1-A	11/19/2014 11:07	158128		30	30
LCS 160-158128/2-A	11/19/2014 11:07	158128		30	30
160-9438-1	11/19/2014 11:07	158128		30	30
160-9438-2	11/19/2014 11:07	158128		30	30

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Instrument ID: ICP6500 Analysis Method: 6010C

Start Date: 12/05/2014 12:11 End Date: 12/05/2014 22:25

Lab Sample Id	D/F	Type	Time	Analytes																										
				Ag	Al	As	B	Ba	Be	Ca	Cd	Co	Cr	Cu	Fe	K	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Se	Si	Sn	Ti	Tl
ICIS 160-161515/1	1		12:11	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
IC 160-161515/2			12:15	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
IC 160-161515/3			12:18	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
IC 160-161515/4			12:22	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICV 160-161515/5	1		12:26	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICB 160-161515/6	1		12:30	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CRI 160-161515/7	1		12:34	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICSA 160-161515/8	1		12:38	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICSAB 160-161515/9	1		12:42	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LRC 160-161515/10	1		12:45	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCV 160-161515/11	1		12:49	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 160-161515/12	1		12:53	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCV 160-161515/13			12:57																											
CCB 160-161515/14			13:00																											
ZZZZZZ			13:28																											
ZZZZZZ			13:32																											
ZZZZZZ			13:36																											
ZZZZZZ			13:39																											
ZZZZZZ			13:43																											
ZZZZZZ			13:47																											
ZZZZZZ			13:50																											
ZZZZZZ			13:54																											
ZZZZZZ			13:58																											
ZZZZZZ			14:02																											
CCV 160-161515/25			14:05																											
CCB 160-161515/26			14:09																											
ZZZZZZ			14:13																											
ZZZZZZ			14:17																											
ZZZZZZ			14:21																											
ZZZZZZ			14:24																											
ZZZZZZ			14:28																											
ZZZZZZ			14:32																											
ZZZZZZ			14:36																											
ZZZZZZ			14:40																											
ZZZZZZ			14:43																											
ZZZZZZ			14:47																											
CCV 160-161515/37	1		14:50	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 160-161515/38	1		14:54	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			14:58																											
ZZZZZZ			15:02																											
ZZZZZZ			15:06																											
ZZZZZZ			15:10																											

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Instrument ID: ICP6500 Analysis Method: 6010C

Start Date: 12/05/2014 12:11 End Date: 12/05/2014 22:25

Lab Sample Id	D/F	Type	Time	Analytes																									
				Ag	Al	As	B	Ba	Be	Ca	Cd	Co	Cr	Cu	Fe	K	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Se	Si	Sn	Ti	Tl
ZZZZZZ			15:14																										
ZZZZZZ			15:18																										
ZZZZZZ			15:22																										
ZZZZZZ			15:25																										
MB 160-160137/1-A	1	T	15:29	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LCS 160-160137/2-A	1	T	15:33	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCV 160-161515/49	1		15:37	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 160-161515/50	1		15:40	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
160-9438-1	10	T	15:44	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
160-9438-1 SD	50	T	15:48	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
160-9438-1 MS	10	T	15:52	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
160-9438-1 MSD	10	T	15:56	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
160-9438-2	10	T	16:00	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			16:04																										
ZZZZZZ			16:08																										
ZZZZZZ			16:11																										
ZZZZZZ			16:15																										
ZZZZZZ			16:19																										
CCV 160-161515/61	1		16:22	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 160-161515/62	1		16:26	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			16:30																										
ZZZZZZ			16:34																										
ZZZZZZ			16:38																										
ZZZZZZ			16:42																										
ZZZZZZ			16:45																										
ZZZZZZ			16:49																										
ZZZZZZ			16:53																										
ZZZZZZ			16:57																										
ZZZZZZ			17:00																										
ZZZZZZ			17:04																										
CCV 160-161515/73			17:08																										
CCB 160-161515/74			17:12																										
ZZZZZZ			17:16																										
ZZZZZZ			17:20																										
ZZZZZZ			17:24																										
ZZZZZZ			17:27																										
ZZZZZZ			17:31																										
ZZZZZZ			17:35																										
ZZZZZZ			17:39																										
ZZZZZZ			17:42																										
ZZZZZZ			17:46																										
ZZZZZZ			17:50																										

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Instrument ID: ICP6500 Analysis Method: 6010C

Start Date: 12/05/2014 12:11 End Date: 12/05/2014 22:25

Lab Sample Id	D/F	Type	Time	Analytes																										
				Ag	Al	As	B	Ba	Be	Ca	Cd	Co	Cr	Cu	Fe	K	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Se	Si	Sn	Ti	Tl
CCV 160-161515/85			17:54																											
CCB 160-161515/86			17:58																											
ZZZZZZ			18:02																											
ZZZZZZ			18:06																											
ZZZZZZ			18:09																											
ZZZZZZ			18:13																											
ZZZZZZ			18:17																											
ZZZZZZ			18:21																											
ZZZZZZ			18:25																											
ZZZZZZ			18:29																											
ZZZZZZ			18:32																											
ZZZZZZ			18:36																											
CCV 160-161515/97			18:40																											
CCB 160-161515/98			18:44																											
ZZZZZZ			18:47																											
ZZZZZZ			18:51																											
ZZZZZZ			18:55																											
ZZZZZZ			18:59																											
ZZZZZZ			19:02																											
ZZZZZZ			19:06																											
ZZZZZZ			19:10																											
ZZZZZZ			19:14																											
ZZZZZZ			19:17																											
ZZZZZZ			19:21																											
CCV 160-161515/109			19:25																											
CCB 160-161515/110			19:29																											
ZZZZZZ			19:33																											
ZZZZZZ			19:36																											
ZZZZZZ			19:40																											
ZZZZZZ			19:44																											
ZZZZZZ			19:48																											
ZZZZZZ			19:52																											
ZZZZZZ			19:55																											
ZZZZZZ			19:59																											
ZZZZZZ			20:03																											
ZZZZZZ			20:07																											
CCV 160-161515/121			20:11																											
CCB 160-161515/122			20:14																											
ZZZZZZ			20:18																											
ZZZZZZ			20:22																											
ZZZZZZ			20:26																											
ZZZZZZ			20:30																											

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Instrument ID: ICP6500 Analysis Method: 6010C

Start Date: 12/05/2014 12:11 End Date: 12/05/2014 22:25

Lab Sample Id	D/F	Type	Time	Analytes																										
				Ag	Al	As	B	Ba	Be	Ca	Cd	Co	Cr	Cu	Fe	K	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Se	Si	Sn	Ti	Tl
ZZZZZZ			20:33																											
ZZZZZZ			20:37																											
ZZZZZZ			20:40																											
ZZZZZZ			20:44																											
ZZZZZZ			20:48																											
ZZZZZZ			20:51																											
CCV 160-161515/133			20:55																											
CCB 160-161515/134			20:59																											
ZZZZZZ			21:03																											
ZZZZZZ			21:07																											
ZZZZZZ			21:11																											
ZZZZZZ			21:15																											
ZZZZZZ			21:18																											
ZZZZZZ			21:22																											
ZZZZZZ			21:26																											
ZZZZZZ			21:30																											
ZZZZZZ			21:34																											
ZZZZZZ			21:38																											
CCV 160-161515/145			21:42																											
CCB 160-161515/146			21:46																											
ZZZZZZ			21:50																											
ZZZZZZ			21:54																											
ZZZZZZ			21:58																											
ZZZZZZ			22:01																											
ZZZZZZ			22:05																											
ZZZZZZ			22:09																											
ZZZZZZ			22:13																											
ZZZZZZ			22:17																											
CCB 160-161515/156			22:25																											
CCV 160-161515/155			22:21																											

Prep Types:
T = Total/NA

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Instrument ID: ICP6500 Analysis Method: 6010C

Start Date: 12/05/2014 12:11 End Date: 12/05/2014 22:25

Lab Sample Id	D/F	Type	Time	Analytes																									
				U	V	Zn																							
CCV 160-161515/155			22:21																										
CCB 160-161515/156			22:25																										
ZZZZZZ			22:17																										
ZZZZZZ			22:13																										
ZZZZZZ			22:09																										
ZZZZZZ			22:05																										
ZZZZZZ			22:01																										
ZZZZZZ			21:58																										
ZZZZZZ			21:54																										
ZZZZZZ			21:50																										
CCB 160-161515/146			21:46																										
CCV 160-161515/145			21:42																										
ZZZZZZ			21:38																										
ZZZZZZ			21:34																										
ZZZZZZ			21:30																										
ZZZZZZ			21:26																										
ZZZZZZ			21:22																										
ZZZZZZ			21:18																										
ZZZZZZ			21:15																										
ZZZZZZ			21:11																										
ZZZZZZ			21:07																										
ZZZZZZ			21:03																										
CCB 160-161515/134			20:59																										
CCV 160-161515/133			20:55																										
ZZZZZZ			20:51																										
ZZZZZZ			20:48																										
ZZZZZZ			20:44																										
ZZZZZZ			20:40																										
ZZZZZZ			20:37																										
ZZZZZZ			20:33																										
ZZZZZZ			20:30																										
ZZZZZZ			20:26																										
ZZZZZZ			20:22																										
ZZZZZZ			20:18																										
CCB 160-161515/122			20:14																										
CCV 160-161515/121			20:11																										
ZZZZZZ			20:07																										
ZZZZZZ			20:03																										
ZZZZZZ			19:59																										
ZZZZZZ			19:55																										
ZZZZZZ			19:52																										
ZZZZZZ			19:48																										

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Instrument ID: ICP6500 Analysis Method: 6010C

Start Date: 12/05/2014 12:11 End Date: 12/05/2014 22:25

Lab Sample Id	D/F	Type	Time	Analytes																										
				U	V	Zn																								
ZZZZZZ			19:44																											
ZZZZZZ			19:40																											
ZZZZZZ			19:36																											
ZZZZZZ			19:33																											
CCB 160-161515/110			19:29																											
CCV 160-161515/109			19:25																											
ZZZZZZ			19:21																											
ZZZZZZ			19:17																											
ZZZZZZ			19:14																											
ZZZZZZ			19:10																											
ZZZZZZ			19:06																											
ZZZZZZ			19:02																											
ZZZZZZ			18:59																											
ZZZZZZ			18:55																											
ZZZZZZ			18:51																											
ZZZZZZ			18:47																											
CCB 160-161515/98			18:44																											
CCV 160-161515/97			18:40																											
ZZZZZZ			18:36																											
ZZZZZZ			18:32																											
ZZZZZZ			18:29																											
ZZZZZZ			18:25																											
ZZZZZZ			18:21																											
ZZZZZZ			18:17																											
ZZZZZZ			18:13																											
ZZZZZZ			18:09																											
ZZZZZZ			18:06																											
ZZZZZZ			18:02																											
CCB 160-161515/86			17:58																											
CCV 160-161515/85			17:54																											
ZZZZZZ			17:50																											
ZZZZZZ			17:46																											
ZZZZZZ			17:42																											
ZZZZZZ			17:39																											
ZZZZZZ			17:35																											
ZZZZZZ			17:31																											
ZZZZZZ			17:27																											
ZZZZZZ			17:24																											
ZZZZZZ			17:20																											
ZZZZZZ			17:16																											
CCB 160-161515/74			17:12																											
CCV 160-161515/73			17:08																											

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Instrument ID: ICP6500 Analysis Method: 6010C

Start Date: 12/05/2014 12:11 End Date: 12/05/2014 22:25

Lab Sample Id	D/F	Type	Time	Analytes																										
				U	V	Zn																								
ZZZZZZ			17:04																											
ZZZZZZ			17:00																											
ZZZZZZ			16:57																											
ZZZZZZ			16:53																											
ZZZZZZ			16:49																											
ZZZZZZ			16:45																											
ZZZZZZ			16:42																											
ZZZZZZ			16:38																											
ZZZZZZ			16:34																											
ZZZZZZ			16:30																											
CCB 160-161515/62	1		16:26	X	X	X																								
CCV 160-161515/61	1		16:22	X	X	X																								
ZZZZZZ			16:19																											
ZZZZZZ			16:15																											
ZZZZZZ			16:11																											
ZZZZZZ			16:08																											
ZZZZZZ			16:04																											
160-9438-2	10	T	16:00	X	X	X																								
160-9438-1 MSD	10	T	15:56	X	X	X																								
160-9438-1 MS	10	T	15:52	X	X	X																								
160-9438-1 SD	50	T	15:48	X	X	X																								
160-9438-1	10	T	15:44	X	X	X																								
CCB 160-161515/50	1		15:40	X	X	X																								
CCV 160-161515/49	1		15:37	X	X	X																								
LCS 160-160137/2-A	1	T	15:33	X	X	X																								
MB 160-160137/1-A	1	T	15:29	X	X	X																								
ZZZZZZ			15:25																											
ZZZZZZ			15:22																											
ZZZZZZ			15:18																											
ZZZZZZ			15:14																											
ZZZZZZ			15:10																											
ZZZZZZ			15:06																											
ZZZZZZ			15:02																											
ZZZZZZ			14:58																											
CCB 160-161515/38	1		14:54	X	X	X																								
CCV 160-161515/37	1		14:50	X	X	X																								
ZZZZZZ			14:47																											
ZZZZZZ			14:43																											
ZZZZZZ			14:40																											
ZZZZZZ			14:36																											
ZZZZZZ			14:32																											
ZZZZZZ			14:28																											

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Instrument ID: ICP6500 Analysis Method: 6010C

Start Date: 12/05/2014 12:11 End Date: 12/05/2014 22:25

Lab Sample Id	D/F	Type	Time	Analytes																										
				U	V	Zn																								
ZZZZZZ			14:24																											
ZZZZZZ			14:21																											
ZZZZZZ			14:17																											
ZZZZZZ			14:13																											
CCB 160-161515/26			14:09																											
CCV 160-161515/25			14:05																											
ZZZZZZ			14:02																											
ZZZZZZ			13:58																											
ZZZZZZ			13:54																											
ZZZZZZ			13:50																											
ZZZZZZ			13:47																											
ZZZZZZ			13:43																											
ZZZZZZ			13:39																											
ZZZZZZ			13:36																											
ZZZZZZ			13:32																											
ZZZZZZ			13:28																											
CCB 160-161515/14			13:00																											
CCV 160-161515/13			12:57																											
CCB 160-161515/12	1		12:53	X	X	X																								
CCV 160-161515/11	1		12:49	X	X	X																								
LRC 160-161515/10	1		12:45	X	X	X																								
ICSAB 160-161515/9	1		12:42	X	X	X																								
ICSA 160-161515/8	1		12:38	X	X	X																								
CRI 160-161515/7	1		12:34	X	X	X																								
ICB 160-161515/6	1		12:30	X	X	X																								
ICV 160-161515/5	1		12:26	X	X	X																								
IC 160-161515/4			12:22	X	X	X																								
IC 160-161515/3			12:18	X	X	X																								
IC 160-161515/2			12:15	X	X	X																								
ICIS 160-161515/1	1		12:11	X	X	X																								

Prep Types:
T = Total/NA

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Instrument ID: ICP6500 Analysis Method: 6010C

Start Date: 12/10/2014 08:38 End Date: 12/10/2014 11:51

Lab Sample Id	D/F	Type	Time	Analytes																										
				Ag	Al	As	B	Ba	Be	Ca	Cd	Co	Cr	Cu	Fe	K	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Se	Si	Sn	Ti	Tl
ICIS 160-162455/1	1		08:38	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
IC 160-162455/2			08:42	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
IC 160-162455/3			08:46	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
IC 160-162455/4			08:50	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICV 160-162455/5	1		08:53	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICB 160-162455/6	1		08:57	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CRI 160-162455/7	1		09:01	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICSA 160-162455/8	1		09:05	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICSAB 160-162455/9	1		09:09	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LRC 160-162455/10	1		09:12	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCV 160-162455/11	1		09:16	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 160-162455/12	1		09:20	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			09:24																											
ZZZZZZ			09:28																											
LB 160-157719/1-C	1	D	09:32	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LCS 160-161405/2-A	1	T	09:36	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
160-9438-1	10	D	09:39	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
160-9438-2	10	D	09:43	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
160-9438-2 SD	50	D	09:47	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
160-9438-2 MS	10	D	09:51	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
160-9438-2 MSD	10	D	09:54	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			09:58																											
CCV 160-162455/23	1		10:02	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 160-162455/24	1		10:06	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			10:10																											
ZZZZZZ			10:13																											
ZZZZZZ			10:17																											
ZZZZZZ			10:21																											
ZZZZZZ			10:25																											
ZZZZZZ			10:28																											
ZZZZZZ			10:32																											
ZZZZZZ			10:36																											
ZZZZZZ			10:40																											
ZZZZZZ			10:43																											
CCV 160-162455/35			10:47																											
CCB 160-162455/36			10:51																											
ZZZZZZ			10:55																											
ZZZZZZ			10:59																											
ZZZZZZ			11:03																											
ZZZZZZ			11:07																											
ZZZZZZ			11:10																											
CCV 160-162455/42			11:14																											

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Instrument ID: ICP6500 Analysis Method: 6010C

Start Date: 12/10/2014 08:38 End Date: 12/10/2014 11:51

Lab Sample Id	D/F	Type	Time	Analytes																										
				Ag	Al	As	B	Ba	Be	Ca	Cd	Co	Cr	Cu	Fe	K	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Se	Si	Sn	Ti	Tl
CCB 160-162455/43			11:18																											
ZZZZZZ			11:24																											
ZZZZZZ			11:28																											
ZZZZZZ			11:32																											
ZZZZZZ			11:36																											
ZZZZZZ			11:40																											
ZZZZZZ			11:43																											
CCV 160-162455/50			11:47																											
CCB 160-162455/51			11:51																											

Prep Types:
D = Dissolved
T = Total/NA

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Instrument ID: ICP6500 Analysis Method: 6010C

Start Date: 12/10/2014 08:38 End Date: 12/10/2014 11:51

Lab Sample Id	D/F	Type	Time	Analytes																										
				U	V	Zn																								
CCB 160-162455/51			11:51																											
CCV 160-162455/50			11:47																											
ZZZZZZ			11:43																											
ZZZZZZ			11:40																											
ZZZZZZ			11:36																											
ZZZZZZ			11:32																											
ZZZZZZ			11:28																											
ZZZZZZ			11:24																											
CCB 160-162455/43			11:18																											
CCV 160-162455/42			11:14																											
ZZZZZZ			11:10																											
ZZZZZZ			11:07																											
ZZZZZZ			11:03																											
ZZZZZZ			10:59																											
ZZZZZZ			10:55																											
CCB 160-162455/36			10:51																											
CCV 160-162455/35			10:47																											
ZZZZZZ			10:43																											
ZZZZZZ			10:40																											
ZZZZZZ			10:36																											
ZZZZZZ			10:32																											
ZZZZZZ			10:28																											
ZZZZZZ			10:25																											
ZZZZZZ			10:21																											
ZZZZZZ			10:17																											
ZZZZZZ			10:13																											
ZZZZZZ			10:10																											
CCB 160-162455/24	1		10:06	X	X	X																								
CCV 160-162455/23	1		10:02	X	X	X																								
ZZZZZZ			09:58																											
160-9438-2 MSD	10	D	09:54	X	X	X																								
160-9438-2 MS	10	D	09:51	X	X	X																								
160-9438-2 SD	50	D	09:47	X	X	X																								
160-9438-2	10	D	09:43	X	X	X																								
160-9438-1	10	D	09:39	X	X	X																								
LCS 160-161405/2-A	1	T	09:36	X	X	X																								
LB 160-157719/1-C	1	D	09:32	X	X	X																								
ZZZZZZ			09:28																											
ZZZZZZ			09:24																											
CCB 160-162455/12	1		09:20	X	X	X																								
CCV 160-162455/11	1		09:16	X	X	X																								
LRC 160-162455/10	1		09:12	X	X	X																								

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Instrument ID: ICP6500 Analysis Method: 6010C

Start Date: 12/10/2014 08:38 End Date: 12/10/2014 11:51

Lab Sample Id	D/F	Type	Time	Analytes																								
				U	V	Zn																						
ICSAB 160-162455/9	1		09:09	X	X	X																						
ICSA 160-162455/8	1		09:05	X	X	X																						
CRI 160-162455/7	1		09:01	X	X	X																						
ICB 160-162455/6	1		08:57	X	X	X																						
ICV 160-162455/5	1		08:53	X	X	X																						
IC 160-162455/4			08:50	X	X	X																						
IC 160-162455/3			08:46	X	X	X																						
IC 160-162455/2			08:42	X	X	X																						
ICIS 160-162455/1	1		08:38	X	X	X																						

Prep Types:
D = Dissolved
T = Total/NA

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Instrument ID: HAA2 Analysis Method: 7470A

Start Date: 11/19/2014 14:03 End Date: 11/20/2014 07:57

Lab Sample Id	D/F	Type	Time	Analytes																								
				Hg																								
IC 160-158460/1			14:03	X																								
IC 160-158460/2			14:05	X																								
IC 160-158460/3			14:07	X																								
IC 160-158460/4			14:09	X																								
IC 160-158460/5			14:12	X																								
IC 160-158460/6			14:14	X																								
ICV 160-158460/7	1		14:17	X																								
ICB 160-158460/8	1		14:20	X																								
ZZZZZZ			14:23																									
ZZZZZZ			14:25																									
ZZZZZZ			14:27																									
ZZZZZZ			14:30																									
ZZZZZZ			14:32																									
ZZZZZZ			14:34																									
ZZZZZZ			14:37																									
ZZZZZZ			14:40																									
ZZZZZZ			14:42																									
ZZZZZZ			14:44																									
CCV 160-158460/19			14:46																									
CCB 160-158460/20			14:49																									
ZZZZZZ			14:52																									
ZZZZZZ			14:54																									
ZZZZZZ			14:56																									
ZZZZZZ			14:59																									
ZZZZZZ			15:01																									
ZZZZZZ			15:04																									
ZZZZZZ			15:06																									
ZZZZZZ			15:09																									
ZZZZZZ			15:11																									
ZZZZZZ			15:13																									
CCV 160-158460/31	1		15:16	X																								
CCB 160-158460/32	1		15:19	X																								
LB 160-157719/1-B	1	D	15:22	X																								
LCS 160-158127/2-A	1	T	15:24	X																								
160-9438-1	1	D	15:26	X																								
160-9438-1 SD	5	D	15:29	X																								
ZZZZZZ			15:33																									
160-9438-2	1	D	15:36	X																								
MB 160-158128/1-A	1	T	15:39	X																								
LCS 160-158128/2-A	1	T	15:41	X																								
ZZZZZZ			15:43																									
CCV 160-158460/42	1		15:46	X																								

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Instrument ID: HAA2 Analysis Method: 7470A

Start Date: 11/19/2014 14:03 End Date: 11/20/2014 07:57

Lab Sample Id	D/F	Type	Time	Analytes																								
				Hg																								
CCB 160-158460/43	1		15:48	X																								
ZZZZZZ			15:51																									
ZZZZZZ			15:53																									
ZZZZZZ			15:55																									
160-9438-1	1	T	15:58	X																								
160-9438-2	1	T	16:01	X																								
ZZZZZZ			16:03																									
ZZZZZZ			16:05																									
CCV 160-158460/51	1		16:10	X																								
CCB 160-158460/52	1		16:13	X																								
CCV 160-158460/53	1		07:07	X																								
CCB 160-158460/54	1		07:10	X																								
160-9438-1 MS	1	D	07:33	X																								
160-9438-1 MSD	1	D	07:52	X																								
CCV 160-158460/57	1		07:54	X																								
CCB 160-158460/58	1		07:57	X																								

Prep Types:
D = Dissolved
T = Total/NA

FC 12/8/14

ABATCH: 161515

File: 120514C2

	Pos ID	Rack	Row	Col	Type	Samplename	Comment	Custom ID1	Custom ID2	Custom ID3
1	1001	3	1	1	Unk	160-9134-A-9-A	→ Ca			
2	1002	3	1	2	Unk	MB 160-159967/1-A				
3	1003	3	1	3	Unk	LCS 160-159967/2-				
4	1004	3	1	4	Unk	160-9191-A-1-A				
5	1005	3	1	5	Unk	160-9191-A-2-A				
6	1006	3	1	6	Unk	160-9191-A-3-A				
7	1007	3	1	7	Unk	160-9191-A-4				
8	1008	3	1	8	Unk	160-9191-B-9-A				
9	1009	3	1	9	Unk	160-9191-B-9-A SD	DF=5			
10	1010	3	1	10	Unk	160-9191-B-9-B MS				
11	1011	3	1	11	Unk	160-9191-B-9-C MS				
12	1012	3	1	12	Unk	160-9191-A-10-A				
13	1013	3	1	13	Unk	MB 160-159042/1-A				
14	1014	3	1	14	Unk	LCS 160-159042/2-				
15	1015	3	1	15	Unk	160-9209-D-1-A				
16	1016	3	2	1	Unk	160-9209-A-2-A				
17	1017	3	2	2	Unk	160-9209-B-3-A				
18	1018	3	2	3	Unk	160-9209-B-3-A SD	DF=5			
19	1019	3	2	4	Unk	160-9209-B-3-B MS				
20	1020	3	2	5	Unk	160-9209-B-3-C MS				
21	1021	3	2	6	Unk	160-9209-D-4-A				
22	1022	3	2	7	Unk	160-9209-A-5-A				
23	1023	3	2	8	Unk	160-9209-D-8-A				
24	1024	3	2	9	Unk	160-9209-A-9-A				
25	1025	3	2	10	Unk	160-9209-A-10-A				
26	1026	3	2	11	Unk	160-9209-A-11-A				
27	1027	3	2	12	Unk	160-9209-B-19-A				
28	1028	3	2	13	Unk	160-9209-A-20-B				
29	1029	3	2	14	Unk	MB 160-160137/1-A				
30	1030	3	2	15	Unk	LCS 160-160137/2-				
31	1031	3	3	1	Unk	160-9438-D-1-A	DF=10			
32	1032	3	3	2	Unk	160-9438-D-1-A SD	DF=50			
33	1033	3	3	3	Unk	160-9438-D-1-B MS	DF=10			
34	1034	3	3	4	Unk	160-9438-D-1-C MS	DF=10			
35	1035	3	3	5	Unk	160-9438-C-2-A	DF=10			
36	1036	3	3	6	Unk	~~MB 160-159979/1-A~~				
37	1037	3	3	7	Unk	LCS 160-159979/2-				
38	1038	3	3	8	Unk	160-9438-F-1-B	DF=10			
39	1039	3	3	9	Unk	160-9438-F-1-B SD	DF=50			
40	1040	3	3	10	Unk	160-9438-F-1-C MS	DF=10			
41	1041	3	3	11	Unk	160-9438-F-1-D MS	DF=10			
42	1042	3	3	12	Unk	~~160-9438-F-2-B~~	~~DF=10~~			
43	1043	3	3	13	Unk	LB 160-157827/1-B				
44	1044	3	3	14	Unk	LCS 160-160503/2-				
45	1045	3	3	15	Unk	160-9451-B-1-B	DF=10			
46	1046	3	4	1	Unk	160-9451-B-1-B SD	DF=50			
47	1047	3	4	2	Unk	160-9451-B-1-C MS	DF=10			
48	1048	3	4	3	Unk	160-9451-B-1-D MS	DF=10			
49	1049	3	4	4	Unk	160-9451-B-2-B	DF=10			
50	1050	3	4	5	Unk	160-9451-B-3-B	DF=10			
51	1051	3	4	6	Unk	160-9451-B-4-B				
52	1052	3	4	7	Unk	MB 160-160195/1-A				
53	1053	3	4	8	Unk	LCSSRM 160-16019	DF=2			
54	1054	3	4	9	Unk	160-9613-A-1-E	DF=10			
55	1055	3	4	10	Unk	160-9613-A-1-E SD	DF=50			
56	1056	3	4	11	Unk	160-9613-A-1-F MS	DF=10			
57	1057	3	4	12	Unk	160-9613-A-1-G MS	DF=10			
58	1058	3	4	13	Unk	160-9613-A-2-C	DF=10			
59	1059	3	4	14	Unk	160-9613-A-3-C	DF=10			
60	1060	3	4	15	Unk	160-9613-A-4-C	DF=10			
61	1061	3	5	1	Unk	160-9613-A-5-C	DF=10			
62	1062	3	5	2	Unk	160-9613-A-6-C	DF=10			
63	1063	3	5	3	Unk	160-9613-A-7-C	DF=10			

All

All

All except Ca, Na

All

All except Ca

All

All

All

	Pos ID	Rack	Row	Col	Type	Samplename	Comment	Custom ID1	Custom ID2	Custom ID3
64	1064	3	5	4	Unk	160-9613-A-8-C	DF=10			
65	1065	3	5	5	Unk	160-9613-A-9-C	DF=10			
66	1066	3	5	6	Unk	160-9613-A-10-C	DF=10			
67	1067	3	5	7	Unk	MB 160-159177/1-A				
68	1068	3	5	8	Unk	~~LCS 160-159177/2-~~	rerun			
69	1069	3	5	9	Unk	160-9422-B-1-A	DF=10			
70	1070	3	5	10	Unk	160-9422-B-2-A	DF=10			
71	1071	3	5	11	Unk	160-9422-B-3-A				
72	1072	3	5	12	Unk	160-9422-B-3-A SD	DF=5			
73	1073	3	5	13	Unk	160-9422-B-3-B MS				
74	1074	3	5	14	Unk	160-9422-B-3-C MS				
75	1075	3	5	15	Unk	160-9422-B-3-A PD				
76	1076	3	6	1	Unk	160-9422-B-4-A				
77	1077	3	6	2	Unk	160-9422-B-4-B MS				
78	1078	3	6	3	Unk	160-9422-B-4-C MS				
79	1079	3	6	4	Unk	160-9422-B-5-A				
80	1080	3	6	5	Unk	160-9422-B-6-A				
81	1081	3	6	6	Unk	160-9422-B-7-A				
82	1082	3	6	7	Unk	160-9422-B-8-A				
83	1083	3	6	8	Unk	160-9422-B-9-A				
84	1084	3	6	9	Unk	160-9422-B-10-A				
85	1085	3	6	10	Unk	160-9422-B-11-A				
86	1086	3	6	11	Unk	160-9422-B-12-A				
87	1087	3	6	12	Unk	160-9422-B-13-A				
88	1088	3	6	13	Unk	160-9422-B-14-A				
89	1089	3	6	14	Unk	160-9422-B-15-A				
90	1090	3	6	15	Unk	~~160-9422-B-16-A~~	~~DF=10~~			
91	2001	4	1	1	Unk	160-9422-B-17-A	DF=10			
92	2002	4	1	2	Unk	160-9422-B-18-A				
93	2003	4	1	3	Unk	MB 160-160135/1-A				
94	2004	4	1	4	Unk	LCS 160-160135/2-				
95	2005	4	1	5	Unk	LCSD 160-160135/3				
96	2006	4	1	6	Unk	160-9422-B-16-H	DF=10			
97	2007	4	1	7	Unk	160-9422-B-16-H S	DF=50			
98	2008	4	1	8	Unk	160-9422-B-16-H P	DF=10			
99	2009	4	1	9	Unk	160-9422-B-19-E	DF=10			
100	2010	4	1	10	Unk	~~160-9422-B-20-C~~	~~DF=10~~			
101	2011	4	1	11	Unk	160-9422-B-21-C	DF=10			
102	2012	4	1	12	Unk	160-9422-B-22-C	DF=10			
103	2013	4	1	13	Unk	~~MB~~				
104	2014	4	1	14	Unk	LCS				
105	2015	4	1	15	Unk	LCSD				
106	2016	4	2	1	Unk	~~9216-A-1~~				
107	2017	4	2	2	Unk	~~9216-A-2~~				
108	2018	4	2	3	Unk	~~9216-A-3~~				
109	2019	4	2	4	Unk	MB257FE				
110	2020	4	2	5	Unk	LCS257FE				
111	2021	4	2	6	Unk	LCSD257FE				
112	2022	4	2	7	Unk	9275-A-2FE				
113	2023	4	2	8	Unk	9275-A-3FE				
114	2024	4	2	9	Unk	~~MB258NI~~				
115	2025	4	2	10	Unk	LCS258NI				
116	2026	4	2	11	Unk	LCSD258NI				
117	2027	4	2	12	Unk	~~9275-A-2NI~~				
118	2028	4	2	13	Unk	~~9275-A-3NI~~				

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	0.000289	1.796017	0.000000	1.000000
Al 396.152 { 85}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	-0.000565	0.202280	0.000000	1.000000
As 189.042 {478}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	0.000061	0.123605	0.000000	1.000000
B 249.678 {135}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	0.000932	0.157713	0.000000	1.000000
Ba 455.403 { 74}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	0.021750	14.153738	0.000000	1.000000
Be 313.042 {108}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	0.001123	17.762098	0.000000	1.000000
Bi 223.061 {451}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	0.000309	0.111416	0.000000	1.000000
Ca 184.006 {483}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	-0.002531	0.234033	0.000000	1.000000
Cd 228.802 {447}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	-0.000107	1.789296	0.000000	1.000000
Co 228.616 {448}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	0.000095	0.755573	0.000000	1.000000
Cr 283.563 {119}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	0.001408	0.270685	0.000000	1.000000
Cu 217.894 {455}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	0.000002	0.148174	0.000000	1.000000
Fe 259.940 {130}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	0.000361	0.292923	0.000000	1.000000
K 766.490 { 44}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	-0.002426	0.142828	0.000000	1.000000
Li 670.784 { 50}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	-0.014319	4.000402	0.000000	1.000000
Mg 279.806 {121}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	-0.001880	0.050525	0.000000	1.000000
Mn 257.610 {131}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	0.000202	1.879556	0.000000	1.000000
Mo 202.030 {467}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	-0.000190	0.818783	0.000000	1.000000
Na 589.592 { 57}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	-0.039517	0.481997	0.000000	1.000000
Ni 221.647 {452}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	0.000174	1.155643	0.000000	1.000000
P 177.495 {490}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	0.000083	0.138895	0.000000	1.000000
Pb 220.353 {453}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	-0.000449	0.226334	0.000000	1.000000
S 182.034 {485}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	-0.000216	0.060188	0.000000	1.000000
Sb 206.833 {463}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	-0.000360	0.134980	0.000000	1.000000
Se 196.090 {472}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	0.000083	0.083166	0.000000	1.000000
Si 251.611 {134}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	0.002325	0.088959	0.000000	1.000000
Sn 189.989 {478}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	0.000080	0.273595	0.000000	1.000000
Sr 407.771 { 83}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	-0.003506	21.897175	0.000000	1.000000
Th 283.231 {119}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	0.003281	0.172760	0.000000	1.000000
Ti 334.941 {101}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	0.003707	1.379892	0.000000	1.000000
Tl 190.856 {477}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	-0.000457	0.168198	0.000000	1.000000
U 367.007 { 92}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	0.010817	0.101915	0.000000	1.000000
V 290.882 {116}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	-0.000915	0.300445	0.000000	1.000000
Y 371.030 { 91}*	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	1.000000	0.000000	0.000000	1.000000
Zn 213.856 {458}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	0.000612	1.050718	0.000000	1.000000

Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.999891	0.000204	0.000523	0.001745	OK.	1.000000	0.000000	1	0
Al 396.152 { 85}	0.999984	0.000281	0.007455	0.024849	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999636	0.000058	0.000902	0.003006	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999212	0.000344	0.002832	0.009439	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	1.000000	0.000209	0.000142	0.000473	OK.	1.000000	0.000000	1	0
Be 313.042 {108}	0.999901	0.003057	0.000037	0.000124	OK.	1.000000	0.000000	1	0
Bi 223.061 {451}	0.999553	0.000260	0.001706	0.005688	OK.	1.000000	0.000000	1	0
Ca 184.006 {483}	0.999164	0.005258	0.000460	0.001534	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.999600	0.000625	0.000103	0.000345	OK.	1.000000	0.000000	1	0
Co 228.616 {448}	0.999255	0.001134	0.000191	0.000638	OK.	1.000000	0.000000	1	0
Cr 283.563 {119}	0.999632	0.000128	0.000685	0.002283	OK.	1.000000	0.000000	1	0
Cu 217.894 {455}	0.999559	0.000121	0.001178	0.003926	OK.	1.000000	0.000000	1	0
Fe 259.940 {130}	0.999955	0.000479	0.001511	0.005037	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999995	0.000544	0.022389	0.074631	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999993	0.000577	0.000827	0.002755	OK.	1.000000	0.000000	1	0
Mg 279.806 {121}	0.999975	0.000195	0.010221	0.034070	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999908	0.000540	0.000252	0.000840	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999633	0.000346	0.000164	0.000547	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	1.000000	0.000206	0.006905	0.023018	OK.	1.000000	0.000000	1	0
Ni 221.647 {452}	0.999246	0.001557	0.000178	0.000592	OK.	1.000000	0.000000	1	0
P 177.495 {490}	0.998913	0.001775	0.000750	0.002501	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.999290	0.000148	0.000778	0.002592	OK.	1.000000	0.000000	1	0
S 182.034 {485}	0.999784	0.001557	0.001698	0.005659	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999736	0.000025	0.001255	0.004183	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.999685	0.000020	0.001523	0.005076	OK.	1.000000	0.000000	1	0
Si 251.611 {134}	1.000000	0.000008	0.005179	0.017263	OK.	1.000000	0.000000	1	0
Sn 189.989 {478}	0.999375	0.000531	0.000354	0.001179	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999991	0.001162	0.000058	0.000193	OK.	1.000000	0.000000	1	0
Th 283.231 {119}	0.999689	0.000336	0.002516	0.008386	OK.	1.000000	0.000000	1	0
Ti 334.941 {101}	0.999986	0.000178	0.000640	0.002133	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.998924	0.000085	0.000767	0.002556	OK.	1.000000	0.000000	1	0
U 367.007 { 92}	0.999589	0.000429	0.010669	0.035563	OK.	1.000000	0.000000	1	0
V 290.882 {116}	0.999915	0.000152	0.002455	0.008182	OK.	1.000000	0.000000	1	0
Y 371.030 { 91}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 213.856 {458}	0.999450	0.000857	0.000105	0.000350	OK.	1.000000	0.000000	1	0

Sample Name: CALBLK1 Acquired: 12/5/2014 12:11:09 Type: Cal
Method: 2014v4(v7) Mode: IR Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.0003	-.0006	.0001	.0009	.0217	.0011	.0003	-.0026	-.0001
Stddev	.0003	.0012	.0001	.0004	.0020	.0005	.0001	.0002	.0002
%RSD	106.0	215.6	99.37	37.74	9.203	47.81	34.96	6.098	146.2
#1	.0006	-.0019	.0001	.0008	.0205	.0014	.0004	-.0027	.0000
#2	.0000	-.0002	.0000	.0007	.0241	.0005	.0003	-.0026	-.0001
#3	.0003	.0004	.0000	.0013	.0206	.0015	.0002	-.0024	-.0003

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.0001	.0014	.0000	.0004	-.0024	-.0143	-.0019	.0002	-.0002
Stddev	.0001	.0001	.0000	.0002	.0007	.0025	.0006	.0004	.0002
%RSD	120.3	10.54	2698.	51.98	27.28	17.36	33.54	221.6	80.39
#1	.0000	.0015	.0000	.0004	-.0024	-.0115	-.0012	.0001	-.0003
#2	.0002	.0012	.0000	.0002	-.0018	-.0160	-.0020	.0007	-.0002
#3	.0001	.0015	.0000	.0005	-.0031	-.0156	-.0024	-.0002	.0000

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.0395	.0002	.0001	-.0004	-.0002	-.0004	.0001	.0023	.0001
Stddev	.0062	.0001	.0000	.0001	.0001	.0001	.0000	.0003	.0000
%RSD	15.60	64.44	42.34	22.19	25.96	35.63	18.23	13.07	38.90
#1	-.0400	.0002	.0001	-.0005	-.0002	-.0005	.0001	.0025	.0000
#2	-.0331	.0003	.0001	-.0003	-.0002	-.0004	.0001	.0020	.0001
#3	-.0454	.0001	.0001	-.0005	-.0003	-.0002	.0001	.0025	.0001

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.0035	.0033	.0037	-.0005	.0108	-.0009	.0006
Stddev	.0009	.0004	.0006	.0001	.0008	.0009	.0001
%RSD	24.87	12.77	15.02	26.43	7.145	97.33	11.27
#1	-.0038	.0030	.0036	-.0003	.0113	-.0005	.0005
#2	-.0042	.0038	.0043	-.0005	.0113	-.0019	.0006
#3	-.0025	.0030	.0032	-.0006	.0099	-.0003	.0007

Sample Name: CALBLK1 Acquired: 12/5/2014 12:11:09 Type: Cal
Method: 2014v4(v7) Mode: IR Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_3710
Units	Cts/S
Avg	4509.6
Stddev	30.3
%RSD	.67268
#1	4475.4
#2	4533.1
#3	4520.3

Sample Name: CAL 1 Acquired: 12/5/2014 12:15:05 Type: Cal
Method: 2014v4(v7) Mode: IR Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.0180**	**.0389**	**.0013**	**.0091**	**.7341**	**.0924**	**.0234**	**.2602**	**.0089**
Stddev	.0008	.0005	.0000	.0003	.0021	.0011	.0001	.0005	.0001
%RSD	4.431	1.349	2.515	3.139	.2907	1.226	.3641	.1970	1.129
#1	.0188	.0393	.0012	.0090	.7329	.0911	.0233	.2607	.0090
#2	.0172	.0392	.0013	.0095	.7328	.0928	.0235	.2597	.0088
#3	.0180	.0383	.0013	.0090	.7365	.0933	.0234	.2603	.0090

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.0419**	**.0036**	**.0042**	**.0305**	**.7057**	**.1908**	**.0473**	**.0292**	**.0340**
Stddev	.0001	.0001	.0001	.0003	.0016	.0028	.0010	.0007	.0002
%RSD	.2766	3.864	2.022	1.108	.2250	1.480	2.100	2.268	.5329
#1	.0418	.0037	.0043	.0308	.7039	.1876	.0470	.0295	.0338
#2	.0419	.0035	.0042	.0302	.7067	.1917	.0484	.0285	.0341
#3	.0420	.0037	.0041	.0304	.7065	.1930	.0465	.0298	.0341

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.4391**	**.0511**	**.0356**	**.0024**	**.3027**	**.0009**	**.0013**	**.0381**	**.0295**
Stddev	.0021	.0001	.0002	.0001	.0007	.0002	.0001	.0007	.0001
%RSD	.4856	.2254	.6745	4.178	.2147	20.49	9.831	1.769	.4974
#1	.4366	.0513	.0358	.0025	.3022	.0008	.0015	.0378	.0293
#2	.4400	.0511	.0354	.0023	.3025	.0008	.0012	.0376	.0295
#3	.4406	.0511	.0355	.0023	.3035	.0011	.0013	.0388	.0296

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.1108**	**.0370**	**.0305**	**.0033**	**.0678**	**.0148**	**.0225**
Stddev	.0020	.0002	.0003	.0001	.0013	.0005	.0001
%RSD	1.766	.4538	1.062	1.656	1.908	3.342	.6238
#1	.1131	.0371	.0302	.0033	.0675	.0147	.0223
#2	.1097	.0368	.0308	.0033	.0668	.0143	.0225
#3	.1097	.0372	.0304	.0032	.0693	.0153	.0226

Sample Name: CAL 1 Acquired: 12/5/2014 12:15:05 Type: Cal
Method: 2014v4(v7) Mode: IR Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_3710
Units	Cts/S
Avg	4663.8
Stddev	14.0
%RSD	.30042
#1	4669.2
#2	4674.3
#3	4647.9

Sample Name: Cal 2 Acquired: 12/5/2014 12:18:59 Type: Cal
Method: 2014v4(v7) Mode: IR Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1.817**	**10.03**	**.6413**	**.7973**	**70.79**	**90.61**	**.5806**	**12.35**	**9.383**
Stddev	.018	.01	.0043	.0017	.64	.76	.0040	.10	.066
%RSD	.9772	.0645	.6648	.2079	.8997	.8419	.6965	.7763	.7004
#1	1.797	10.04	.6364	.7989	71.35	89.94	.5760	12.24	9.307
#2	1.823	10.03	.6440	.7956	70.91	90.45	.5834	12.40	9.422
#3	1.832	10.03	.6435	.7974	70.10	91.44	.5825	12.41	9.420

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3.990**	**1.411**	**.7714**	**14.84**	**7.114**	**19.89**	**2.549**	**9.577**	**.8491**
Stddev	.029	.011	.0048	.05	.014	.09	.020	.035	.0040
%RSD	.7152	.7592	.6278	.3372	.1995	.4704	.7995	.3670	.4761
#1	3.957	1.398	.7659	14.81	7.127	19.99	2.529	9.548	.8445
#2	4.008	1.416	.7751	14.81	7.099	19.86	2.547	9.567	.8516
#3	4.004	1.418	.7731	14.90	7.116	19.81	2.570	9.616	.8514

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**24.08**	**6.092**	**7.403**	**1.192**	**3.098**	**.1436**	**.0859**	**.4470**	**1.435**
Stddev	.10	.042	.053	.007	.017	.0006	.0004	.0022	.010
%RSD	.4296	.6865	.7161	.5985	.5416	.4395	.5143	.4914	.6717
#1	24.19	6.043	7.342	1.184	3.079	.1429	.0854	.4446	1.424
#2	24.05	6.116	7.436	1.196	3.111	.1440	.0863	.4473	1.440
#3	24.00	6.116	7.431	1.197	3.105	.1438	.0861	.4489	1.441

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**110.1**	**.8979**	**6.954**	**.1761**	**.6374**	**1.528**	**5.520**
Stddev	.6	.0097	.005	.0014	.0030	.001	.037
%RSD	.5229	1.083	.0748	.8227	.4751	.0873	.6741
#1	110.4	.8866	6.951	.1745	.6340	1.529	5.477
#2	110.5	.9038	6.951	.1768	.6381	1.529	5.541
#3	109.5	.9032	6.960	.1771	.6399	1.527	5.543

Sample Name: Cal 2 Acquired: 12/5/2014 12:18:59 Type: Cal
Method: 2014v4(v7) Mode: IR Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_3710
Units	Cts/S
Avg	4317.3
Stddev	31.6
%RSD	.73231
#1	4350.6
#2	4313.7
#3	4287.6

Sample Name: Cal 3 Acquired: 12/5/2014 12:22:48 Type: Cal
Method: 2014v4(v7) Mode: IR Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3.523**	**20.31**	**1.212**	**1.574**	**141.6**	**175.9**	**1.090**	**22.72**	**17.68**
Stddev	.013	.04	.006	.003	1.9	1.3	.006	.08	.08
%RSD	.3599	.2208	.5317	.1920	1.307	.7118	.5433	.3558	.4623
#1	3.514	20.33	1.207	1.574	143.7	175.6	1.086	22.64	17.61
#2	3.517	20.34	1.209	1.577	140.7	174.8	1.088	22.74	17.66
#3	3.537	20.26	1.219	1.571	140.3	177.3	1.097	22.80	17.77

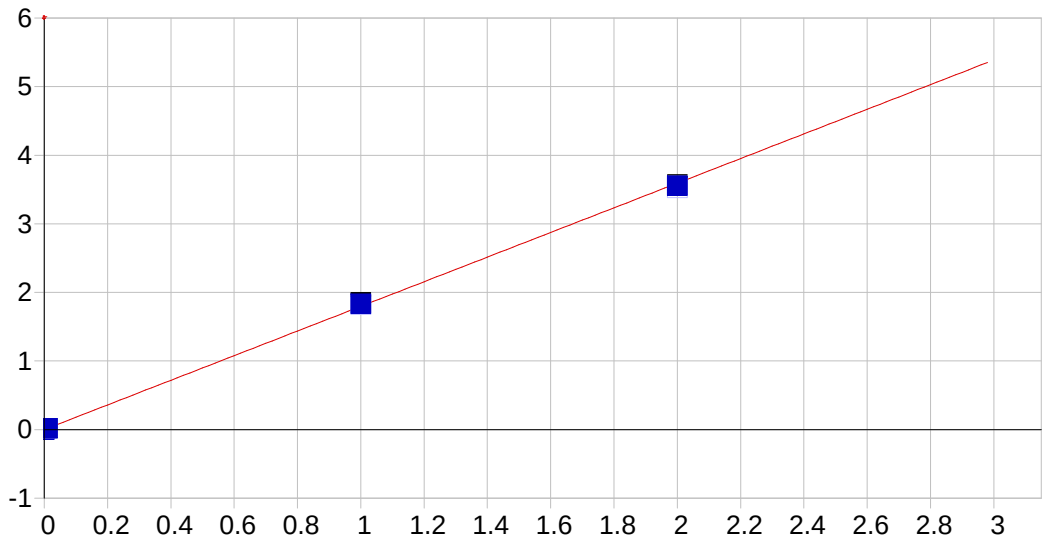
Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**7.366**	**2.664**	**1.451**	**29.10**	**14.31**	**40.08**	**5.028**	**18.62**	**1.605**
Stddev	.041	.017	.007	.03	.01	.12	.018	.03	.011
%RSD	.5562	.6432	.4560	.1034	.1017	.2997	.3514	.1505	.7056
#1	7.328	2.646	1.446	29.09	14.31	40.18	5.008	18.58	1.598
#2	7.360	2.665	1.448	29.07	14.33	40.12	5.033	18.64	1.600
#3	7.410	2.680	1.458	29.13	14.30	39.95	5.042	18.63	1.618

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**48.14**	**11.24**	**13.43**	**2.205**	**5.927**	**.2740**	**.1629**	**.8919**	**2.667**
Stddev	.15	.06	.06	.015	.031	.0013	.0007	.0027	.018
%RSD	.3063	.5428	.4368	.6719	.5245	.4577	.4410	.3074	.6686
#1	48.31	11.19	13.37	2.193	5.907	.2729	.1627	.8919	2.653
#2	48.10	11.22	13.43	2.201	5.912	.2737	.1623	.8946	2.660
#3	48.02	11.31	13.49	2.222	5.963	.2754	.1637	.8892	2.687

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**218.3**	**1.701**	**13.75**	**.3207**	**1.193**	**2.976**	**10.30**
Stddev	3.4	.002	.02	.0016	.003	.002	.06
%RSD	1.568	.1269	.1364	.4979	.2146	.0657	.6060
#1	217.4	1.701	13.77	.3190	1.192	2.975	10.24
#2	215.4	1.699	13.76	.3210	1.192	2.978	10.28
#3	222.1	1.703	13.73	.3222	1.196	2.975	10.37

Sample Name: Cal 3 Acquired: 12/5/2014 12:22:48 Type: Cal
Method: 2014v4(v7) Mode: IR Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_3710
Units	Cts/S
Avg	4359.5
Stddev	33.8
%RSD	.77482
#1	4390.5
#2	4364.5
#3	4323.5

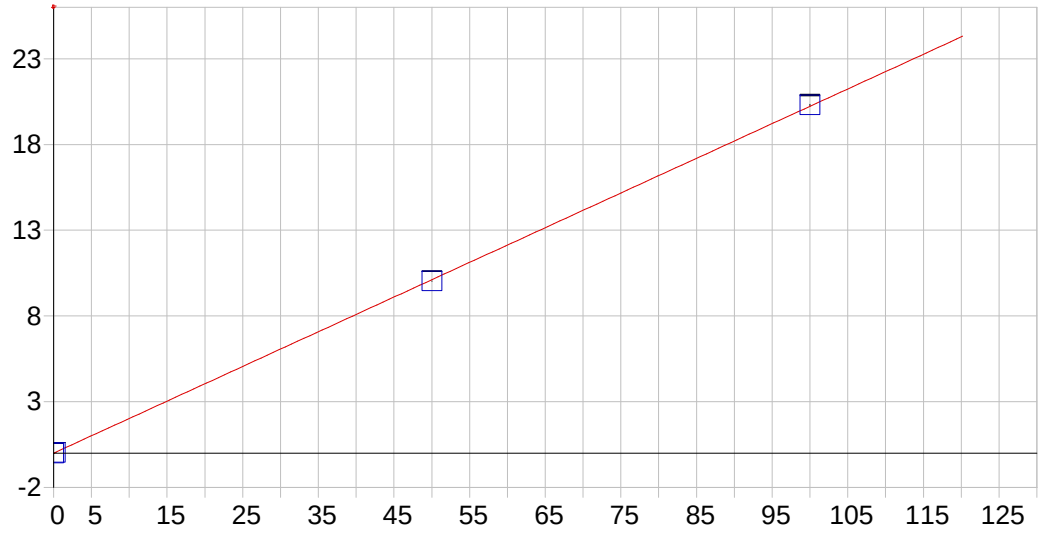


Ag 328.068 {103}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000289	Re-Slope:	1.000000
A1 (Gain):	1.796017	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999891	Status:	OK.
Std Error of Est:	0.000204		
Predicted MDL:	0.000523		
Predicted MQL:	0.001745		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00029	.000	1
CAL 1	.01000	.01023	.000	2.26	.01801	.001	1
Cal 2	1.0000	1.0206	.021	2.06	1.8173	.018	1
Cal 3	2.0000	1.9792	-.021	-1.04	3.5229	.013	1



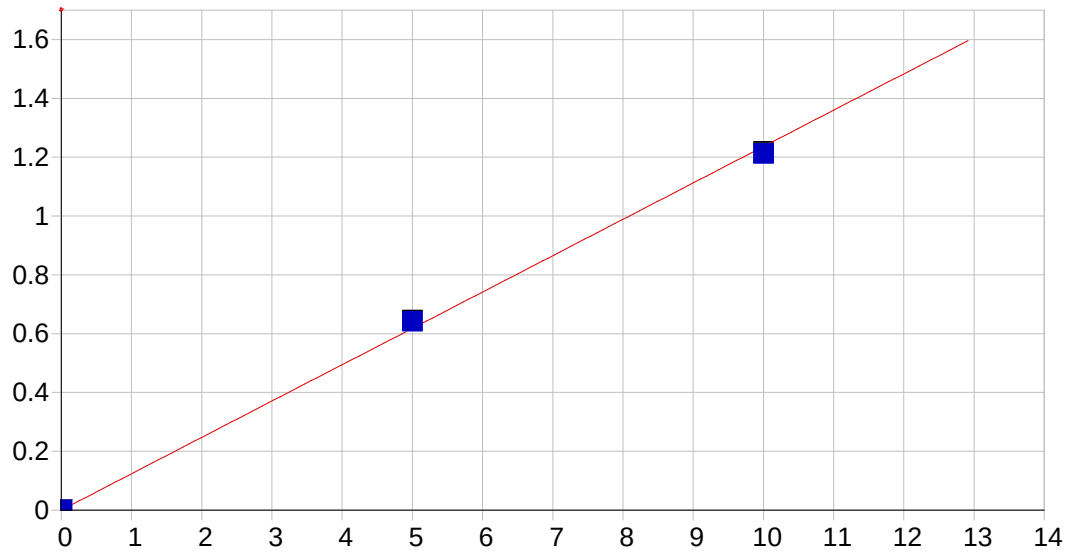
Al 396.152 { 85}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000565	Re-Slope:	1.000000

A1 (Gain):	0.202280	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999984	Status:	OK.
Std Error of Est:	0.000281		
Predicted MDL:	0.007455		
Predicted MQL:	0.024849		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00001	.000	.000	-.00056	.001	1
CAL 1	.20000	.19520	-.005	-2.40	.03892	.001	1
Cal 2	50.000	49.605	-.395	-.789	10.034	.006	1
Cal 3	100.00	100.40	.399	.399	20.308	.045	1

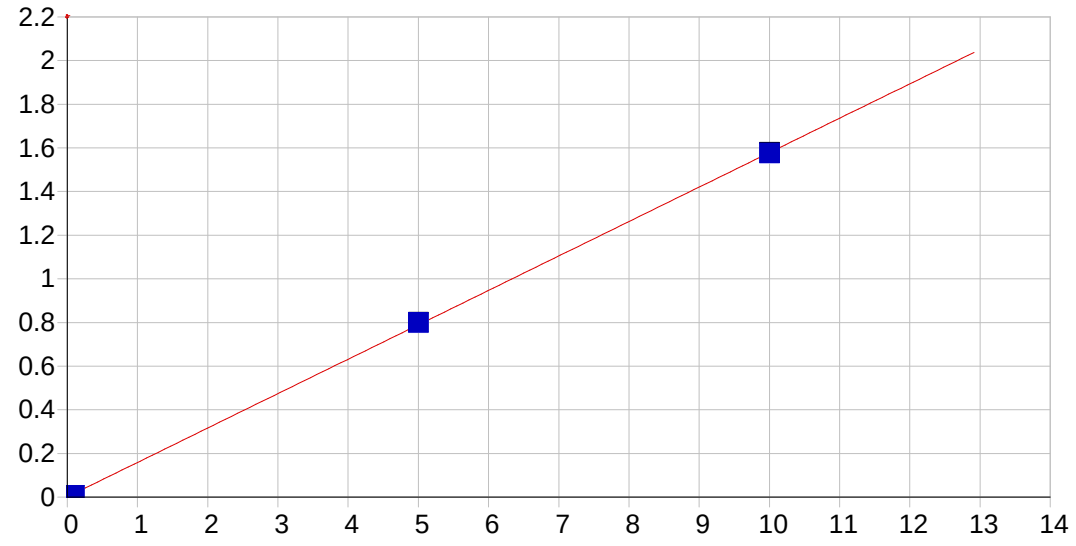


As 189.042 {478}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000061	Re-Slope:	1.000000
A1 (Gain):	0.123605	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999636	Status:	OK.
Std Error of Est:	0.000058		
Predicted MDL:	0.000902		
Predicted MQL:	0.003006		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00006	.000	1
CAL 1	.01000	.00987	.000	-1.29	.00128	.000	1
Cal 2	5.0000	5.1907	.191	3.81	.64127	.004	1
Cal 3	10.000	9.8094	-.191	-1.91	1.2118	.006	1

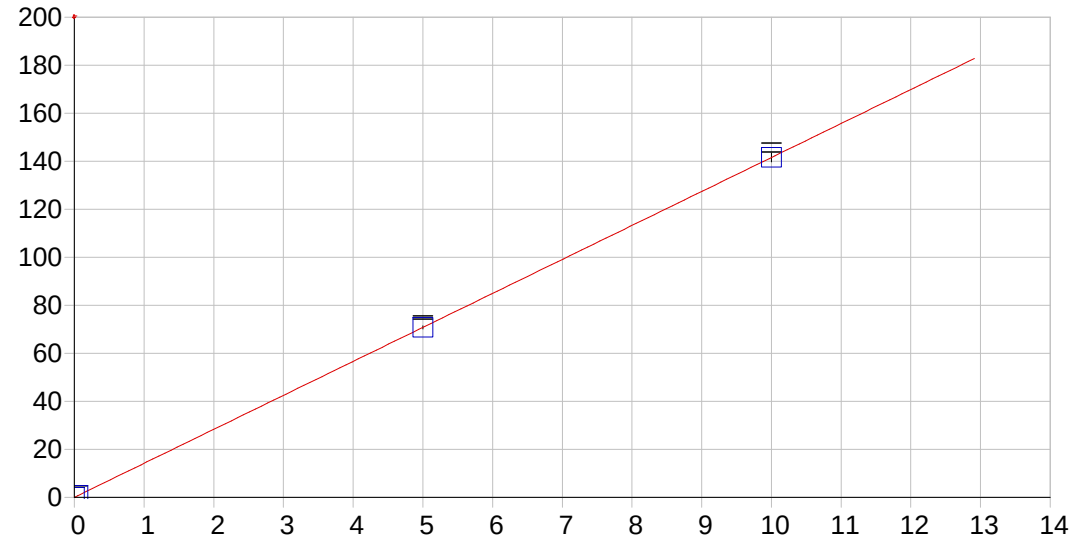


B 249.678 {135}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000932	Re-Slope:	1.000000
A1 (Gain):	0.157713	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999212	Status:	OK.
Std Error of Est:	0.000344		
Predicted MDL:	0.002832		
Predicted MQL:	0.009439		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00005	.000	.000	.00094	.000	1
CAL 1	.10000	.05201	-.048	-48.0	.00915	.000	1
Cal 2	5.0000	5.0585	.058	1.17	.79731	.002	1
Cal 3	10.000	9.9896	-.010	-.104	1.5736	.003	1



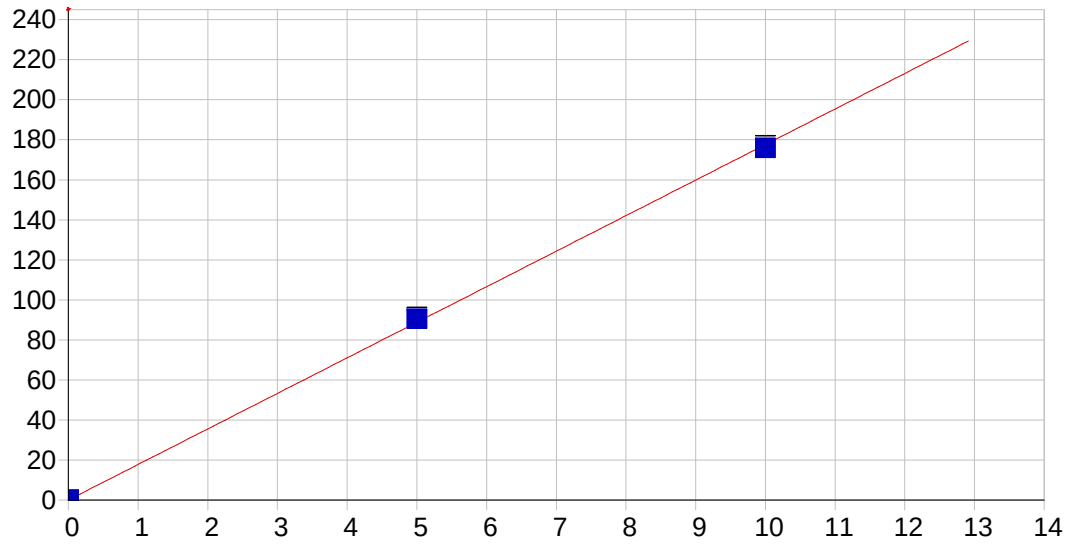
Ba 455.403 { 74}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.021750	Re-Slope:	1.000000
A1 (Gain):	14.153738	Y-int:	0.000000

A2 (Curvature):	0.000000					
n (Exponent):	1.000000					
Correlation:	1.000000		Status:	OK.		
Std Error of Est:	0.000209					
Predicted MDL:	0.000142					
Predicted MQL:	0.000473					

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.02175	.002	1
CAL 1	.05000	.05033	.000	.657	.73409	.002	1
Cal 2	5.0000	4.9997	.000	-.006	70.786	.637	1
Cal 3	10.000	10.0000	.000	.000	141.56	1.85	1

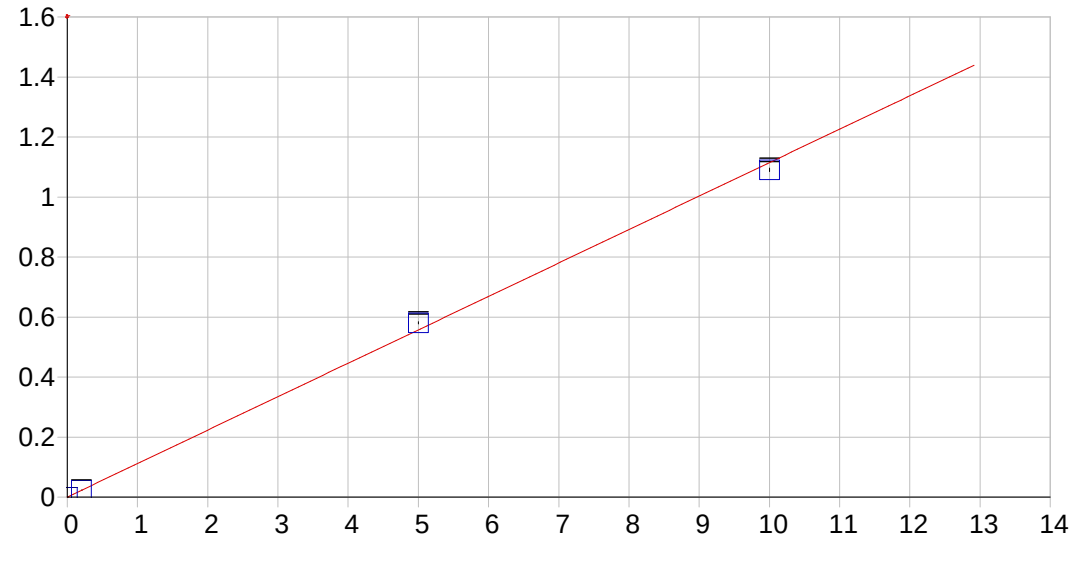


Be 313.042 {108}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.001123	Re-Slope:	1.000000
A1 (Gain):	17.762098	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999901	Status:	OK.
Std Error of Est:	0.003057		
Predicted MDL:	0.000037		
Predicted MQL:	0.000124		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00112	.001	1
CAL 1	.00500	.00512	.000	2.38	.09238	.001	1
Cal 2	5.0000	5.0993	.099	1.99	90.609	.763	1
Cal 3	10.000	9.9005	-.099	-.995	175.92	1.25	1

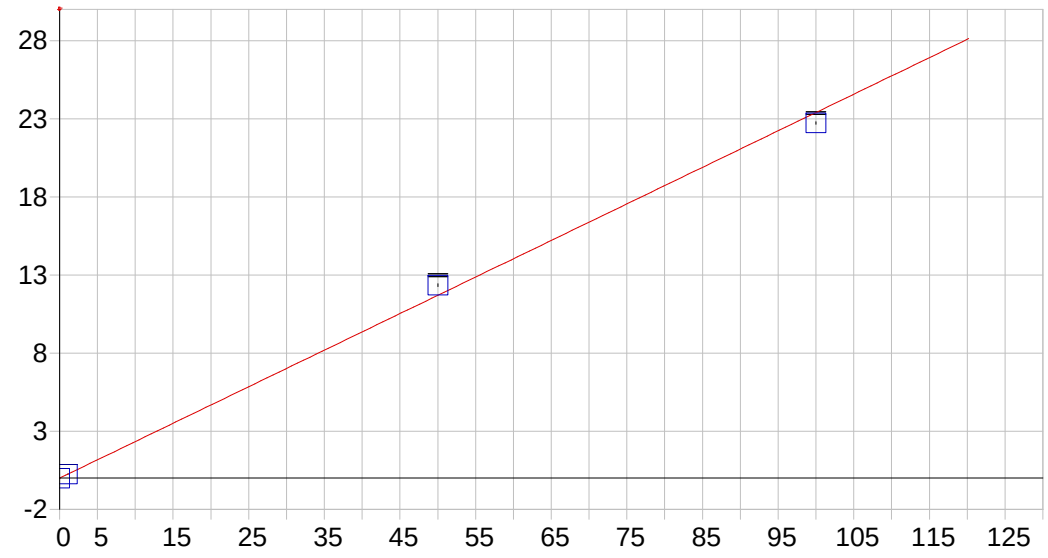


Bi 223.061 {451}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000309	Re-Slope:	1.000000
A1 (Gain):	0.111416	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999553	Status:	OK.
Std Error of Est:	0.000260		
Predicted MDL:	0.001706		
Predicted MQL:	0.005688		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	-.00001	.000	.000	.00031	.000	1
CAL 1	.20000	.20719	.007	3.59	.02339	.000	1
Cal 2	5.0000	5.2085	.209	4.17	.58062	.004	1
Cal 3	10.000	9.7843	-.216	-2.16	1.0904	.006	1



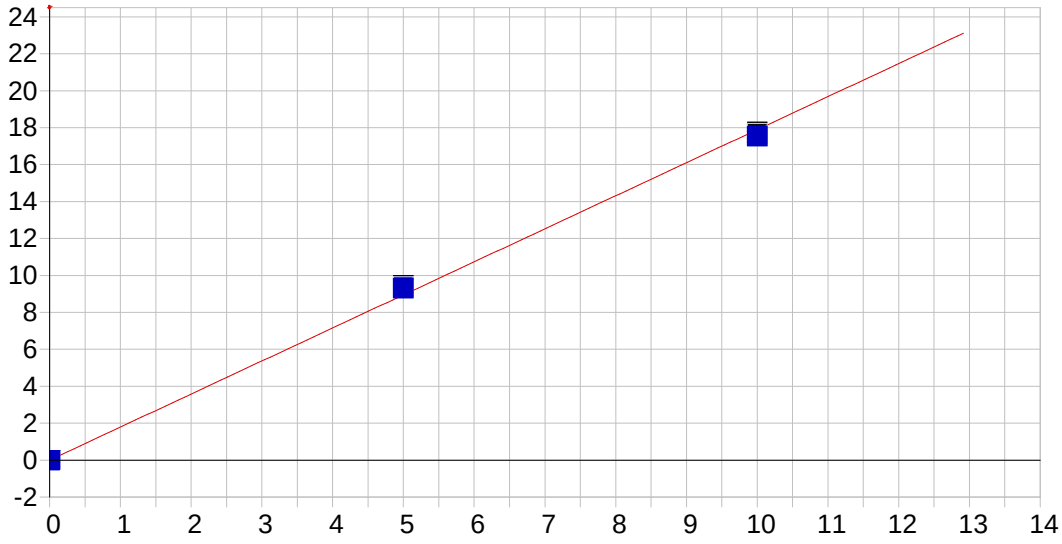
Ca 184.006 {483}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.002531	Re-Slope:	1.000000
A1 (Gain):	0.234033	Y-int:	0.000000

A2 (Curvature):		0.000000					
n (Exponent):		1.000000					
Correlation:		0.999164		Status:	OK.		
Std Error of Est:		0.005258					
Predicted MDL:		0.000460					
Predicted MQL:		0.001534					

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	-.00015	.000	.000	-.00257	.000	1
CAL 1	1.0000	1.1228	.123	12.3	.26025	.001	1
Cal 2	50.000	52.773	2.77	5.55	12.348	.096	1
Cal 3	100.00	97.105	-2.90	-2.90	22.723	.081	1

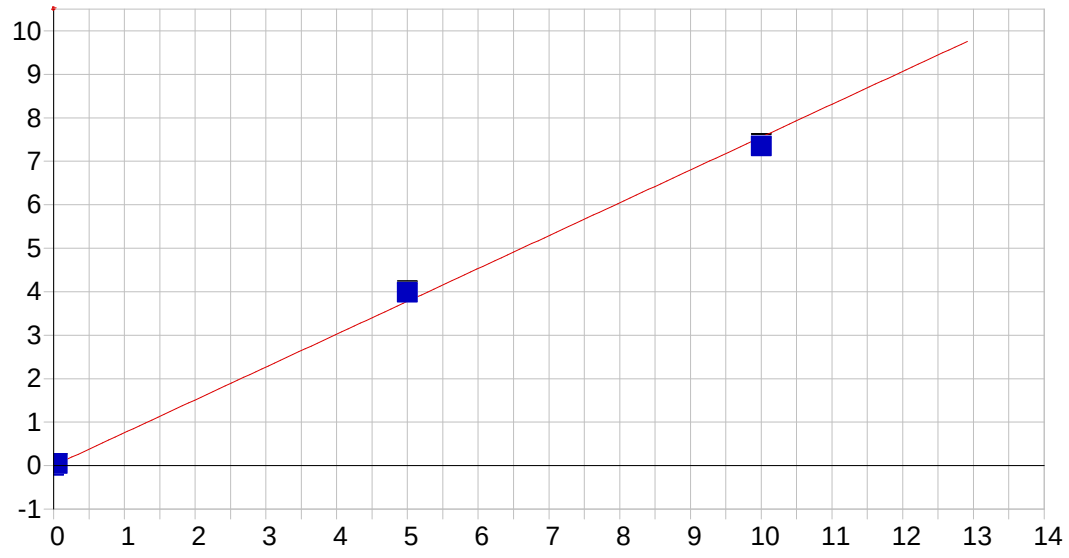


Cd 228.802 {447}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000107	Re-Slope:	1.000000
A1 (Gain):	1.789296	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999600	Status:	OK.
Std Error of Est:	0.000625		
Predicted MDL:	0.000103		
Predicted MQL:	0.000345		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	-.00011	.000	1
CAL 1	.00500	.00502	.000	.359	.00893	.000	1
Cal 2	5.0000	5.2018	.202	4.04	9.3829	.066	1
Cal 3	10.000	9.7982	-.202	-2.02	17.683	.082	1

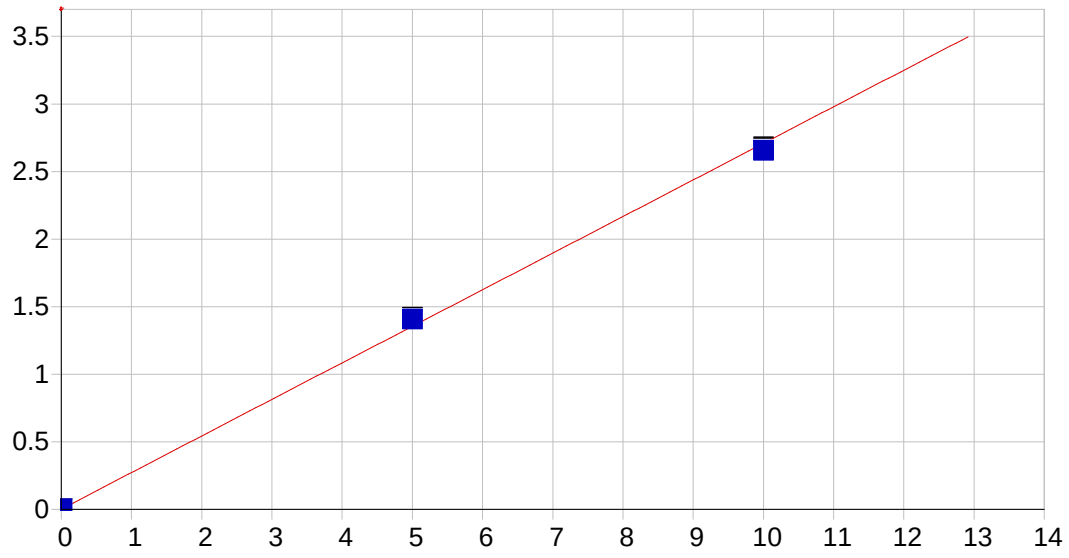


Co 228.616 {448}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000095	Re-Slope:	1.000000
A1 (Gain):	0.755573	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999255	Status:	OK.
Std Error of Est:	0.001134		
Predicted MDL:	0.000191		
Predicted MQL:	0.000638		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	-.00001	.000	.000	.00009	.000	1
CAL 1	.05000	.05527	.005	10.5	.04189	.000	1
Cal 2	5.0000	5.2690	.269	5.38	3.9898	.029	1
Cal 3	10.000	9.7257	-.274	-2.74	7.3658	.041	1



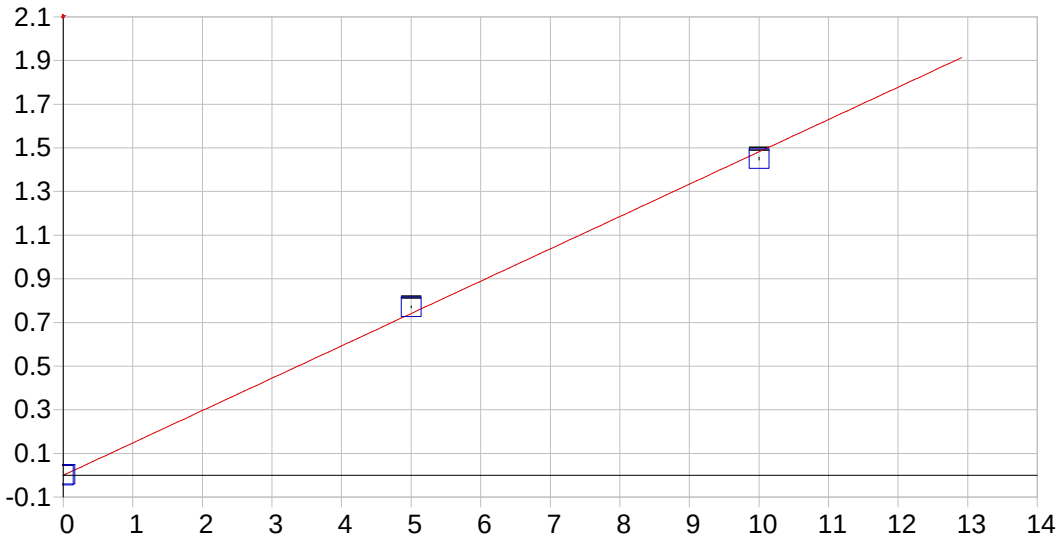
Cr 283.563 {119}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.001408	Re-Slope:	1.000000
A1 (Gain):	0.270685	Y-int:	0.000000

A2 (Curvature):	0.000000					
n (Exponent):	1.000000					
Correlation:	0.999632		Status:	OK.		
Std Error of Est:	0.000128					
Predicted MDL:	0.000685					
Predicted MQL:	0.002283					

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00141	.000	1
CAL 1	.01000	.01004	.000	.352	.00362	.000	1
Cal 2	5.0000	5.1925	.193	3.85	1.4107	.011	1
Cal 3	10.000	9.8075	-.193	-1.93	2.6637	.017	1

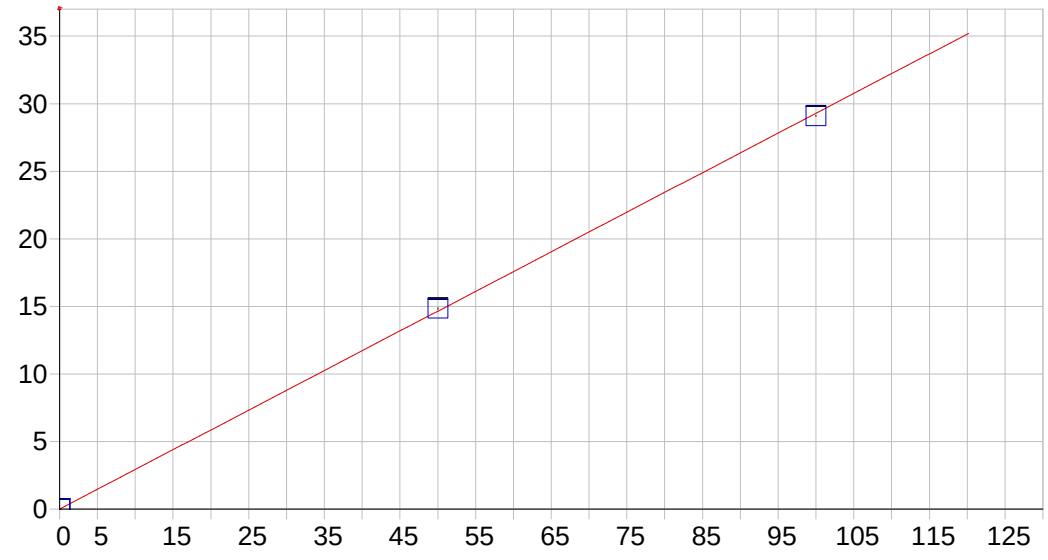


Cu 217.894 {455}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000002	Re-Slope:	1.000000
A1 (Gain):	0.148174	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999559	Status:	OK.
Std Error of Est:	0.000121		
Predicted MDL:	0.001178		
Predicted MQL:	0.003926		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00000	.000	1
CAL 1	.02500	.02825	.003	13.0	.00419	.000	1
Cal 2	5.0000	5.2058	.206	4.12	.77136	.005	1
Cal 3	10.000	9.7910	-.209	-2.09	1.4508	.007	1

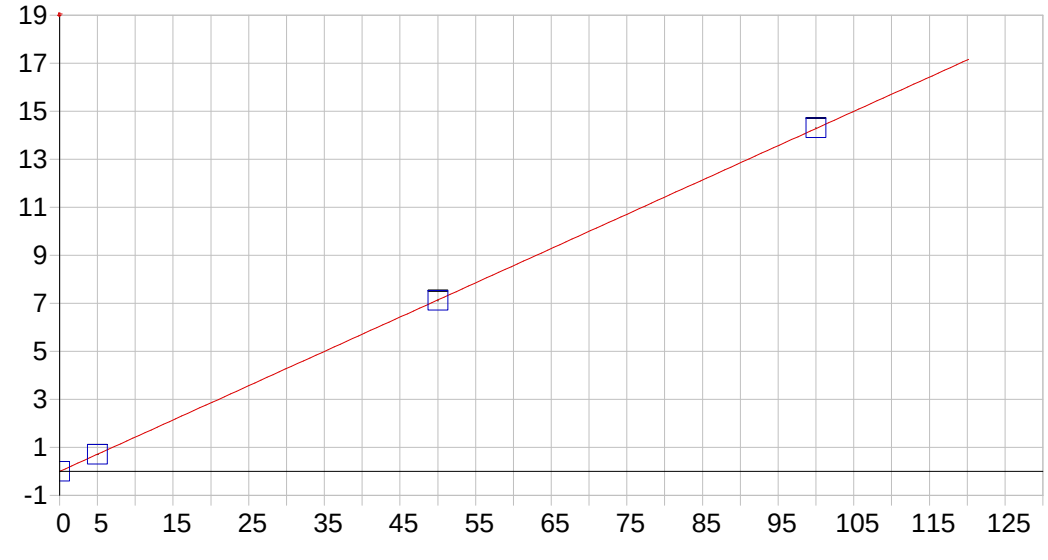


Fe 259.940 {130}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000361	Re-Slope:	1.000000
A1 (Gain):	0.292923	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999955	Status:	OK.
Std Error of Est:	0.000479		
Predicted MDL:	0.001511		
Predicted MQL:	0.005037		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00036	.000	1
CAL 1	.10000	.10284	.003	2.84	.03048	.000	1
Cal 2	50.000	50.665	.665	1.33	14.841	.050	1
Cal 3	100.00	99.332	-.668	-.668	29.097	.030	1



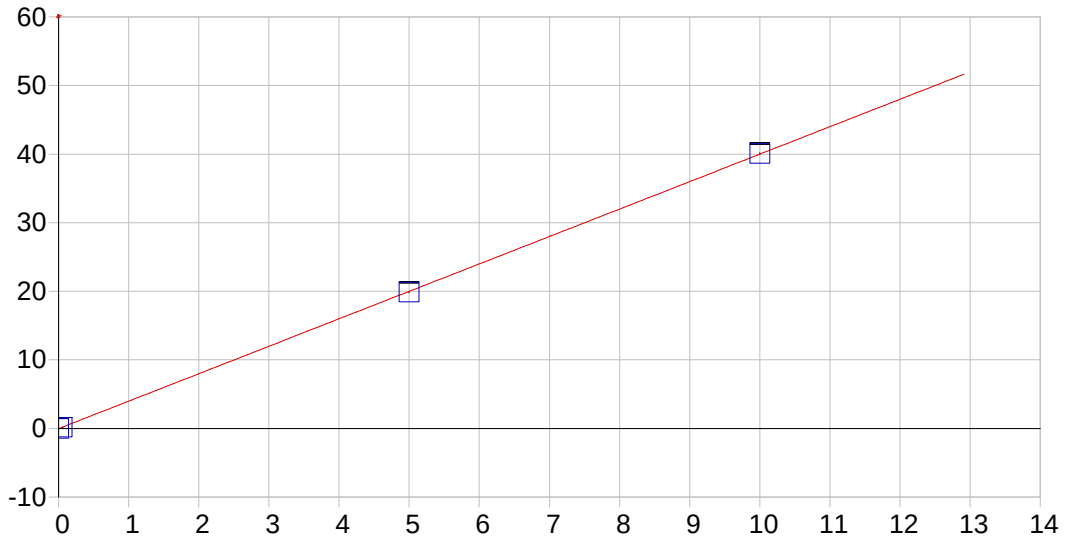
K 766.490 { 44}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.002426	Re-Slope:	1.000000
A1 (Gain):	0.142828	Y-int:	0.000000

A2 (Curvature):		0.000000					
n (Exponent):		1.000000					
Correlation:		0.999995		Status:	OK.		
Std Error of Est:		0.000544					
Predicted MDL:		0.022389					
Predicted MQL:		0.074631					

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00005	.000	.000	-.00242	.001	1
CAL 1	5.0000	4.9578	-.042	-.845	.70568	.002	1
Cal 2	50.000	49.824	-.176	-.352	7.1138	.014	1
Cal 3	100.00	100.22	.218	.218	14.312	.015	1

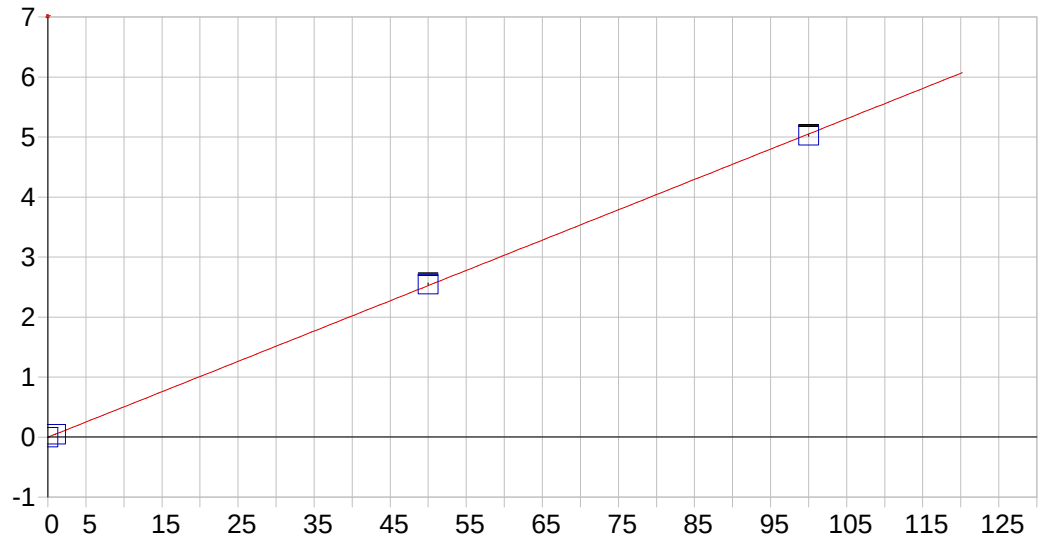


Li 670.784 { 50}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.014319	Re-Slope:	1.000000
A1 (Gain):	4.000402	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999993	Status:	OK.
Std Error of Est:	0.000577		
Predicted MDL:	0.000827		
Predicted MQL:	0.002755		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	-.01432	.002	1
CAL 1	.05000	.05126	.001	2.53	.19076	.003	1
Cal 2	5.0000	4.9753	-.025	-.493	19.889	.094	1
Cal 3	10.000	10.023	.023	.234	40.083	.120	1

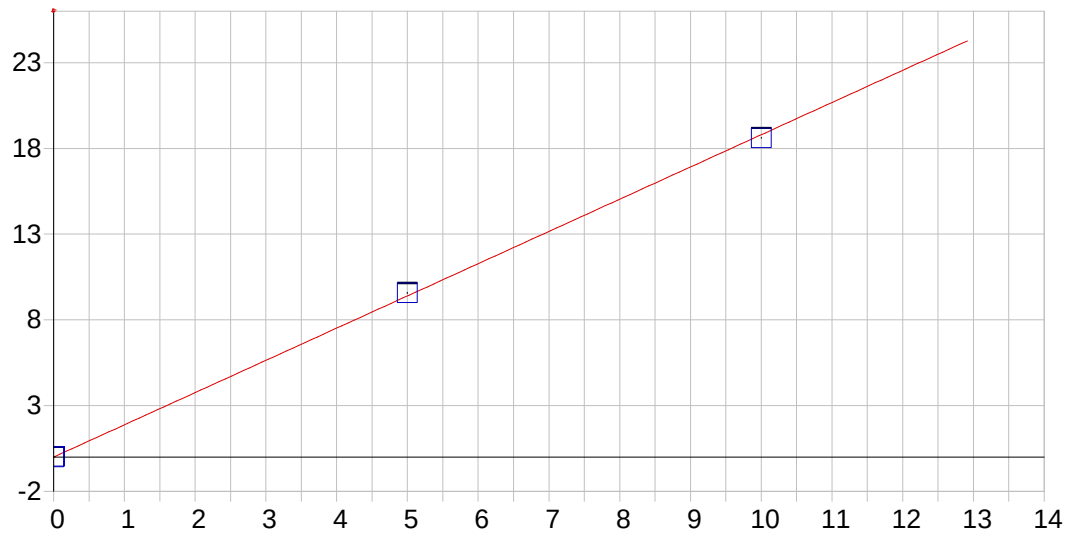


Mg 279.806 {121}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.001880	Re-Slope:	1.000000
A1 (Gain):	0.050525	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999975	Status:	OK.
Std Error of Est:	0.000195		
Predicted MDL:	0.010221		
Predicted MQL:	0.034070		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00002	.000	.000	-.00188	.001	1
CAL 1	1.0000	.97289	-.027	-2.71	.04728	.001	1
Cal 2	50.000	50.483	.483	.965	2.5487	.020	1
Cal 3	100.00	99.544	-.456	-.456	5.0276	.018	1



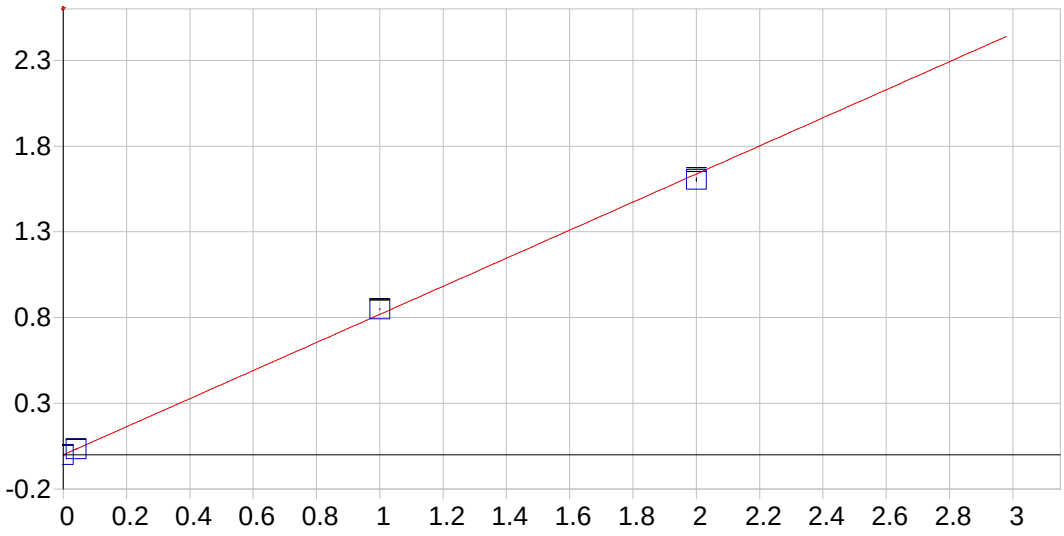
Mn 257.610 {131}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000202	Re-Slope:	1.000000
A1 (Gain):	1.879556	Y-int:	0.000000

A2 (Curvature):		0.000000					
n (Exponent):		1.000000					
Correlation:		0.999908		Status:	OK.		
Std Error of Est:		0.000540					
Predicted MDL:		0.000252					
Predicted MQL:		0.000840					

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00020	.000	1
CAL 1	.01500	.01544	.000	2.96	.02923	.001	1
Cal 2	5.0000	5.0954	.095	1.91	9.5772	.035	1
Cal 3	10.000	9.9042	-.096	-.958	18.616	.028	1

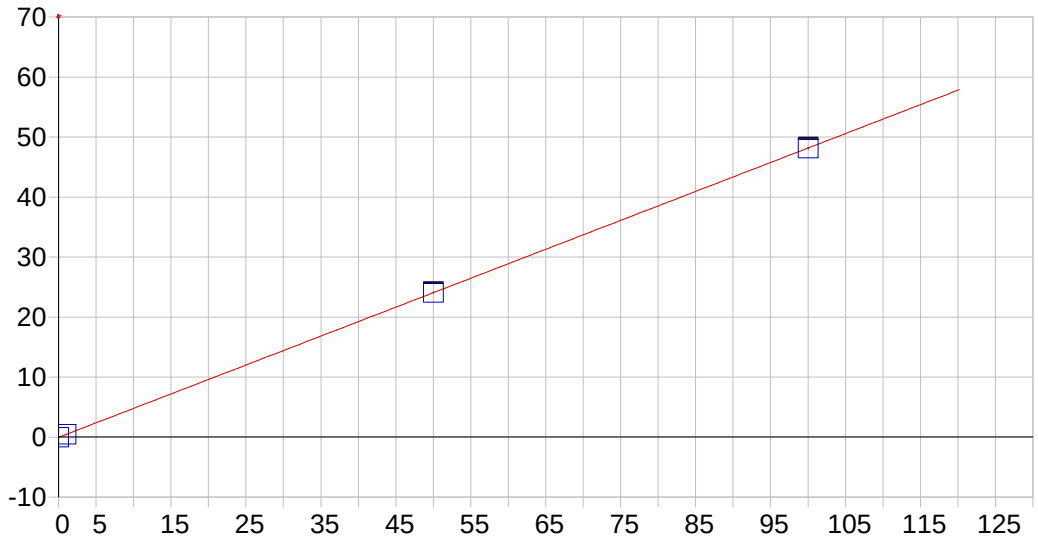


Mo 202.030 {467}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000190	Re-Slope:	1.000000
A1 (Gain):	0.818783	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999633	Status:	OK.
Std Error of Est:	0.000346		
Predicted MDL:	0.000164		
Predicted MQL:	0.000547		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	-.00019	.000	1
CAL 1	.04000	.04175	.002	4.37	.03399	.000	1
Cal 2	1.0000	1.0373	.037	3.73	.84915	.004	1
Cal 3	2.0000	1.9609	-.039	-1.95	1.6054	.011	1

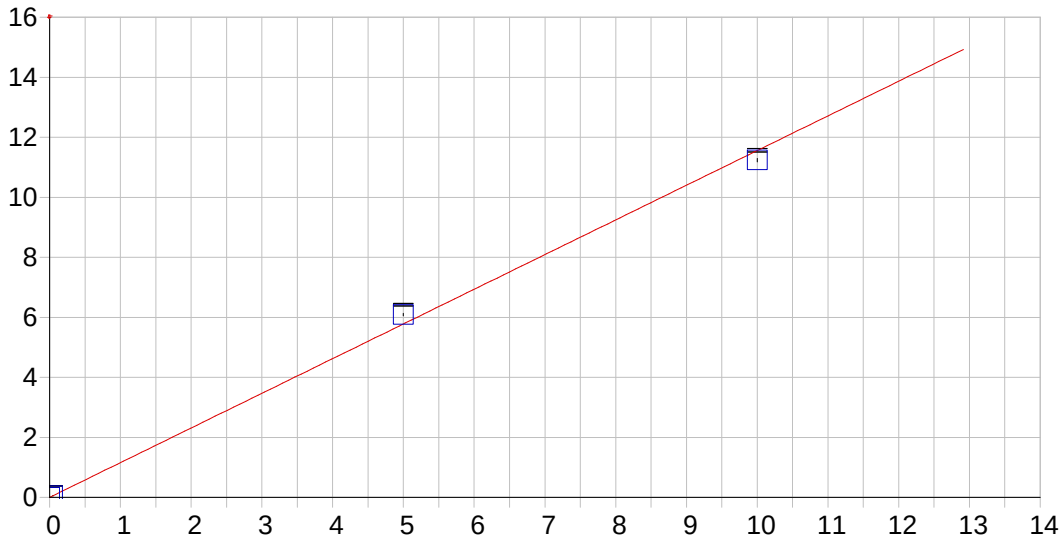


Na 589.592 { 57}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.039517	Re-Slope:	1.000000
A1 (Gain):	0.481997	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	1.000000	Status:	OK.
Std Error of Est:	0.000206		
Predicted MDL:	0.006905		
Predicted MQL:	0.023018		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00001	.000	.000	-.03951	.006	1
CAL 1	1.0000	.99296	-.007	-.704	.43909	.002	1
Cal 2	50.000	50.040	.040	.079	24.079	.103	1
Cal 3	100.00	99.968	-.032	-.032	48.145	.147	1



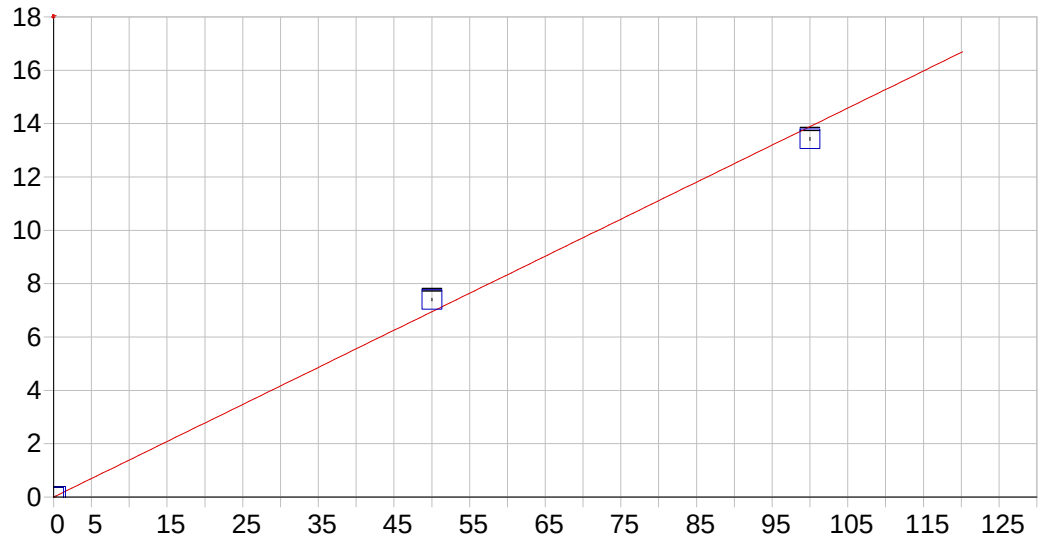
Ni 221.647 {452}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000174	Re-Slope:	1.000000
A1 (Gain):	1.155643	Y-int:	0.000000

A2 (Curvature):	0.000000					
n (Exponent):	1.000000					
Correlation:	0.999246		Status:	OK.		
Std Error of Est:	0.001557					
Predicted MDL:	0.000178					
Predicted MQL:	0.000592					

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	-.00001	.000	.000	.00017	.000	1
CAL 1	.04000	.04411	.004	10.3	.05115	.000	1
Cal 2	5.0000	5.2712	.271	5.42	6.0917	.042	1
Cal 3	10.000	9.7247	-.275	-2.75	11.238	.061	1

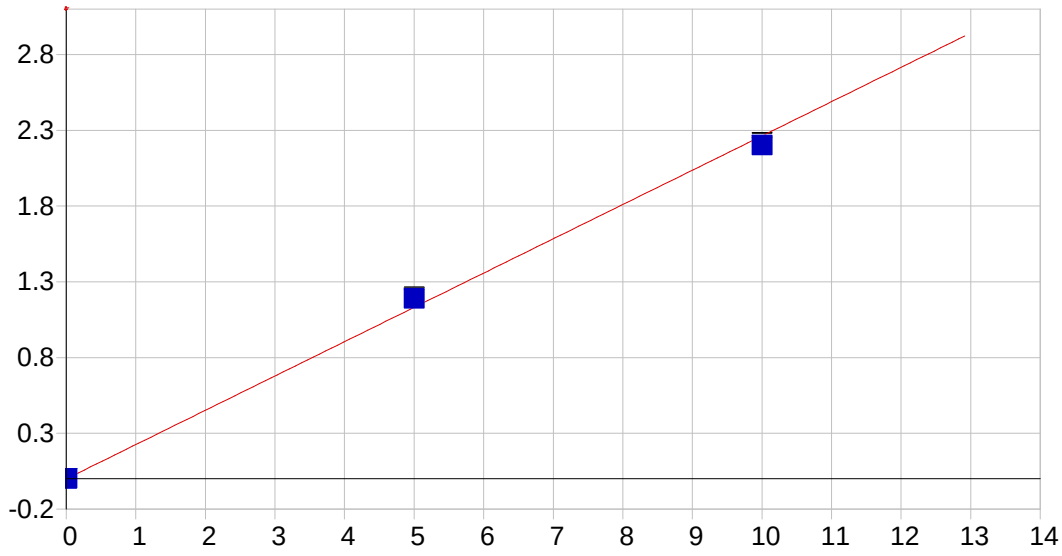


P 177.495 {490}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000083	Re-Slope:	1.000000
A1 (Gain):	0.138895	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.998913	Status:	OK.
Std Error of Est:	0.001775		
Predicted MDL:	0.000750		
Predicted MQL:	0.002501		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	-.00001	.000	.000	.00008	.000	1
CAL 1	.25000	.25541	.005	2.16	.03556	.000	1
Cal 2	50.000	53.300	3.30	6.60	7.4031	.053	1
Cal 3	100.00	96.695	-3.31	-3.31	13.430	.059	1

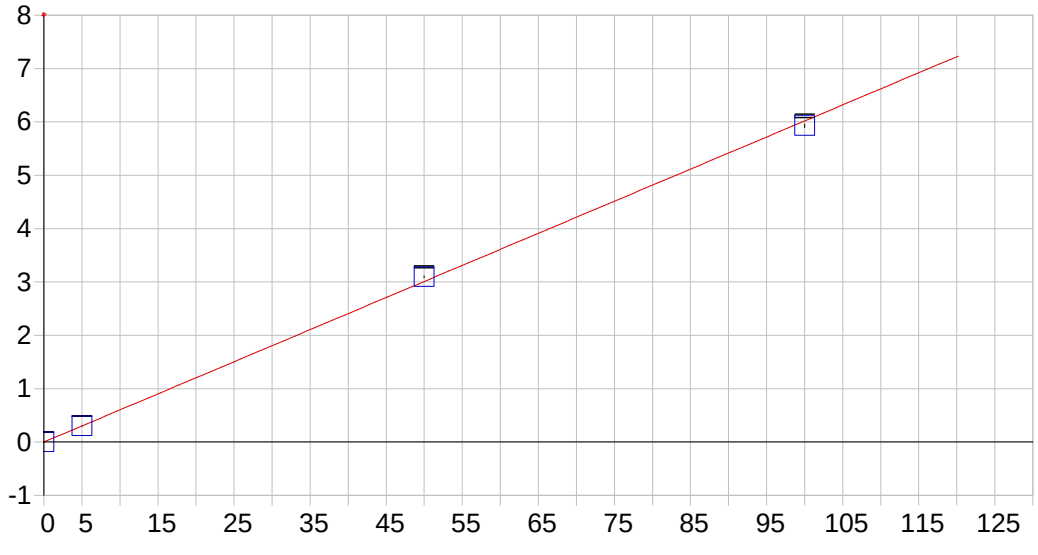


Pb 220.353 {453}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000449	Re-Slope:	1.000000
A1 (Gain):	0.226334	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999290	Status:	OK.
Std Error of Est:	0.000148		
Predicted MDL:	0.000778		
Predicted MQL:	0.002592		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	-.00045	.000	1
CAL 1	.01000	.01183	.002	18.3	.00235	.000	1
Cal 2	5.0000	5.2642	.264	5.28	1.1923	.007	1
Cal 3	10.000	9.7339	-.266	-2.66	2.2052	.015	1



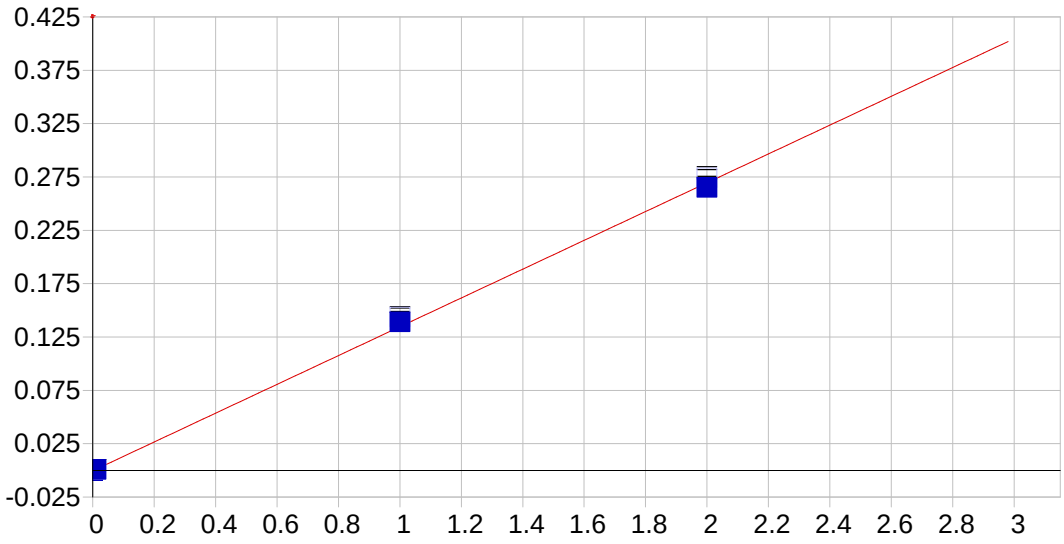
S 182.034 {485}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000216	Re-Slope:	1.000000
A1 (Gain):	0.060188	Y-int:	0.000000

A2 (Curvature):		0.000000					
n (Exponent):		1.000000					
Correlation:		0.999784		Status:	OK.		
Std Error of Est:		0.001557					
Predicted MDL:		0.001698					
Predicted MQL:		0.005659					

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	-.00011	.000	.000	-.00022	.000	1
CAL 1	5.0000	5.0336	.034	.671	.30274	.001	1
Cal 2	50.000	51.481	1.48	2.96	3.0983	.017	1
Cal 3	100.00	98.485	-1.51	-1.51	5.9274	.031	1

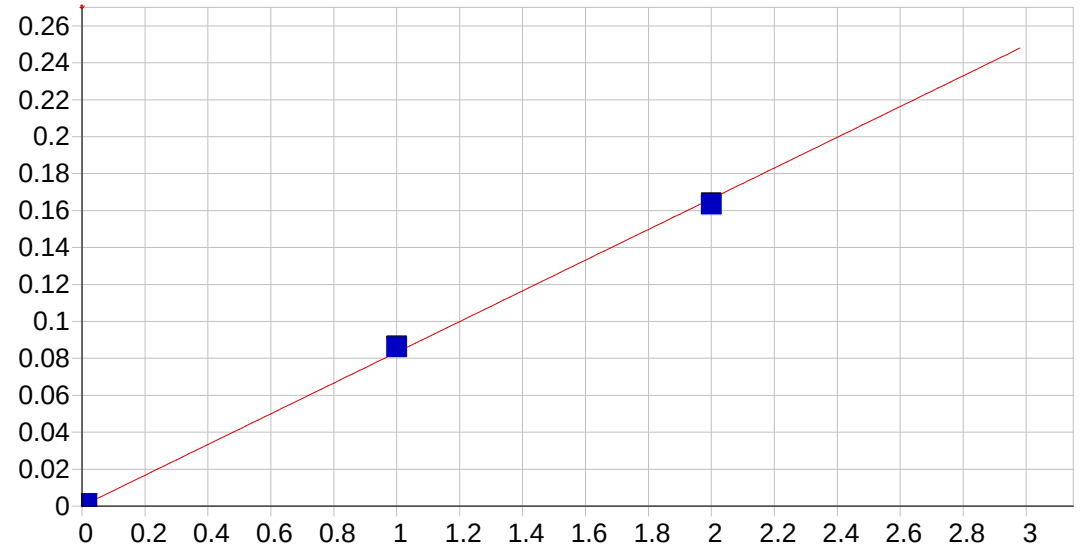


Sb 206.833 {463}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000360	Re-Slope:	1.000000
A1 (Gain):	0.134980	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999736	Status:	OK.
Std Error of Est:	0.000025		
Predicted MDL:	0.001255		
Predicted MQL:	0.004183		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	-.00036	.000	1
CAL 1	.01000	.00950	.000	-4.99	.00092	.000	1
Cal 2	1.0000	1.0336	.034	3.36	.14358	.001	1
Cal 3	2.0000	1.9669	-.033	-1.65	.27400	.001	1

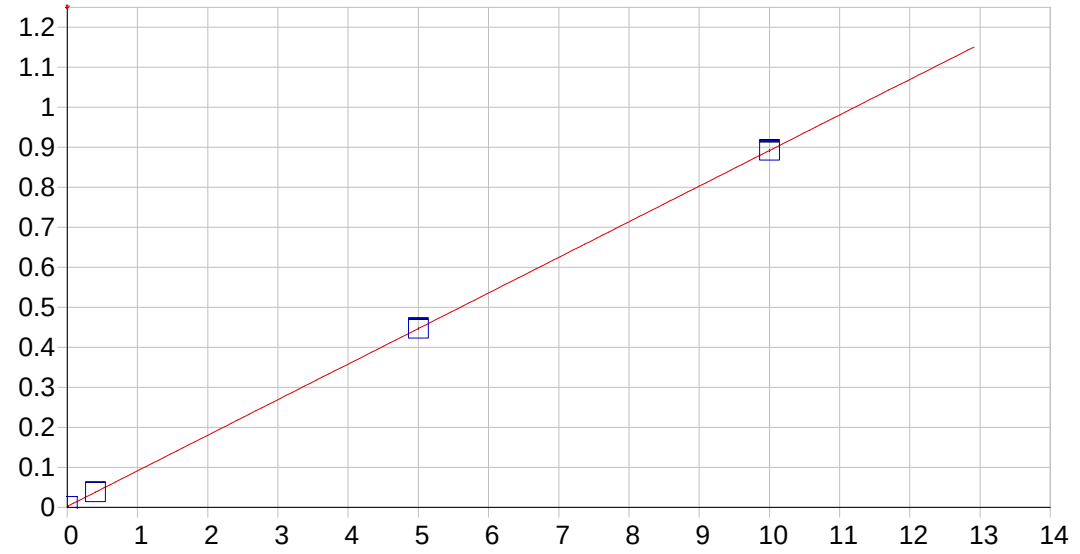


Se 196.090 {472}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000083	Re-Slope:	1.000000
A1 (Gain):	0.083166	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999685	Status:	OK.
Std Error of Est:	0.000020		
Predicted MDL:	0.001523		
Predicted MQL:	0.005076		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00008	.000	1
CAL 1	.01500	.01511	.000	.733	.00134	.000	1
Cal 2	1.0000	1.0355	.035	3.55	.08594	.000	1
Cal 3	2.0000	1.9644	-.036	-1.78	.16294	.001	1



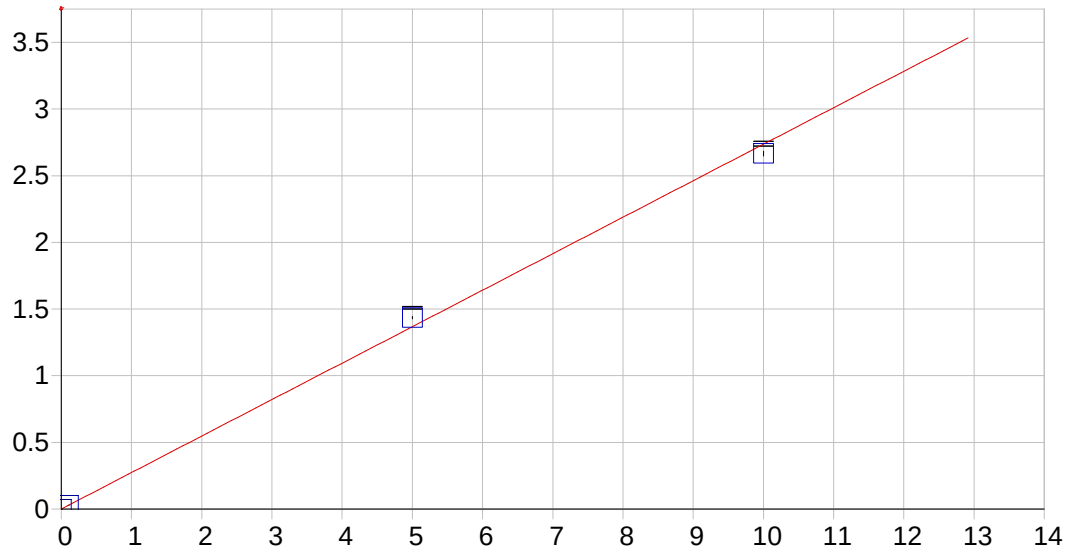
Si 251.611 {134}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.002325	Re-Slope:	1.000000
A1 (Gain):	0.088959	Y-int:	0.000000

A2 (Curvature):	0.000000					
n (Exponent):	1.000000					
Correlation:	1.000000		Status:	OK.		
Std Error of Est:	0.000008					
Predicted MDL:	0.005179					
Predicted MQL:	0.017263					

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00232	.000	1
CAL 1	.40000	.40185	.002	.463	.03807	.001	1
Cal 2	5.0000	4.9981	-.002	-.038	.44695	.002	1
Cal 3	10.000	10.000	.000	.000	.89192	.003	1

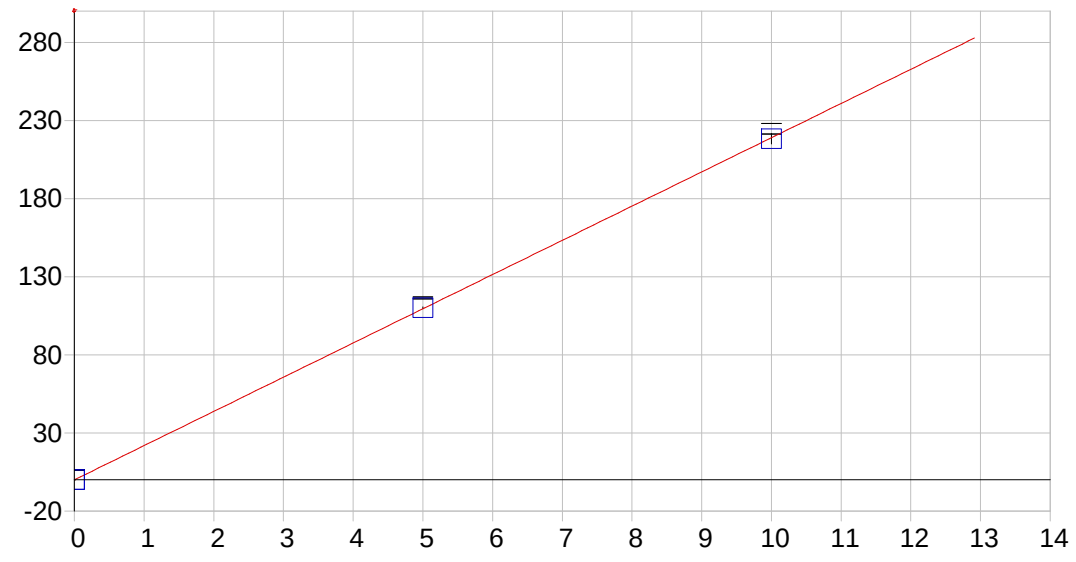


Sn 189.989 {478}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000080	Re-Slope:	1.000000
A1 (Gain):	0.273595	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999375	Status:	OK.
Std Error of Est:	0.000531		
Predicted MDL:	0.000354		
Predicted MQL:	0.001179		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	-.00001	.000	.000	.00008	.000	1
CAL 1	.10000	.10745	.007	7.45	.02948	.000	1
Cal 2	5.0000	5.2447	.245	4.89	1.4350	.010	1
Cal 3	10.000	9.7479	-.252	-2.52	2.6670	.018	1

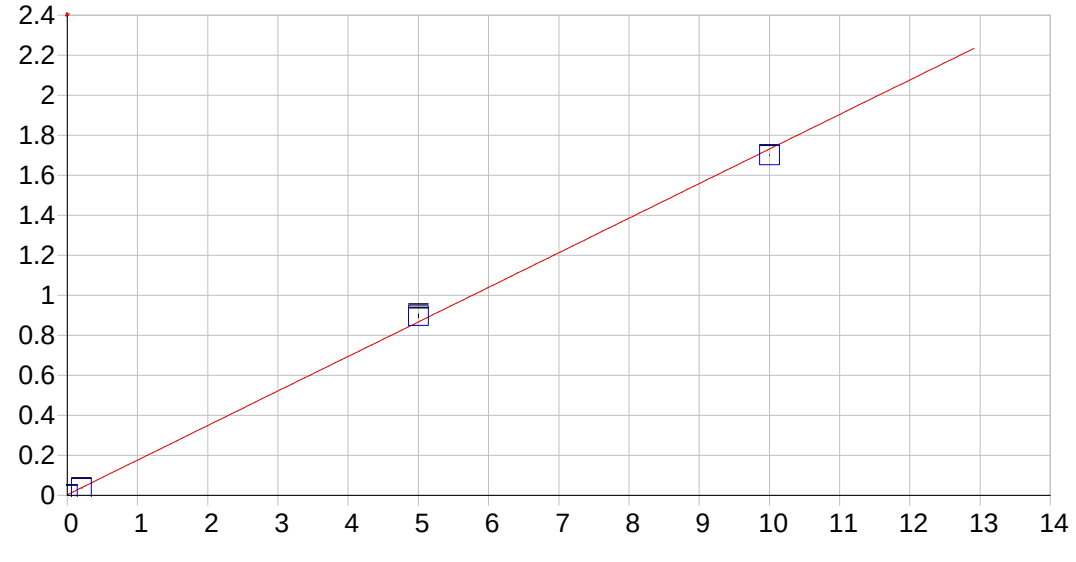


Sr 407.771 { 83}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.003506	Re-Slope:	1.000000
A1 (Gain):	21.897175	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999991	Status:	OK.
Std Error of Est:	0.001162		
Predicted MDL:	0.000058		
Predicted MQL:	0.000193		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	-.00351	.001	1
CAL 1	.00500	.00522	.000	4.41	.11081	.002	1
Cal 2	5.0000	5.0301	.030	.601	110.14	.576	1
Cal 3	10.000	9.9697	-.030	-.303	218.31	3.42	1



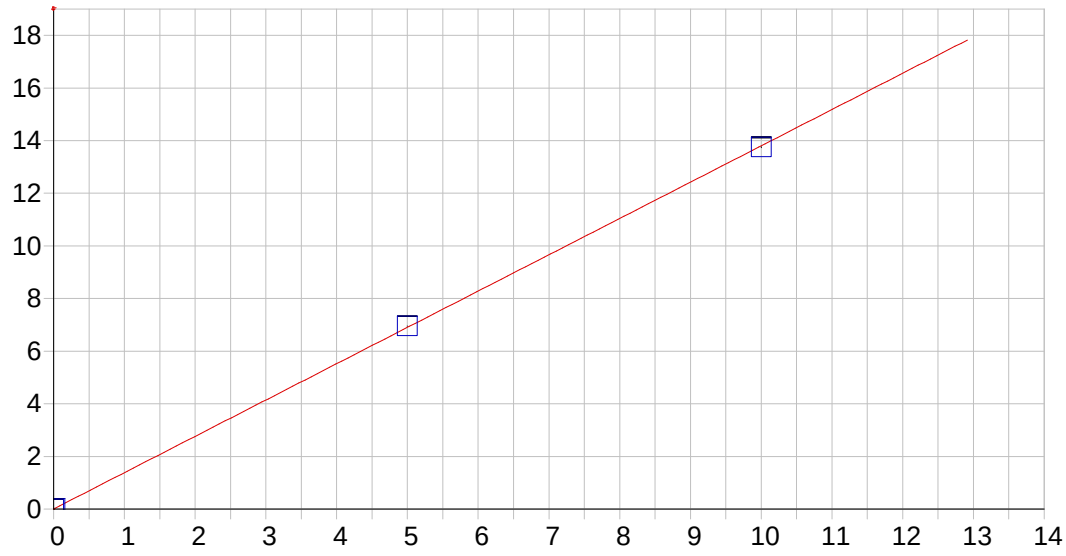
Th 283.231 {119}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.003281	Re-Slope:	1.000000
A1 (Gain):	0.172760	Y-int:	0.000000

A2 (Curvature):	0.000000						
n (Exponent):	1.000000						
Correlation:	0.999689			Status:	OK.		
Std Error of Est:	0.000336						
Predicted MDL:	0.002516						
Predicted MQL:	0.008386						

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00328	.000	1
CAL 1	.20000	.19534	-.005	-2.33	.03703	.000	1
Cal 2	5.0000	5.1782	.178	3.56	.89787	.010	1
Cal 3	10.000	9.8265	-.174	-1.74	1.7009	.002	1

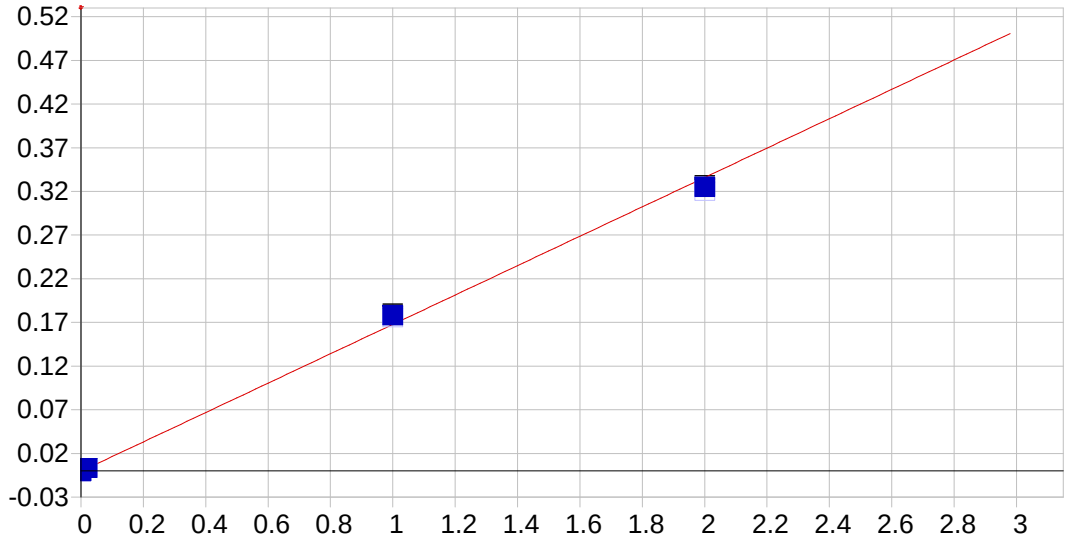


Ti 334.941 {101}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.003707	Re-Slope:	1.000000
A1 (Gain):	1.379892	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999986	Status:	OK.
Std Error of Est:	0.000178		
Predicted MDL:	0.000640		
Predicted MQL:	0.002133		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00371	.001	1
CAL 1	.02000	.01940	-.001	-2.98	.03048	.000	1
Cal 2	5.0000	5.0367	.037	.734	6.9538	.005	1
Cal 3	10.000	9.9639	-.036	-.361	13.753	.019	1

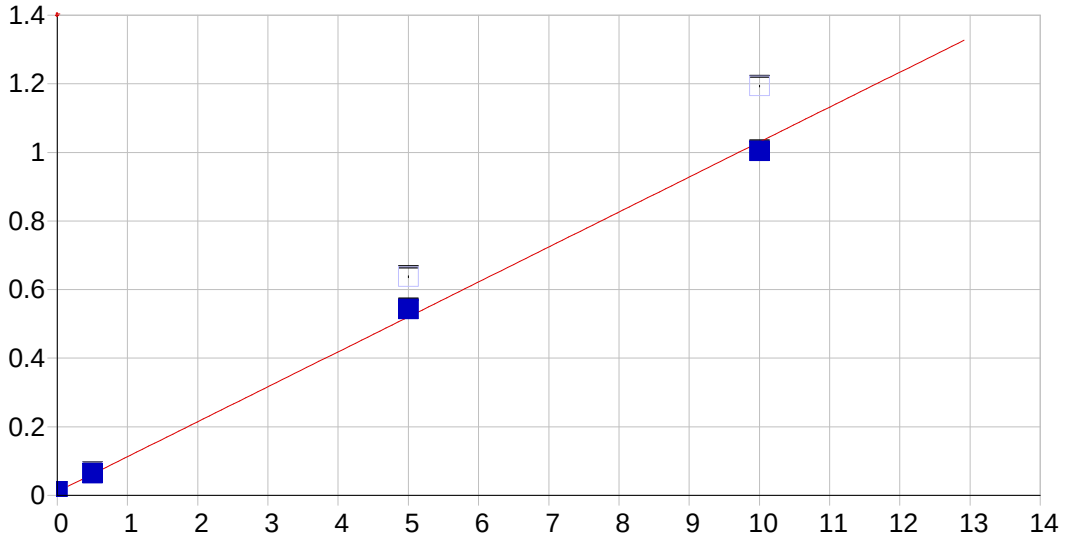


Tl 190.856 {477}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000457	Re-Slope:	1.000000
A1 (Gain):	0.168198	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.998924	Status:	OK.
Std Error of Est:	0.000085		
Predicted MDL:	0.000767		
Predicted MQL:	0.002556		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	-.00046	.000	1
CAL 1	.02000	.02245	.002	12.2	.00329	.000	1
Cal 2	1.0000	1.0627	.063	6.27	.17615	.001	1
Cal 3	2.0000	1.9349	-.065	-3.26	.32072	.002	1



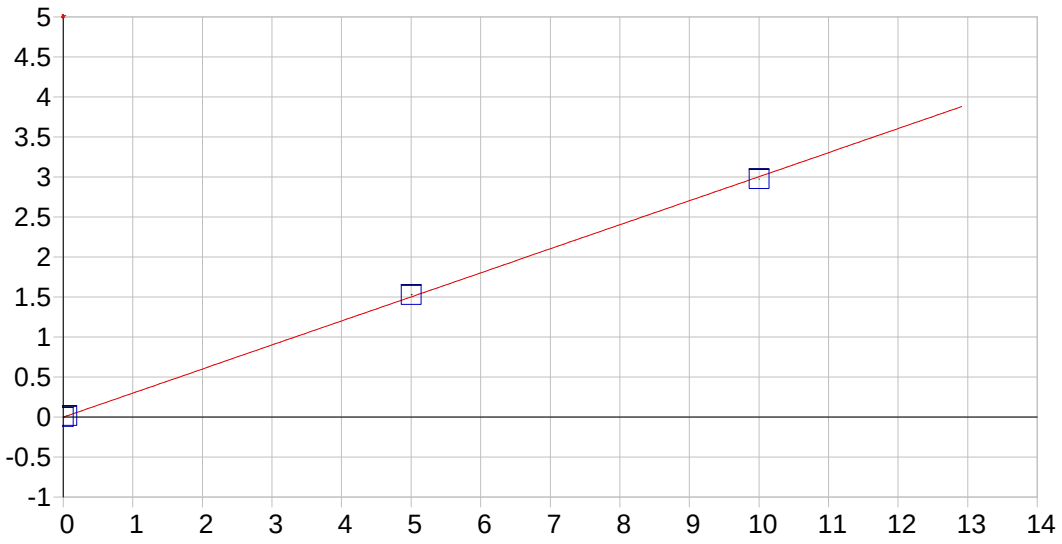
U 367.007 { 92}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.010817	Re-Slope:	1.000000
A1 (Gain):	0.101915	Y-int:	0.000000

A2 (Curvature):		0.000000					
n (Exponent):		1.000000					
Correlation:		0.999589		Status:	OK.		
Std Error of Est:		0.000429					
Predicted MDL:		0.010669					
Predicted MQL:		0.035563					

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	-.00004	.000	.000	.01081	.001	1
CAL 1	.50000	.52953	.030	5.91	.06785	.001	1
Cal 2	5.0000	5.2220	.222	4.44	.63736	.003	1
Cal 3	10.000	9.7516	-.248	-2.48	1.1933	.003	1

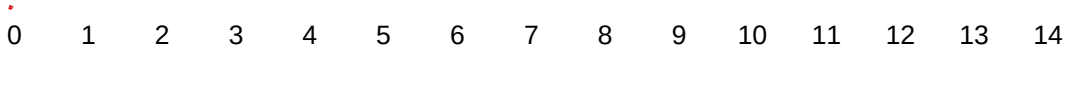


V 290.882 {116}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000915	Re-Slope:	1.000000
A1 (Gain):	0.300445	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999915	Status:	OK.
Std Error of Est:	0.000152		
Predicted MDL:	0.002455		
Predicted MQL:	0.008182		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	-.00092	.001	1
CAL 1	.05000	.05221	.002	4.41	.01477	.000	1
Cal 2	5.0000	5.0899	.090	1.80	1.5283	.001	1
Cal 3	10.000	9.9079	-.092	-.921	2.9759	.002	1

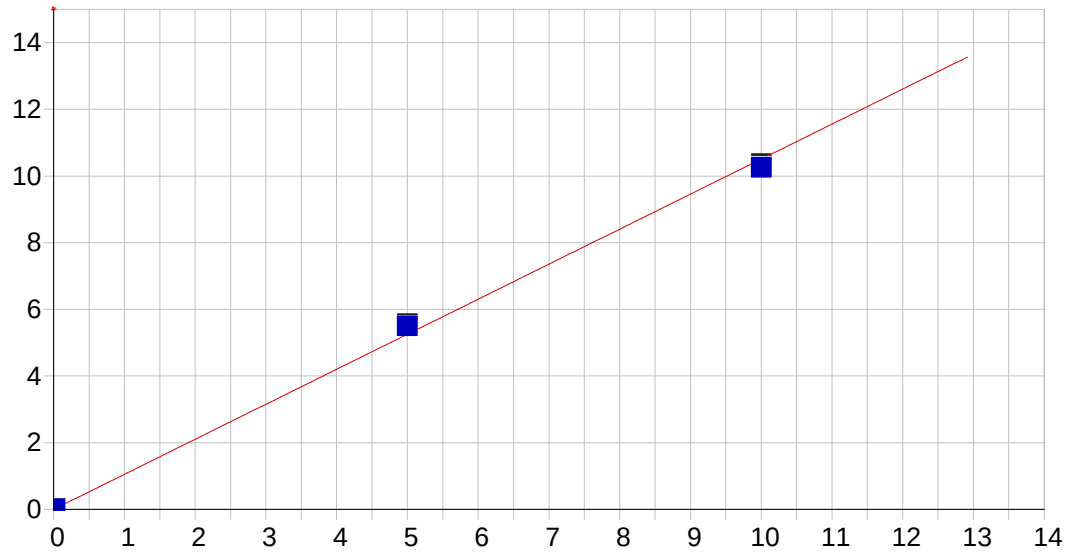


Y 371.030 { 91}*

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	1.000000	Re-Slope:	1.000000
A1 (Gain):	0.000000	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.000000	Status:	Warning Zero Gain
Std Error of Est:	0.000000		
Predicted MDL:	n/a		
Predicted MQL:	n/a		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CAL 1	1.0000	.00000	-1.00	-100.	1.0000	.000	1
CALBLK1	.00000	.00000	.000	.000	1.0000	.000	1
Cal 2	5.0000	.00000	-5.00	-100.	1.0000	.000	1
Cal 3	10.000	.00000	-10.0	-100.	1.0000	.000	1



Zn 213.856 {458}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000612	Re-Slope:	1.000000
A1 (Gain):	1.050718	Y-int:	0.000000

A2 (Curvature):		0.000000					
n (Exponent):		1.000000					
Correlation:		0.999450		Status:	OK.		
Std Error of Est:		0.000857					
Predicted MDL:		0.000105					
Predicted MQL:		0.000350					
Std. Name	**Stated Conc.**	**Found Conc.**	**Difference**	**% Diff.**	**(S)IR**	**Std Dev**	**Emphasis**
CALBLK1	.00000	.00000	.000	.000	.00061	.000	1
CAL 1	.02000	.02076	.001	3.81	.02250	.000	1
Cal 2	5.0000	5.2352	.235	4.70	5.5203	.037	1
Cal 3	10.000	9.7640	-.236	-2.36	10.298	.062	1

Sample Name: ICV Acquired: 12/5/2014 12:26:37 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.9725**	**49.27**	**4.818**	**4.997**	**4.901**	**4.880**	**4.919**	**50.25**	**4.930**
Stddev	.0126	.18	.065	.010	.125	.134	.072	.54	.064
%RSD	1.293	.3710	1.347	.2064	2.541	2.737	1.474	1.075	1.306
#1	.9646	49.21	4.778	4.988	4.759	4.737	4.874	50.00	4.892
#2	.9659	49.47	4.783	5.008	4.954	4.900	4.879	49.88	4.894
#3	.9870	49.12	4.893	4.996	4.991	5.002	5.002	50.87	5.005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.048**	**5.007**	**4.932**	**49.71**	**49.36**	**5.011**	**48.14**	**4.919**	**1.018**
Stddev	.067	.065	.074	.21	.17	.032	.35	.015	.015
%RSD	1.334	1.290	1.509	.4158	.3441	.6429	.7299	.3115	1.470
#1	5.009	4.964	4.893	49.49	49.27	5.010	47.89	4.902	1.010
#2	5.008	4.974	4.884	49.75	49.56	5.043	47.99	4.924	1.010
#3	5.125	5.081	5.017	49.90	49.25	4.979	48.54	4.931	1.036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**48.71**	**4.963**	**5.155**	**5.009**	**49.57**	**.9881**	**.9736**	**5.187**	**4.971**
Stddev	.21	.065	.071	.068	.74	.0101	.0139	.006	.064
%RSD	.4351	1.304	1.370	1.358	1.495	1.021	1.428	.1220	1.291
#1	48.74	4.927	5.114	4.970	49.09	.9806	.9674	5.181	4.932
#2	48.91	4.924	5.115	4.970	49.19	.9842	.9638	5.194	4.935
#3	48.49	5.037	5.237	5.088	50.42	.9995	.9895	5.187	5.045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: ICV Acquired: 12/5/2014 12:26:37 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.974**	**4.875**	**4.977**	**.9989**	**5.024**	**4.789**	**4.931**
Stddev	.117	.076	.012	.0119	.070	.017	.068
%RSD	2.352	1.568	.2449	1.192	1.383	.3485	1.382
#1	4.877	4.843	4.963	.9901	4.978	4.770	4.893
#2	4.940	4.819	4.987	.9943	4.989	4.801	4.891
#3	5.104	4.962	4.980	1.012	5.104	4.797	5.010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**4492.3**
Stddev	54.1
%RSD	1.2035
#1	4521.9
#2	4525.2
#3	4429.9

Sample Name: ICB Acquired: 12/5/2014 12:30:26 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	<.0000	.0179	.0003	.0003	<.0000	.0009	.0002
Stddev	.0002	.0084	.0012	.0029	.0002	.0000	.0009	.0011	.0000
%RSD	123.4	330.4	892.2	16.42	51.93	15.33	87.68	124.9	24.81
#1	-.0001	-.0006	.0009	.0197	.0003	.0003	-.0004	.0014	.0001
#2	-.0003	.0047	.0001	.0195	.0002	.0003	-.0006	.0016	.0002
#3	.0000	-.0117	-.0014	.0145	.0005	.0002	-.0021	-.0004	.0002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0008	.0027	.0022	.0467	.0000	.0077	.0003	.0001
Stddev	.0003	.0008	.0007	.0005	.0048	.0014	.0023	.0001	.0003
%RSD	240.5	101.8	24.66	24.11	10.32	16510.	30.28	29.71	286.4
#1	.0004	.0017	.0022	.0021	.0411	.0017	.0060	.0002	.0001
#2	.0001	.0000	.0035	.0028	.0492	-.0009	.0103	.0004	-.0002
#3	-.0002	.0008	.0025	.0018	.0497	-.0007	.0068	.0003	.0004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0016	.0003	.0002	.0006	.0056	.0005	<.0000	<.0000	.0004
Stddev	.0082	.0003	.0004	.0005	.0022	.0007	.0010	.0033	.0005
%RSD	529.9	76.01	185.7	82.92	40.04	143.2	1028.	2467.	121.5
#1	.0091	.0006	.0007	.0008	.0077	-.0002	-.0002	-.0039	.0002
#2	-.0072	.0002	.0000	.0000	.0059	.0005	-.0010	.0011	.0001
#3	.0028	.0001	-.0001	.0010	.0032	.0012	.0009	.0024	.0009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Sample Name: ICB Acquired: 12/5/2014 12:30:26 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	<.0000	<.0000	.0007	.0123	.0032	.0001
Stddev	.0001	.0008	.0005	.0003	.0102	.0032	.0002
%RSD	23.92	103.7	128.9	39.82	83.26	99.12	159.9
#1	.0003	-.0014	-.0006	.0006	.0015	.0014	.0002
#2	.0003	-.0011	.0002	.0004	.0134	.0070	.0001
#3	.0002	.0001	-.0007	.0010	.0219	.0014	-.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_3710
Units	Cts/S
Avg	4466.9
Stddev	28.3
%RSD	.63419
#1	4494.2
#2	4437.6
#3	4469.1

Sample Name: LLC Acquired: 12/5/2014 12:34:22 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0101**	**.2003**	**.0104**	**.0566**	**.0494**	**.0052**	**.2084**	**1.133**
Stddev	.0005	.0059	.0014	.0042	.0002	.0001	.0015	.005
%RSD	4.945	2.969	13.61	7.477	.3167	1.020	.6997	.4791
#1	.0098	.2070	.0117	.0522	.0493	.0051	.2091	1.135
#2	.0106	.1982	.0108	.0569	.0495	.0052	.2067	1.127
#3	.0098	.1956	.0089	.0607	.0492	.0052	.2093	1.137
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Cd2288	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0052**	**.0554**	**.0104**	**.0268**	**.1041**	**4.922**	**.0494**	**.9676**
Stddev	.0001	.0002	.0008	.0020	.0020	.020	.0006	.0155
%RSD	1.634	.3918	7.986	7.577	1.944	.4083	1.267	1.603
#1	.0051	.0553	.0100	.0286	.1019	4.942	.0496	.9828
#2	.0052	.0553	.0113	.0246	.1059	4.924	.0486	.9518
#3	.0052	.0557	.0098	.0271	.1045	4.902	.0498	.9682
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mn2576	Mo2020	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0152**	**.0425**	**.9595**	**.0448**	**.2594**	W **.0121**	**5.080**	**.0110**
Stddev	.0003	.0004	.0083	.0004	.0016	.0006	.045	.0013
%RSD	2.050	.8307	.8694	.7915	.6000	5.034	.8899	11.43
#1	.0149	.0428	.9688	.0448	.2588	.0114	5.101	.0110
#2	.0151	.0421	.9569	.0445	.2582	.0123	5.029	.0097
#3	.0155	.0426	.9528	.0452	.2612	.0125	5.112	.0122
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass
Value						.0100		
Range						20.00%		

Sample Name: LLC Acquired: 12/5/2014 12:34:22 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2516	Sn1899	Sr4077	Th2832	Ti3349	Tl1908	U_3670
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0155	.3881	.1083	.0051	.1976	.0198	.0230	.5381
Stddev	.0009	.0035	.0012	.0000	.0020	.0007	.0006	.0143
%RSD	5.496	.9067	1.154	.8692	1.036	3.387	2.787	2.658
#1	.0155	.3846	.1093	.0052	.1999	.0204	.0230	.5420
#2	.0146	.3917	.1069	.0051	.1960	.0191	.0224	.5223
#3	.0163	.3878	.1087	.0052	.1969	.0200	.0237	.5501
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	V_2908	Zn2138
Units	ppm	ppm
Avg	.0512	.0214
Stddev	.0015	.0002
%RSD	2.896	.8803
#1	.0528	.0215
#2	.0499	.0212
#3	.0508	.0216
Check ?	Chk Pass	Chk Pass
Value		
Range		

Int. Std.	Y_3710
Units	Cts/S
Avg	4552.0
Stddev	14.9
%RSD	.32654
#1	4544.5
#2	4569.1
#3	4542.4

Sample Name: ICSA Acquired: 12/5/2014 12:38:16 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	98.89	.0034	W<.0000	.0002	.0000	.0182
Stddev	.0005	.10	.0009	.0063	.0001	.0000	.0010
%RSD	132.6	.0986	25.45	13.46	49.69	275.3	5.538
#1	-.0003	99.00	.0044	-.0474	.0001	.0001	.0182
#2	-.0009	98.81	.0027	-.0407	.0002	.0000	.0192
#3	.0001	98.87	.0032	-.0533	.0001	.0000	.0172
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass
High Limit				.0324			
Low Limit				-.0324			

Elem	Ca1840	Cd2288	Co2286	Cr2835	Cu2178	Fe2599	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	97.51	W<.0000	.0014	<.0000	.0045	99.00	99.40
Stddev	.26	.0000	.0003	.0015	.0003	.14	.10
%RSD	.2647	1.601	17.84	43.56	7.263	.1414	.0985
#1	97.80	-.0013	.0016	-.0049	.0047	99.14	99.42
#2	97.42	-.0013	.0015	-.0019	.0046	98.86	99.29
#3	97.31	-.0014	.0011	-.0035	.0041	99.01	99.48
Check ?	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		.0010					
Low Limit		-.0010					

Elem	Li6707	Mg2798	Mn2576	Mo2020	Na5895	Ni2216	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0016	99.50	W .0047	<.0000	98.38	.0014	97.56
Stddev	.0003	.20	.0006	.0003	.23	.0005	.57
%RSD	17.40	.2028	13.40	56.85	.2386	35.81	.5833
#1	.0014	99.59	.0045	-.0007	98.49	.0018	98.21
#2	.0019	99.64	.0041	-.0008	98.11	.0008	97.30
#3	.0016	99.27	.0054	-.0002	98.54	.0016	97.16
Check ?	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			.0031				
Low Limit			-.0031				

Sample Name: ICSA Acquired: 12/5/2014 12:38:16 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	99.09	<.0000	.0031	<.0000	<.0000	.0010
Stddev	.0013	.81	.0010	.0018	.0058	.0002	.0000
%RSD	413.2	.8197	35.69	59.69	109.0	85.52	3.941
#1	-.0016	100.0	-.0038	.0044	-.0121	-.0001	.0011
#2	-.0005	98.66	-.0029	.0037	-.0022	-.0001	.0010
#3	.0011	98.57	-.0018	.0010	-.0017	-.0004	.0010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0358	.0034	<.0000	W .0664	.0036	<.0000
Stddev	.0008	.0005	.0002	.0137	.0024	.0001
%RSD	2.361	14.06	15.06	20.65	67.64	1.421
#1	.0355	.0039	-.0012	.0806	.0043	-.0060
#2	.0367	.0032	-.0013	.0653	.0009	-.0059
#3	.0351	.0030	-.0016	.0532	.0055	-.0058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass
High Limit				.0470		
Low Limit				-.0470		

Int. Std.	Y_3710
Units	Cts/S
Avg	4451.3
Stddev	8.3
%RSD	.18726
#1	4442.3
#2	4452.7
#3	4458.8

Sample Name: ICSAB Acquired: 12/5/2014 12:42:04 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.4928**	**98.74**	**2.445**	**2.435**	**2.471**	**2.508**	**2.459**	**97.53**	**2.468**
Stddev	.0043	.43	.014	.005	.007	.005	.008	.50	.010
%RSD	.8782	.4361	.5550	.1881	.2862	.2197	.3331	.5089	.4142
#1	.4971	98.64	2.455	2.437	2.464	2.504	2.467	97.84	2.476
#2	.4929	99.21	2.450	2.430	2.478	2.515	2.460	97.80	2.472
#3	.4885	98.37	2.430	2.438	2.470	2.506	2.451	96.96	2.457
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.463**	**2.467**	**2.461**	**99.07**	**99.57**	**2.467**	**99.91**	**2.447**	**.4950**
Stddev	.013	.017	.007	.25	.30	.007	.37	.013	.0016
%RSD	.5230	.6726	.2951	.2511	.3044	.2995	.3738	.5184	.3141
#1	2.473	2.483	2.467	98.95	99.32	2.463	99.86	2.451	.4964
#2	2.468	2.468	2.463	99.36	99.91	2.476	100.3	2.457	.4953
#3	2.448	2.449	2.453	98.91	99.47	2.463	99.57	2.432	.4934
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**98.31**	**2.433**	**97.23**	**2.461**	**98.77**	**.4850**	**.4896**	**2.490**	**2.469**
Stddev	.21	.010	.48	.010	.39	.0031	.0023	.018	.012
%RSD	.2123	.3959	.4964	.4149	.3980	.6459	.4737	.7083	.4869
#1	98.10	2.440	97.64	2.468	99.13	.4883	.4898	2.485	2.479
#2	98.51	2.437	97.36	2.466	98.85	.4845	.4919	2.510	2.473
#3	98.32	2.422	96.70	2.449	98.35	.4821	.4873	2.476	2.456
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: ICSAB Acquired: 12/5/2014 12:42:04 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.516**	**2.471**	**2.474**	**.4871**	**2.512**	**2.421**	**2.488**
Stddev	.006	.016	.005	.0028	.029	.015	.011
%RSD	.2349	.6633	.2203	.5803	1.145	.6140	.4325
#1	2.510	2.488	2.472	.4901	2.546	2.428	2.497
#2	2.522	2.471	2.480	.4867	2.494	2.432	2.492
#3	2.515	2.455	2.470	.4845	2.498	2.404	2.476
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**4369.8**
Stddev	20.1
%RSD	.46017
#1	4366.8
#2	4351.3
#3	4391.2

Sample Name: LDR Acquired: 12/5/2014 12:45:29 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.954**	**99.05**	**9.886**	**9.795**	**9.756**	**9.678**	**9.825**	**96.93**	**9.792**
Stddev	.020	.15	.055	.035	.135	.171	.056	.67	.057
%RSD	1.034	.1557	.5531	.3574	1.386	1.763	.5698	.6926	.5769
#1	1.952	99.20	9.937	9.796	9.669	9.637	9.880	97.17	9.834
#2	1.935	98.89	9.829	9.759	9.687	9.532	9.768	96.17	9.727
#3	1.975	99.07	9.892	9.829	9.912	9.866	9.828	97.44	9.813
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.728**	**9.725**	**9.801**	**98.17**	**99.35**	**9.917**	**98.05**	**9.784**	**1.956**
Stddev	.053	.083	.073	.29	.15	.003	.47	.024	.012
%RSD	.5427	.8550	.7408	.2930	.1486	.0277	.4775	.2435	.5927
#1	9.762	9.737	9.857	98.37	99.42	9.916	98.10	9.795	1.965
#2	9.667	9.637	9.719	97.84	99.18	9.915	97.56	9.757	1.943
#3	9.755	9.802	9.828	98.29	99.45	9.920	98.49	9.801	1.960
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**97.77**	**9.720**	**97.36**	**9.727**	**99.65**	**1.979**	**1.990**	**9.846**	**9.747**
Stddev	.16	.057	.52	.053	.51	.009	.012	.035	.055
%RSD	.1686	.5905	.5343	.5452	.5080	.4438	.6017	.3574	.5673
#1	97.62	9.754	97.70	9.764	100.1	1.988	1.996	9.826	9.774
#2	97.75	9.653	96.76	9.666	99.09	1.970	1.976	9.825	9.683
#3	97.94	9.751	97.60	9.751	99.77	1.980	1.997	9.887	9.783
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: LDR Acquired: 12/5/2014 12:45:29 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.720**	**9.711**	**9.798**	**1.932**	**9.683**	**9.748**	**9.767**
Stddev	.053	.095	.015	.010	.106	.027	.050
%RSD	.5428	.9776	.1572	.5398	1.099	.2813	.5125
#1	9.770	9.719	9.812	1.935	9.685	9.751	9.803
#2	9.665	9.613	9.782	1.921	9.575	9.719	9.710
#3	9.726	9.802	9.802	1.941	9.788	9.774	9.789
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**4439.8**
Stddev	30.2
%RSD	.68085
#1	4422.0
#2	4474.7
#3	4422.7

Sample Name: CCV Acquired: 12/5/2014 12:49:20 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.9799**	**49.27**	**4.977**	**5.011**	**4.969**	**5.053**	**4.972**	**50.34**	**4.967**
Stddev	.0011	.17	.027	.012	.052	.051	.028	.20	.027
%RSD	.1150	.3366	.5413	.2304	1.055	1.020	.5647	.4029	.5410
#1	.9811	49.19	4.971	4.999	4.921	4.994	4.958	50.29	4.953
#2	.9797	49.46	4.954	5.022	5.025	5.088	4.953	50.17	4.950
#3	.9789	49.16	5.007	5.012	4.960	5.076	5.004	50.57	4.998
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.029**	**5.027**	**4.968**	**50.05**	**49.99**	**5.018**	**49.15**	**5.013**	**.9958**
Stddev	.022	.011	.039	.06	.08	.019	.10	.011	.0042
%RSD	.4325	.2139	.7777	.1253	.1618	.3738	.2092	.2282	.4221
#1	5.021	5.033	4.949	49.98	50.00	5.011	49.06	5.004	.9929
#2	5.013	5.014	4.942	50.07	50.06	5.039	49.26	5.026	.9938
#3	5.054	5.033	5.012	50.10	49.90	5.004	49.12	5.009	1.001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**49.97**	**5.046**	**50.90**	**5.055**	**49.34**	**.9875**	**.9928**	**4.930**	**5.035**
Stddev	.19	.022	.23	.019	.32	.0052	.0091	.022	.022
%RSD	.3823	.4352	.4606	.3690	.6537	.5256	.9213	.4372	.4319
#1	49.88	5.036	50.80	5.046	49.22	.9854	.9890	4.918	5.023
#2	50.19	5.032	50.72	5.043	49.08	.9838	.9862	4.955	5.022
#3	49.85	5.071	51.16	5.077	49.70	.9935	1.003	4.917	5.060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: CCV Acquired: 12/5/2014 12:49:20 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.039**	**4.964**	**4.988**	**1.016**	**4.994**	**5.004**	**5.001**
Stddev	.028	.007	.009	.002	.015	.005	.026
%RSD	.5541	.1466	.1854	.2057	.3042	.1100	.5126
#1	5.013	4.967	4.980	1.016	5.004	5.002	4.988
#2	5.068	4.970	4.998	1.014	4.977	5.010	4.984
#3	5.035	4.956	4.987	1.018	5.003	5.000	5.030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**4486.1**
Stddev	7.9
%RSD	.17576
#1	4494.7
#2	4484.4
#3	4479.2

Sample Name: CCB Acquired: 12/5/2014 12:53:08 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**.0049**	**.0004**	**.0173**	**.0004**	**.0004**	**.0003**	**.0035**	**.0002**
Stddev	.0005	.0049	.0010	.0010	.0002	.0000	.0014	.0005	.0001
%RSD	936.9	98.66	247.2	5.816	57.76	9.912	515.5	14.17	58.68
#1	.0001	-.0004	.0005	.0182	.0004	.0004	.0011	.0041	.0001
#2	-.0005	.0091	.0014	.0162	.0001	.0004	-.0013	.0031	.0001
#3	.0005	.0061	-.0006	.0175	.0005	.0004	.0009	.0034	.0003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0002**	**.0003**	**.0009**	**.0046**	**.0860**	**.0009**	**.0063**	**.0003**	**.0001**
Stddev	.0001	.0003	.0013	.0004	.0075	.0005	.0145	.0001	.0001
%RSD	38.68	101.6	140.0	7.749	8.777	62.47	231.9	42.78	79.54
#1	.0002	.0001	.0007	.0047	.0837	.0013	.0215	.0002	.0001
#2	.0001	.0007	.0024	.0049	.0944	.0003	.0047	.0003	.0001
#3	.0002	.0002	-.0002	.0042	.0799	.0010	-.0074	.0004	.0003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0146**	**.0003**	**.0030**	**.0014**	**.0070**	**.0008**	**<.0000**	**.0014**	**.0003**
Stddev	.0040	.0001	.0003	.0009	.0038	.0001	.0006	.0010	.0005
%RSD	27.47	44.64	10.27	65.66	54.28	7.176	119.7	69.67	201.1
#1	.0192	.0004	.0031	.0016	.0111	.0008	-.0003	.0025	-.0002
#2	.0131	.0002	.0033	.0004	.0060	.0008	-.0012	.0010	.0008
#3	.0116	.0003	.0027	.0023	.0038	.0009	.0000	.0007	.0002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Sample Name: CCB Acquired: 12/5/2014 12:53:08 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	<.0000	.0008	<.0000	<.0000	.0022	.0001
Stddev	.0000	.0006	.0006	.0012	.0151	.0035	.0001
%RSD	4.493	77.81	81.99	207.6	260.7	159.0	76.94
#1	.0004	-.0014	.0003	.0005	-.0103	.0057	.0002
#2	.0004	-.0003	.0005	-.0018	-.0181	.0023	.0002
#3	.0004	-.0005	.0015	-.0004	.0110	-.0014	.0000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_3710
Units	Cts/S
Avg	4557.5
Stddev	41.6
%RSD	.91230
#1	4602.8
#2	4521.1
#3	4548.6

Sample Name: CCV Acquired: 12/5/2014 12:57:05 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.9797**	**48.37**	**4.961**	**4.912**	**4.869**	**5.026**	**4.979**	**49.95**	**4.975**
Stddev	.0076	.27	.028	.040	.150	.050	.030	.37	.026
%RSD	.7801	.5511	.5620	.8171	3.084	.9973	.6086	.7323	.5254
#1	.9831	48.68	4.989	4.951	5.007	5.051	5.012	50.32	5.004
#2	.9850	48.23	4.960	4.914	4.892	5.059	4.970	49.94	4.970
#3	.9709	48.21	4.933	4.871	4.709	4.969	4.953	49.59	4.953
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.013**	**5.033**	**4.988**	**49.49**	**49.26**	**4.918**	**48.43**	**4.941**	**1.002**
Stddev	.029	.048	.023	.34	.37	.031	.18	.023	.005
%RSD	.5716	.9453	.4680	.6810	.7420	.6393	.3794	.4707	.5081
#1	5.044	5.064	5.015	49.86	49.63	4.954	48.63	4.968	1.008
#2	5.009	5.056	4.978	49.42	49.23	4.907	48.40	4.931	.9993
#3	4.987	4.978	4.972	49.20	48.90	4.894	48.27	4.925	.9988
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**48.93**	**5.036**	**50.56**	**5.052**	**49.33**	**.9877**	**.9903**	**4.857**	**5.021**
Stddev	.32	.030	.30	.027	.25	.0044	.0086	.013	.027
%RSD	.6523	.6058	.5865	.5261	.5051	.4492	.8683	.2572	.5390
#1	49.27	5.068	50.86	5.080	49.62	.9923	.9993	4.871	5.050
#2	48.89	5.032	50.56	5.049	49.20	.9835	.9897	4.853	5.017
#3	48.64	5.007	50.27	5.027	49.17	.9874	.9821	4.846	4.996
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: CCV Acquired: 12/5/2014 12:57:05 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.987**	**4.960**	**4.915**	**1.011**	**5.014**	**4.925**	**4.997**
Stddev	.118	.045	.029	.006	.026	.020	.027
%RSD	2.372	.9015	.5978	.6333	.5282	.3958	.5476
#1	5.114	4.963	4.948	1.017	5.035	4.946	5.027
#2	4.969	5.002	4.906	1.013	5.024	4.907	4.990
#3	4.879	4.913	4.891	1.005	4.984	4.922	4.973
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**4459.5**
Stddev	27.0
%RSD	.60510
#1	4436.3
#2	4453.0
#3	4489.1

Sample Name: CCB Acquired: 12/5/2014 13:00:54 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0018	.0007	.0138	.0005	.0005	<.0000	.0030	.0001
Stddev	.0005	.0072	.0009	.0023	.0000	.0000	.0035	.0011	.0001
%RSD	308.2	400.3	130.3	16.86	9.512	9.354	714.3	36.20	53.25
#1	-.0007	-.0014	.0016	.0160	.0005	.0005	.0030	.0042	.0001
#2	.0002	-.0032	.0008	.0140	.0004	.0004	-.0041	.0021	.0002
#3	.0000	.0101	-.0003	.0114	.0004	.0005	-.0003	.0026	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0005	.0004	.0037	.0477	.0014	.0124	.0004	.0001
Stddev	.0000	.0007	.0020	.0016	.0304	.0001	.0062	.0002	.0001
%RSD	29.27	131.2	555.1	43.22	63.72	9.027	49.94	44.00	77.86
#1	.0002	.0012	.0018	.0048	.0147	.0013	.0053	.0002	.0002
#2	.0001	.0002	.0013	.0045	.0537	.0013	.0151	.0005	.0000
#3	.0001	.0001	-.0020	.0019	.0746	.0015	.0167	.0004	.0002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0167	.0004	.0024	.0009	.0066	<.0000	.0001	.0041	.0003
Stddev	.0076	.0002	.0016	.0007	.0030	.0007	.0003	.0063	.0001
%RSD	45.61	50.64	63.63	78.23	45.51	120.1	240.8	152.8	18.63
#1	.0188	.0005	.0042	.0017	.0092	.0002	.0005	.0087	.0003
#2	.0083	.0004	.0017	.0004	.0074	-.0007	-.0002	-.0031	.0003
#3	.0231	.0001	.0014	.0007	.0033	-.0012	.0001	.0067	.0002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Sample Name: CCB Acquired: 12/5/2014 13:00:54 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005	<.0000	.0004	.0000	.0192	.0033	.0002
Stddev	.0000	.0012	.0006	.0004	.0091	.0009	.0001
%RSD	9.978	893.8	146.1	917.0	47.31	26.97	57.32
#1	.0005	.0002	.0009	-.0004	.0088	.0026	.0003
#2	.0004	.0009	.0004	.0002	.0230	.0030	.0002
#3	.0005	-.0014	-.0002	.0004	.0256	.0043	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_3710
Units	Cts/S
Avg	4609.5
Stddev	2.5
%RSD	.05490
#1	4612.2
#2	4609.2
#3	4607.1

Sample Name: 160-9134-A-9-A Acquired: 12/5/2014 13:28:12 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0014	.0029	.0046	.0252	<.0000	.0002	39.51	.0000
Stddev	.0008	.0108	.0010	.0013	.0002	.0000	.0024	.09	.0001
%RSD	165.0	757.8	34.98	28.13	.8076	389.6	1049.	.2355	541.3
#1	.0002	.0090	.0020	.0042	.0255	.0000	.0019	39.57	.0002
#2	-.0014	-.0110	.0027	.0035	.0251	.0000	-.0026	39.40	-.0001
#3	-.0002	.0062	.0039	.0060	.0251	.0000	.0013	39.54	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0118	.0040	.0021	3.742	.0053	9.400	.0001	.0047
Stddev	.0000	.0005	.0012	.0020	.026	.0006	.043	.0001	.0002
%RSD	28.21	3.903	30.07	94.19	.6856	12.06	.4573	215.3	5.025
#1	-.0001	.0120	.0028	.0012	3.760	.0049	9.422	.0002	.0048
#2	-.0001	.0112	.0052	.0007	3.713	.0061	9.351	.0000	.0045
#3	-.0001	.0120	.0039	.0043	3.755	.0050	9.428	.0000	.0049
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	14.70	.0036	.0230	.0025	14.82	.0015	.0001	13.45	<.0000
Stddev	.06	.0001	.0008	.0012	.10	.0007	.0017	.06	.0001
%RSD	.4065	2.180	3.401	47.04	.6796	49.71	1859.	.4555	22.67
#1	14.66	.0037	.0222	.0038	14.92	.0007	-.0014	13.46	-.0004
#2	14.67	.0036	.0238	.0015	14.72	.0021	.0019	13.39	-.0004
#3	14.77	.0036	.0231	.0023	14.81	.0017	-.0003	13.51	-.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9134-A-9-A Acquired: 12/5/2014 13:28:12 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2215	.0028	.0004	<.0000	.0237	.0156	.0075
Stddev	.0011	.0010	.0009	.0005	.0122	.0031	.0001
%RSD	.4931	35.62	224.9	534.2	51.55	19.76	1.291
#1	.2215	.0039	.0006	.0003	.0282	.0140	.0076
#2	.2205	.0025	-.0006	.0000	.0330	.0191	.0076
#3	.2227	.0020	.0012	-.0006	.0099	.0136	.0074
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4595.1
Stddev	25.5
%RSD	.55488
#1	4570.2
#2	4621.1
#3	4593.9

Sample Name: MB 160-159967/1-A Acquired: 12/5/2014 13:32:03 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	<.0000	.0005	.0002	.0000	<.0000	.0462	.0001
Stddev	.0009	.0005	.0006	.0018	.0002	.0000	.0015	.0008	.0001
%RSD	370.6	19.06	148.7	368.2	78.28	191.0	84.73	1.785	64.23
#1	.0005	-.0030	-.0003	-.0016	.0004	.0000	-.0030	.0460	.0002
#2	-.0012	-.0023	.0001	.0015	.0000	.0001	-.0001	.0454	.0001
#3	.0000	-.0021	-.0011	.0016	.0003	.0000	-.0024	.0471	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0005	.0013	.0146	.0119	.0006	.0023	.0002	<.0000
Stddev	.0002	.0003	.0020	.0021	.0218	.0003	.0042	.0001	.0002
%RSD	367.4	60.83	154.8	14.49	182.9	54.06	185.3	70.09	1524.
#1	-.0003	.0007	.0025	.0141	-.0009	.0010	.0020	.0000	-.0002
#2	.0000	.0002	-.0010	.0127	-.0004	.0004	.0066	.0002	.0000
#3	.0001	.0007	.0025	.0169	.0371	.0004	-.0018	.0002	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0266	.0003	.0003	.0004	.0078	.0001	<.0000	.0126	.0008
Stddev	.0124	.0001	.0005	.0002	.0012	.0011	.0003	.0014	.0002
%RSD	46.73	29.72	158.4	48.32	15.01	869.3	34.31	11.49	22.25
#1	.0187	.0004	.0003	.0002	.0075	-.0008	-.0006	.0132	.0009
#2	.0410	.0002	.0008	.0005	.0090	.0014	-.0006	.0136	.0006
#3	.0201	.0003	-.0002	.0005	.0067	-.0002	-.0010	.0109	.0010
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: MB 160-159967/1-A Acquired: 12/5/2014 13:32:03 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005	<.0000	<.0000	<.0000	.0045	.0001	.0135
Stddev	.0000	.0029	.0003	.0006	.0222	.0024	.0002
%RSD	1.098	358.8	86.29	135.1	492.9	1815.	1.442
#1	.0005	.0025	-.0005	.0001	.0252	.0011	.0135
#2	.0005	-.0018	-.0006	-.0004	.0073	-.0026	.0132
#3	.0005	-.0030	.0000	-.0010	-.0190	.0018	.0136
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4629.6
Stddev	52.2
%RSD	1.1282
#1	4617.1
#2	4687.0
#3	4584.8

Sample Name: LCS 160-159967/2-A Acquired: 12/5/2014 13:36:00 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2076	9.805	1.010	1.948	1.001	1.005	1.066	11.09	1.009
Stddev	.0046	.099	.013	.024	.008	.010	.016	.16	.015
%RSD	2.204	1.006	1.327	1.212	.8373	1.014	1.510	1.483	1.467
#1	.2032	9.694	.9949	1.921	.9915	.9937	1.048	10.90	.9924
#2	.2071	9.836	1.013	1.961	1.006	1.011	1.073	11.15	1.012
#3	.2123	9.884	1.021	1.962	1.006	1.012	1.078	11.21	1.021
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.107	1.059	1.057	10.23	9.785	1.001	9.703	1.014	.5486
Stddev	.017	.024	.020	.11	.080	.006	.129	.009	.0080
%RSD	1.518	2.221	1.916	1.026	.8216	.6390	1.326	.8674	1.459
#1	1.088	1.037	1.036	10.11	9.693	.9933	9.559	1.004	.5396
#2	1.113	1.057	1.059	10.29	9.827	1.004	9.744	1.019	.5511
#3	1.119	1.084	1.076	10.29	9.836	1.005	9.806	1.019	.5550
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.805	1.077	1.073	1.093	10.30	.5245	.5080	.0308	1.102
Stddev	.097	.016	.018	.016	.17	.0097	.0073	.0023	.017
%RSD	.9894	1.456	1.728	1.502	1.670	1.854	1.442	7.410	1.533
#1	9.693	1.059	1.052	1.075	10.12	.5151	.5007	.0285	1.082
#2	9.862	1.081	1.079	1.098	10.34	.5239	.5079	.0330	1.108
#3	9.860	1.089	1.087	1.107	10.46	.5345	.5154	.0310	1.114
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LCS 160-159967/2-A Acquired: 12/5/2014 13:36:00 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.028	1.039	1.031	.2220	1.109	.9988	1.050
Stddev	.010	.020	.009	.0032	.042	.0141	.016
%RSD	.9565	1.961	.9248	1.450	3.745	1.409	1.507
#1	1.017	1.018	1.020	.2183	1.077	.9833	1.032
#2	1.033	1.041	1.036	.2234	1.095	1.002	1.054
#3	1.034	1.059	1.037	.2243	1.156	1.011	1.063
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4461.3
Stddev	53.4
%RSD	1.1980
#1	4521.8
#2	4441.5
#3	4420.6

Sample Name: 160-9191-A-1-A Acquired: 12/5/2014 13:39:27 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0087	.0008	.0223	.0542	.0001	<.0000	44.60	.0001
Stddev	.0003	.0039	.0008	.0035	.0003	.0000	.0024	.23	.0002
%RSD	339.4	44.98	96.10	15.88	.5468	38.83	304.8	.5220	157.9
#1	.0002	.0050	.0012	.0182	.0545	.0001	.0005	44.46	.0003
#2	-.0004	.0128	.0013	.0242	.0541	.0000	.0007	44.87	-.0001
#3	-.0001	.0083	-.0001	.0243	.0539	.0001	-.0035	44.46	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.1192	.0032	.0121	4.673	.0081	15.07	.0004	.0068
Stddev	.0001	.0018	.0016	.0015	.060	.0007	.08	.0003	.0001
%RSD	50.34	1.500	49.92	12.54	1.281	8.524	.5073	60.71	1.972
#1	-.0001	.1179	.0050	.0114	4.730	.0075	15.04	.0006	.0067
#2	-.0001	.1213	.0026	.0110	4.677	.0088	15.16	.0006	.0069
#3	-.0002	.1185	.0020	.0138	4.611	.0080	15.02	.0001	.0069
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	17.09	.0069	.0188	.0032	8.043	.0024	.0032	21.80	<.0000
Stddev	.15	.0002	.0005	.0006	.026	.0015	.0002	.07	.0004
%RSD	.8571	3.109	2.562	19.91	.3292	61.96	5.812	.3197	181.8
#1	17.24	.0069	.0188	.0038	8.044	.0009	.0031	21.80	.0002
#2	17.09	.0066	.0193	.0033	8.069	.0039	.0031	21.86	-.0005
#3	16.94	.0070	.0184	.0025	8.016	.0024	.0035	21.72	-.0004
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9191-A-1-A Acquired: 12/5/2014 13:39:27 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1737	.0024	.0013	.0012	.0135	.0269	.0087
Stddev	.0013	.0019	.0005	.0010	.0085	.0003	.0000
%RSD	.7518	78.10	40.54	88.42	63.06	1.176	.2923
#1	.1748	.0043	.0014	.0023	.0227	.0265	.0087
#2	.1739	.0005	.0018	.0007	.0059	.0270	.0088
#3	.1723	.0025	.0007	.0005	.0119	.0271	.0087
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4593.1
Stddev	22.7
%RSD	.49521
#1	4613.1
#2	4568.4
#3	4597.8

Sample Name: 160-9191-A-2-A Acquired: 12/5/2014 13:43:16 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0583	.0004	.0311	.0541	.0000	.0000	45.16	<.0000
Stddev	.0002	.0032	.0004	.0024	.0002	.0000	.0019	.35	.0000
%RSD	324.0	5.404	100.6	7.773	.3814	144.0	4187.	.7725	624.6
#1	.0000	.0553	.0009	.0284	.0541	.0000	-.0016	44.94	.0000
#2	-.0003	.0580	.0002	.0316	.0543	.0000	-.0003	44.98	.0000
#3	.0001	.0616	.0002	.0332	.0539	.0000	.0021	45.56	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.1240	.0005	.0194	4.619	.0068	15.17	.0005	.0067
Stddev	.0000	.0005	.0011	.0020	.009	.0004	.16	.0003	.0001
%RSD	8728.	.3758	250.1	10.38	.1864	6.103	1.064	58.18	.9909
#1	.0000	.1235	.0018	.0189	4.628	.0067	15.07	.0009	.0066
#2	.0000	.1244	-.0002	.0178	4.611	.0072	15.09	.0004	.0067
#3	.0000	.1242	-.0002	.0217	4.618	.0064	15.36	.0003	.0067
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	16.97	.0071	.0187	.0039	8.001	.0029	.0027	21.83	<.0000
Stddev	.09	.0001	.0009	.0001	.071	.0021	.0017	.04	.0002
%RSD	.5136	1.192	4.716	3.811	.8926	72.13	63.72	.1793	61.11
#1	17.04	.0070	.0185	.0039	7.950	.0019	.0023	21.79	-.0005
#2	16.99	.0071	.0180	.0037	7.970	.0015	.0013	21.83	-.0004
#3	16.87	.0072	.0197	.0040	8.082	.0053	.0047	21.87	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9191-A-2-A Acquired: 12/5/2014 13:43:16 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1724	.0003	.0010	<.0000	.0072	.0248	.0113
Stddev	.0009	.0022	.0005	.0011	.0140	.0005	.0002
%RSD	.5002	825.8	52.74	604.3	194.5	2.199	1.334
#1	.1734	.0005	.0012	.0007	.0213	.0253	.0113
#2	.1723	.0023	.0014	.0002	-.0067	.0247	.0111
#3	.1717	-.0020	.0004	-.0014	.0071	.0243	.0114
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4487.8
Stddev	30.3
%RSD	.67528
#1	4507.9
#2	4502.6
#3	4453.0

Sample Name: 160-9191-A-3-A Acquired: 12/5/2014 13:47:06 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**.0183**	**.0020**	**.0218**	**.0549**	**<.0000**	**<.0000**	**46.34**	**.0001**
Stddev	.0004	.0065	.0011	.0012	.0001	.0000	.0002	.22	.0001
%RSD	292.7	35.29	53.40	5.572	.2629	2213.	81.05	.4847	110.8
#1	.0005	.0173	.0014	.0208	.0550	.0000	.0000	46.47	.0001
#2	-.0003	.0124	.0013	.0215	.0548	.0000	-.0004	46.46	.0000
#3	.0003	.0252	.0032	.0231	.0548	.0000	-.0004	46.08	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**<.0000**	**.1265**	**<.0000**	**.0999**	**4.684**	**.0069**	**15.62**	**.0011**	**.0068**
Stddev	.0002	.0009	.0007	.0020	.030	.0012	.05	.0001	.0001
%RSD	157.4	.7411	92.03	1.966	.6519	17.48	.3467	11.45	1.457
#1	.0000	.1267	.0000	.1019	4.650	.0062	15.63	.0010	.0068
#2	-.0001	.1273	-.0011	.0999	4.695	.0082	15.66	.0011	.0068
#3	-.0004	.1255	-.0013	.0980	4.708	.0061	15.55	.0012	.0067
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**17.19**	**.0075**	**.0204**	**.0045**	**8.208**	**.0021**	**.0028**	**22.32**	**<.0000**
Stddev	.05	.0002	.0004	.0005	.038	.0012	.0021	.05	.0009
%RSD	.3010	2.899	2.035	11.61	.4662	60.30	73.12	.2246	149.4
#1	17.24	.0078	.0201	.0047	8.225	.0006	.0012	22.35	-.0012
#2	17.13	.0074	.0202	.0049	8.235	.0029	.0021	22.34	-.0010
#3	17.20	.0074	.0209	.0039	8.164	.0027	.0052	22.26	.0004
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9191-A-3-A Acquired: 12/5/2014 13:47:06 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1745	.0009	.0013	.0000	.0193	.0264	.0074
Stddev	.0004	.0011	.0002	.0005	.0048	.0021	.0001
%RSD	.2350	132.4	17.67	2108.	24.88	7.832	.9052
#1	.1750	.0006	.0011	-.0002	.0216	.0247	.0074
#2	.1741	-.0001	.0016	.0006	.0138	.0257	.0074
#3	.1745	.0021	.0013	-.0003	.0224	.0287	.0073
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4385.3
Stddev	27.0
%RSD	.61459
#1	4365.0
#2	4375.2
#3	4415.9

Sample Name: 160-9191-A-4 Acquired: 12/5/2014 13:50:55 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0081	.0010	.0163	.0544	<.0000	.0009	46.56	.0001
Stddev	.0006	.0062	.0001	.0031	.0001	.0000	.0017	.82	.0000
%RSD	1166.	76.96	15.19	18.89	.1815	19.43	194.0	1.758	42.40
#1	.0003	.0150	.0011	.0148	.0546	.0000	.0025	47.38	.0002
#2	-.0006	.0030	.0008	.0199	.0544	.0000	.0012	46.55	.0001
#3	.0005	.0062	.0010	.0143	.0544	.0000	-.0010	45.75	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.1240	.0018	.0041	4.656	.0074	15.61	.0005	.0069
Stddev	.0001	.0023	.0007	.0013	.037	.0001	.18	.0002	.0003
%RSD	171.8	1.844	38.92	31.57	.7854	1.868	1.155	41.67	4.516
#1	.0002	.1265	.0025	.0056	4.684	.0072	15.76	.0003	.0069
#2	.0000	.1234	.0018	.0031	4.615	.0074	15.66	.0006	.0072
#3	.0000	.1221	.0011	.0037	4.669	.0075	15.41	.0007	.0066
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	17.14	.0072	.0196	.0045	8.173	.0015	.0028	22.22	<.0000
Stddev	.05	.0002	.0005	.0009	.191	.0010	.0011	.04	.0007
%RSD	.2812	2.449	2.448	19.07	2.335	63.08	39.04	.1800	364.7
#1	17.13	.0072	.0200	.0050	8.369	.0004	.0028	22.26	-.0008
#2	17.10	.0074	.0191	.0035	8.163	.0022	.0017	22.21	.0005
#3	17.20	.0071	.0197	.0049	7.988	.0020	.0039	22.18	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9191-A-4 Acquired: 12/5/2014 13:50:55 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1733	.0027	.0010	.0007	.0115	.0263	.0068
Stddev	.0003	.0029	.0006	.0007	.0054	.0014	.0001
%RSD	.1709	104.2	61.15	90.52	46.77	5.401	1.325
#1	.1736	.0018	.0008	.0000	.0114	.0250	.0069
#2	.1730	.0005	.0017	.0013	.0170	.0278	.0068
#3	.1732	.0060	.0005	.0009	.0062	.0262	.0067
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4337.6
Stddev	81.7
%RSD	1.8825
#1	4270.8
#2	4313.4
#3	4428.6

Sample Name: 160-9191-B-9-A Acquired: 12/5/2014 13:54:45 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0112	.0041	.0171	.0372	<.0000	<.0000	57.63	.0001
Stddev	.0004	.0090	.0005	.0029	.0002	.0000	.0004	.49	.0001
%RSD	73.28	79.91	11.54	17.09	.4543	40.01	40.45	.8560	78.47
#1	-.0009	.0211	.0039	.0161	.0370	.0000	-.0015	57.43	.0001
#2	-.0007	.0036	.0038	.0204	.0373	.0000	-.0007	57.27	.0002
#3	-.0001	.0090	.0047	.0149	.0374	.0000	-.0008	58.19	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0434	.0023	.0159	6.804	.0080	16.22	.0021	.0049
Stddev	.0002	.0013	.0012	.0016	.015	.0005	.11	.0002	.0001
%RSD	347.3	3.031	54.07	10.27	.2232	6.746	.6540	11.82	2.211
#1	.0003	.0423	.0018	.0177	6.794	.0076	16.18	.0019	.0050
#2	-.0001	.0431	.0036	.0146	6.822	.0086	16.15	.0020	.0050
#3	.0000	.0449	.0013	.0155	6.798	.0078	16.34	.0024	.0048
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	37.58	.0052	.0248	.0034	33.25	.0028	.0029	17.11	<.0000
Stddev	.10	.0001	.0010	.0006	.27	.0005	.0021	.03	.0002
%RSD	.2645	2.157	3.966	17.85	.8222	15.99	71.42	.1612	70.16
#1	37.58	.0053	.0236	.0037	33.04	.0025	.0031	17.08	-.0006
#2	37.67	.0053	.0254	.0038	33.15	.0027	.0007	17.12	-.0002
#3	37.47	.0051	.0253	.0027	33.56	.0033	.0048	17.13	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9191-B-9-A Acquired: 12/5/2014 13:54:45 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3663	.0001	.0017	.0001	.0204	.0119	.0055
Stddev	.0013	.0003	.0009	.0005	.0095	.0017	.0000
%RSD	.3646	236.5	51.84	589.3	46.45	14.21	.6065
#1	.3655	.0001	.0026	.0007	.0197	.0103	.0055
#2	.3679	-.0002	.0008	-.0003	.0113	.0137	.0055
#3	.3656	.0005	.0018	-.0002	.0303	.0118	.0055
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4269.5
Stddev	36.7
%RSD	.85854
#1	4292.5
#2	4288.8
#3	4227.2

Sample Name: 160-9191-B-9-A SD Acquired: 12/5/2014 13:58:37 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=5

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0017	.0010	.0043	.0072	.0000	.0011	11.39	.0001
Stddev	.0003	.0077	.0009	.0003	.0001	.0000	.0007	.20	.0000
%RSD	270.4	459.6	97.77	6.639	1.253	289.7	63.26	1.751	78.55
#1	-.0001	.0104	.0002	.0040	.0073	.0000	.0018	11.62	.0001
#2	.0002	-.0011	.0020	.0043	.0071	.0000	.0005	11.28	.0000
#3	-.0005	-.0043	.0007	.0045	.0071	.0000	.0010	11.27	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0087	.0022	.0021	1.285	.0017	3.038	.0006	.0010
Stddev	.0001	.0002	.0018	.0011	.033	.0004	.044	.0002	.0004
%RSD	40.61	2.752	82.54	55.12	2.581	20.77	1.450	32.00	34.70
#1	-.0003	.0085	.0032	.0019	1.323	.0015	3.089	.0006	.0007
#2	-.0002	.0086	.0001	.0033	1.274	.0021	3.017	.0009	.0014
#3	-.0005	.0090	.0033	.0010	1.259	.0015	3.009	.0005	.0010
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.941	.0012	.0048	.0007	6.406	.0017	.0014	3.159	.0001
Stddev	.045	.0003	.0003	.0006	.111	.0005	.0013	.015	.0004
%RSD	.6474	29.45	5.216	90.19	1.734	30.95	94.31	.4797	511.1
#1	6.895	.0015	.0045	.0003	6.534	.0023	-.0001	3.175	.0002
#2	6.941	.0011	.0049	.0003	6.348	.0014	.0017	3.144	.0005
#3	6.985	.0009	.0050	.0013	6.336	.0014	.0024	3.159	-.0004
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9191-B-9-A SD Acquired: 12/5/2014 13:58:37 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=5

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0688**	**<.0000**	**.0002**	**<.0000**	**.0291**	**.0032**	**.0075**
Stddev	.0004	.0030	.0002	.0006	.0026	.0011	.0003
%RSD	.6168	457.1	90.29	62.75	9.002	34.78	3.989
#1	.0683	.0018	.0000	-.0006	.0304	.0045	.0078
#2	.0689	-.0041	.0002	-.0006	.0261	.0024	.0074
#3	.0692	.0002	.0003	-.0016	.0309	.0027	.0072
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**4403.2**
Stddev	99.8
%RSD	2.2666
#1	4290.0
#2	4440.9
#3	4478.6

Sample Name: 160-9191-B-9-B MS Acquired: 12/5/2014 14:02:31 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2032**	**9.476**	**.9856**	**1.922**	**1.002**	**.9746**	**1.011**	**65.45**	**.9745**
Stddev	.0015	.067	.0120	.018	.007	.0047	.015	.41	.0111
%RSD	.7335	.7061	1.215	.9483	.7084	.4808	1.516	.6273	1.136
#1	.2038	9.507	.9881	1.937	1.007	.9778	1.015	65.37	.9778
#2	.2043	9.522	.9961	1.928	1.005	.9769	1.024	65.89	.9835
#3	.2015	9.399	.9725	1.902	.9938	.9693	.9945	65.08	.9621
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.031**	**1.041**	**.9980**	**9.860**	**16.39**	**.9725**	**25.05**	**.9682**	**.5238**
Stddev	.009	.004	.0071	.035	.08	.0070	.12	.0059	.0057
%RSD	.9087	.4104	.7103	.3527	.5008	.7168	.4940	.6115	1.086
#1	1.031	1.044	.9997	9.859	16.43	.9772	24.98	.9670	.5254
#2	1.040	1.044	1.004	9.895	16.45	.9759	25.19	.9746	.5285
#3	1.021	1.036	.9902	9.825	16.29	.9645	24.98	.9630	.5174
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**46.65**	**1.009**	**1.070**	**1.028**	**42.89**	**.5041**	**.4974**	**16.96**	**1.040**
Stddev	.33	.008	.013	.009	.58	.0062	.0060	.10	.009
%RSD	.7029	.8129	1.231	.8742	1.346	1.238	1.213	.5680	.8641
#1	46.93	1.010	1.074	1.031	43.07	.5058	.4993	16.99	1.043
#2	46.74	1.017	1.081	1.035	43.35	.5093	.5022	17.04	1.047
#3	46.29	1.000	1.055	1.018	42.24	.4972	.4907	16.85	1.030
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9191-B-9-B MS Acquired: 12/5/2014 14:02:31 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.351	.9818	.9925	.2058	1.042	.9654	.9976
Stddev	.010	.0032	.0058	.0033	.018	.0061	.0104
%RSD	.7218	.3242	.5874	1.608	1.694	.6283	1.038
#1	1.360	.9785	.9956	.2052	1.046	.9654	1.000
#2	1.354	.9848	.9962	.2094	1.057	.9714	1.006
#3	1.341	.9823	.9858	.2028	1.023	.9593	.9861
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4457.9
Stddev	25.9
%RSD	.58182
#1	4452.4
#2	4435.1
#3	4486.1

Sample Name: CCV Acquired: 12/5/2014 14:05:58 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.005**	**49.28**	**5.063**	**4.988**	**4.873**	**5.051**	**5.049**	**51.46**	**5.058**
Stddev	.012	.38	.040	.042	.052	.041	.039	.33	.034
%RSD	1.165	.7734	.7908	.8397	1.072	.8027	.7666	.6373	.6737
#1	1.016	49.67	5.093	5.031	4.814	5.015	5.078	51.76	5.084
#2	.9930	48.92	5.018	4.947	4.894	5.095	5.005	51.11	5.019
#3	1.005	49.24	5.078	4.985	4.912	5.043	5.064	51.53	5.070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.123**	**5.159**	**5.045**	**50.52**	**49.96**	**4.967**	**49.99**	**5.059**	**1.016**
Stddev	.041	.049	.032	.39	.23	.021	.51	.042	.009
%RSD	.8085	.9431	.6280	.7744	.4627	.4257	1.026	.8312	.8848
#1	5.155	5.200	5.074	50.93	50.17	4.988	50.52	5.103	1.022
#2	5.077	5.105	5.011	50.15	49.71	4.946	49.49	5.019	1.005
#3	5.138	5.171	5.052	50.48	50.01	4.967	49.97	5.056	1.019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**49.68**	**5.145**	**51.85**	**5.157**	**50.14**	**1.001**	**1.013**	**4.961**	**5.134**
Stddev	.28	.038	.39	.044	.36	.006	.009	.027	.045
%RSD	.5658	.7466	.7605	.8446	.7265	.6305	.8429	.5439	.8737
#1	49.96	5.173	52.16	5.189	50.39	1.008	1.016	4.988	5.172
#2	49.40	5.101	51.41	5.108	49.72	.9953	1.003	4.934	5.085
#3	49.69	5.159	51.98	5.175	50.30	1.000	1.019	4.962	5.145
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: CCV Acquired: 12/5/2014 14:05:58 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.054**	**5.094**	**5.005**	**1.037**	**5.125**	**5.033**	**5.092**
Stddev	.141	.069	.035	.008	.057	.049	.041
%RSD	2.779	1.346	.7069	.7524	1.115	.9654	.8025
#1	4.926	5.156	5.042	1.040	5.183	5.076	5.121
#2	5.031	5.021	4.971	1.028	5.069	4.980	5.045
#3	5.204	5.106	5.003	1.042	5.122	5.044	5.109
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**4353.5**
Stddev	34.4
%RSD	.79056
#1	4326.4
#2	4392.2
#3	4341.7

Sample Name: CCB Acquired: 12/5/2014 14:09:46 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0004	.0000	.0122	.0003	.0000	<.0000	.0008	<.0000
Stddev	.0005	.0055	.0010	.0019	.0001	.0000	.0013	.0009	.0001
%RSD	107.6	1364.	6652.	15.53	23.30	85.28	81.96	112.1	299.4
#1	-.0009	-.0042	-.0003	.0143	.0003	.0000	-.0007	.0010	.0000
#2	-.0001	.0066	.0012	.0109	.0004	.0000	-.0011	.0015	-.0001
#3	-.0003	-.0012	-.0008	.0113	.0003	.0001	-.0032	-.0002	.0000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0010	.0012	<.0000	.0493	.0002	<.0000	.0001	<.0000
Stddev	.0001	.0006	.0018	.0009	.0384	.0009	.0056	.0004	.0001
%RSD	54.87	57.47	145.9	73.77	77.93	419.9	123.1	510.9	201.4
#1	-.0004	.0005	.0026	-.0002	.0049	.0011	-.0072	.0005	-.0001
#2	-.0001	.0009	-.0008	-.0019	.0706	-.0007	.0019	.0000	.0000
#3	-.0002	.0016	.0019	-.0016	.0724	.0003	-.0083	-.0002	.0000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0061	.0002	.0007	.0008	.0015	.0004	<.0000	.0020	.0003
Stddev	.0021	.0003	.0003	.0007	.0022	.0008	.0018	.0008	.0001
%RSD	34.27	213.9	50.04	85.56	142.7	205.7	224.9	40.01	47.10
#1	.0056	-.0002	.0004	.0009	.0041	-.0004	-.0022	.0029	.0002
#2	.0084	.0004	.0011	.0014	.0005	.0012	.0012	.0018	.0005
#3	.0043	.0003	.0006	.0001	.0001	.0004	-.0014	.0014	.0002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Sample Name: CCB Acquired: 12/5/2014 14:09:46 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0020	<.0000	<.0000	.0074	.0012	.0000
Stddev	.0001	.0020	.0007	.0010	.0154	.0021	.0001
%RSD	3489.	103.2	664.5	700.0	208.7	182.3	166.4
#1	.0001	.0043	-.0006	.0010	.0190	-.0007	.0001
#2	-.0001	.0004	.0007	-.0003	-.0101	.0008	.0000
#3	.0000	.0013	-.0003	-.0011	.0133	.0034	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_3710
Units	Cts/S
Avg	4316.8
Stddev	59.1
%RSD	1.3682
#1	4373.2
#2	4255.4
#3	4321.9

Sample Name: 160-9191-B-9-C MSD Acquired: 12/5/2014 14:13:43 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2022**	**9.500**	**.9990**	**1.916**	**.9967**	**.9762**	**1.038**	**66.68**	**.9875**
Stddev	.0008	.068	.0074	.013	.0068	.0049	.012	.06	.0071
%RSD	.3741	.7118	.7423	.6553	.6825	.5056	1.128	.0858	.7145
#1	.2026	9.422	.9918	1.906	.9894	.9709	1.031	66.66	.9818
#2	.2014	9.542	.9987	1.912	1.003	.9806	1.033	66.64	.9854
#3	.2028	9.536	1.007	1.930	.9979	.9770	1.052	66.75	.9954
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.049**	**1.058**	**1.021**	**9.887**	**16.35**	**.9647**	**25.44**	**.9721**	**.5451**
Stddev	.005	.002	.008	.042	.14	.0081	.10	.0030	.0038
%RSD	.5096	.2250	.7716	.4246	.8418	.8372	.3916	.3039	.6882
#1	1.045	1.055	1.015	9.838	16.20	.9555	25.33	.9687	.5418
#2	1.046	1.058	1.018	9.912	16.47	.9707	25.51	.9731	.5443
#3	1.055	1.060	1.030	9.909	16.36	.9678	25.48	.9744	.5492
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**46.79**	**1.027**	**1.081**	**1.039**	**43.54**	**.5257**	**.5021**	**17.06**	**1.074**
Stddev	.36	.004	.005	.005	.33	.0039	.0056	.07	.005
%RSD	.7778	.4271	.5086	.4423	.7664	.7435	1.114	.4216	.4943
#1	46.39	1.024	1.077	1.035	43.31	.5240	.4996	16.98	1.069
#2	47.10	1.024	1.079	1.038	43.39	.5230	.4982	17.11	1.073
#3	46.87	1.032	1.088	1.044	43.92	.5302	.5085	17.10	1.080
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9191-B-9-C MSD Acquired: 12/5/2014 14:13:43 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.350	.9998	1.013	.2069	1.047	.9701	1.017
Stddev	.010	.0007	.005	.0011	.017	.0085	.007
%RSD	.7254	.0687	.4842	.5552	1.587	.8754	.6638
#1	1.340	1.000	1.007	.2063	1.034	.9604	1.012
#2	1.359	.9991	1.016	.2061	1.066	.9761	1.015
#3	1.352	.9999	1.016	.2082	1.041	.9738	1.025
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4315.2
Stddev	1.6
%RSD	.03641
#1	4317.0
#2	4314.4
#3	4314.2

Sample Name: 160-9191-A-10-A Acquired: 12/5/2014 14:17:08 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.1156	.0044	.0219	.0409	.0000	.0013	57.78	.0002
Stddev	.0006	.0030	.0006	.0025	.0001	.0000	.0022	.39	.0001
%RSD	92.11	2.616	14.20	11.34	.1384	143.1	172.6	.6794	89.61
#1	.0000	.1130	.0051	.0229	.0410	.0000	.0024	57.71	.0000
#2	-.0008	.1148	.0039	.0237	.0408	.0000	.0028	57.42	.0003
#3	-.0013	.1189	.0043	.0191	.0409	.0001	-.0013	58.20	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0446	.0021	.2125	7.082	.0097	16.11	.0068	.0050
Stddev	.0002	.0011	.0019	.0015	.028	.0003	.05	.0001	.0002
%RSD	769.7	2.567	88.02	.6893	.3914	3.256	.3347	1.013	3.842
#1	-.0001	.0441	.0038	.2139	7.114	.0094	16.10	.0069	.0051
#2	.0000	.0438	.0024	.2110	7.070	.0100	16.07	.0067	.0052
#3	.0002	.0459	.0001	.2126	7.062	.0098	16.17	.0068	.0048
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	38.62	.0058	.0300	.0033	33.75	.0017	.0015	17.53	<.0000
Stddev	.11	.0004	.0011	.0001	.34	.0009	.0017	.05	.0003
%RSD	.2798	7.077	3.752	1.811	.9999	55.30	112.0	.3012	125.9
#1	38.74	.0062	.0309	.0033	33.82	.0006	.0031	17.55	-.0005
#2	38.52	.0054	.0287	.0033	33.38	.0024	.0016	17.47	-.0001
#3	38.61	.0059	.0303	.0032	34.05	.0019	-.0002	17.56	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9191-A-10-A Acquired: 12/5/2014 14:17:08 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3822	.0003	.0073	<.0000	.0097	.0118	.0073
Stddev	.0014	.0036	.0004	.0003	.0085	.0024	.0001
%RSD	.3649	1019.	5.391	83.57	87.49	20.00	1.338
#1	.3836	.0033	.0069	.0000	.0184	.0112	.0074
#2	.3808	-.0036	.0077	-.0006	.0014	.0144	.0073
#3	.3822	.0014	.0074	-.0005	.0095	.0098	.0073
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4444.0
Stddev	27.6
%RSD	.62182
#1	4425.6
#2	4475.8
#3	4430.6

Sample Name: MB 160-159042/1-A Acquired: 12/5/2014 14:21:00 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0040	.0005	.0011	<.0000	<.0000	<.0000	.0484	.0000
Stddev	.0005	.0071	.0010	.0030	.0003	.0000	.0005	.0002	.0001
%RSD	740.4	178.9	187.2	264.2	13680.	170.2	113.5	.4090	418.6
#1	.0005	-.0036	.0008	.0009	-.0003	.0000	-.0002	.0485	-.0001
#2	-.0005	.0105	.0014	.0042	.0001	.0000	-.0011	.0485	.0000
#3	-.0002	.0050	-.0006	-.0017	.0001	.0000	-.0002	.0481	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0006	.0003	.0044	.0309	.0001	<.0000	<.0000	.0001
Stddev	.0002	.0004	.0004	.0021	.0188	.0006	.0109	.0001	.0000
%RSD	66.25	68.26	114.7	48.52	60.65	446.0	224.5	288.2	30.19
#1	-.0003	.0001	.0005	.0047	.0442	.0001	-.0044	-.0001	.0001
#2	-.0004	.0008	.0007	.0064	.0391	-.0004	-.0160	.0001	.0001
#3	-.0001	.0009	-.0001	.0021	.0095	.0008	.0058	-.0002	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0246	.0003	.0008	.0001	.0080	.0010	.0001	.0140	.0006
Stddev	.0070	.0001	.0005	.0004	.0021	.0011	.0012	.0035	.0006
%RSD	28.59	39.14	54.98	439.1	26.33	116.7	2425.	24.97	97.04
#1	.0307	.0004	.0004	.0005	.0090	.0008	.0015	.0132	.0007
#2	.0263	.0003	.0009	-.0002	.0094	-.0001	-.0005	.0109	.0000
#3	.0169	.0002	.0013	-.0001	.0055	.0022	-.0008	.0178	.0012
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: MB 160-159042/1-A Acquired: 12/5/2014 14:21:00 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	<.0000	.0002	<.0000	<.0000	.0017	.0101
Stddev	.0000	.0059	.0001	.0004	.0123	.0034	.0000
%RSD	29.40	1875.	61.62	55.93	1107.	194.1	.4719
#1	.0001	-.0071	.0001	-.0013	.0098	.0006	.0101
#2	.0001	.0041	.0003	-.0005	.0014	.0055	.0101
#3	.0002	.0020	.0001	-.0006	-.0145	-.0010	.0102
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4533.6
Stddev	24.6
%RSD	.54215
#1	4550.1
#2	4505.3
#3	4545.3

Sample Name: LCS 160-159042/2-A Acquired: 12/5/2014 14:24:56 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2028**	**9.973**	**1.034**	**2.003**	**1.038**	**1.044**	**1.053**	**11.49**	**1.042**
Stddev	.0031	.011	.024	.011	.005	.002	.024	.23	.024
%RSD	1.506	.1141	2.276	.5690	.5106	.1629	2.241	1.989	2.316
#1	.2008	9.983	1.009	1.998	1.044	1.042	1.029	11.24	1.016
#2	.2013	9.961	1.035	1.995	1.038	1.045	1.056	11.55	1.045
#3	.2063	9.977	1.056	2.016	1.033	1.045	1.076	11.69	1.064
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.137**	**1.076**	**1.089**	**10.54**	**10.10**	**1.027**	**9.850**	**1.029**	**.5450**
Stddev	.024	.019	.025	.07	.04	.009	.155	.007	.0127
%RSD	2.136	1.744	2.345	.6417	.3515	.8248	1.575	.6675	2.337
#1	1.112	1.057	1.063	10.47	10.06	1.037	9.701	1.023	.5319
#2	1.141	1.075	1.090	10.56	10.11	1.025	9.839	1.028	.5458
#3	1.160	1.095	1.114	10.60	10.13	1.020	10.01	1.037	.5573
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.21**	**1.109**	**1.098**	**1.115**	**10.20**	**.5220**	**.5228**	**.0299**	**1.089**
Stddev	.04	.023	.022	.023	.26	.0121	.0134	.0028	.024
%RSD	.3861	2.092	2.029	2.087	2.541	2.319	2.555	9.521	2.168
#1	10.26	1.084	1.075	1.091	9.925	.5110	.5091	.0287	1.063
#2	10.18	1.112	1.099	1.116	10.24	.5199	.5233	.0332	1.093
#3	10.20	1.130	1.119	1.138	10.44	.5350	.5358	.0279	1.110
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LCS 160-159042/2-A Acquired: 12/5/2014 14:24:56 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.070	1.059	1.022	.2254	1.089	1.010	1.068
Stddev	.005	.016	.002	.0043	.019	.001	.024
%RSD	.4318	1.462	.1865	1.894	1.743	.1194	2.270
#1	1.075	1.045	1.021	.2206	1.089	1.011	1.042
#2	1.070	1.057	1.021	.2270	1.069	1.009	1.071
#3	1.065	1.076	1.025	.2286	1.107	1.010	1.090
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4462.6
Stddev	71.5
%RSD	1.6013
#1	4537.9
#2	4454.1
#3	4395.7

Sample Name: 160-9209-D-1-A Acquired: 12/5/2014 14:28:23 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0161	.0054	.0583	.0785	<.0000	<.0000	79.44	<.0000
Stddev	.0003	.0052	.0003	.0021	.0003	.0000	.0015	.75	.0001
%RSD	43.58	31.98	5.738	3.615	.3640	83.23	51.10	.9497	2414.
#1	-.0004	.0218	.0056	.0601	.0788	-.0001	-.0042	80.30	.0000
#2	-.0010	.0118	.0051	.0560	.0785	.0000	-.0035	78.91	-.0001
#3	-.0006	.0148	.0056	.0588	.0782	.0000	-.0013	79.11	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	.0175	.0021	.0879	8.951	.0093	21.70	.0065	.0053
Stddev	.0002	.0000	.0002	.0021	.028	.0010	.04	.0002	.0003
%RSD	94.06	.2481	10.13	2.373	.3107	10.44	.1739	2.988	4.967
#1	.0003	.0175	.0023	.0861	8.949	.0103	21.72	.0063	.0056
#2	.0000	.0175	.0021	.0874	8.925	.0084	21.65	.0067	.0052
#3	.0002	.0176	.0019	.0902	8.980	.0093	21.71	.0064	.0051
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	33.95	.0358	.0231	.0038	33.63	.0026	.0063	18.80	<.0000
Stddev	.11	.0004	.0001	.0002	.41	.0013	.0018	.02	.0004
%RSD	.3202	1.068	.4574	4.780	1.220	48.46	29.21	.0841	43.60
#1	34.06	.0361	.0232	.0038	34.10	.0040	.0083	18.81	-.0007
#2	33.96	.0354	.0231	.0040	33.34	.0017	.0058	18.80	-.0014
#3	33.84	.0359	.0230	.0037	33.45	.0021	.0047	18.78	-.0007
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9209-D-1-A Acquired: 12/5/2014 14:28:23 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3970	.0012	.0023	<.0000	.0319	.0183	.0090
Stddev	.0009	.0048	.0002	.0002	.0008	.0009	.0002
%RSD	.2317	415.9	9.332	114.8	2.365	5.127	1.812
#1	.3978	.0058	.0022	.0000	.0325	.0174	.0092
#2	.3972	-.0037	.0025	-.0004	.0322	.0183	.0089
#3	.3960	.0014	.0021	-.0001	.0310	.0193	.0090
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4433.6
Stddev	17.6
%RSD	.39771
#1	4428.9
#2	4453.1
#3	4418.7

Sample Name: 160-9209-A-2-A Acquired: 12/5/2014 14:32:15 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	.0050	.0585	.0736	<.0000	.0002	77.45	.0000
Stddev	.0003	.0059	.0008	.0027	.0000	.0000	.0005	.09	.0001
%RSD	43.13	97.66	15.08	4.686	.0384	87.14	229.3	.1212	234.6
#1	-.0005	-.0112	.0049	.0560	.0735	.0000	.0007	77.48	-.0001
#2	-.0004	.0004	.0043	.0581	.0736	-.0001	-.0003	77.52	.0000
#3	-.0009	-.0073	.0058	.0615	.0736	.0000	.0002	77.34	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	.0069	.0019	.0318	8.485	.0087	20.92	.0062	.0054
Stddev	.0002	.0004	.0007	.0006	.048	.0001	.05	.0002	.0001
%RSD	53.39	6.475	36.09	1.870	.5687	1.277	.2220	3.726	1.217
#1	.0002	.0069	.0018	.0313	8.456	.0086	20.97	.0063	.0055
#2	.0005	.0073	.0026	.0325	8.457	.0087	20.91	.0059	.0054
#3	.0003	.0064	.0012	.0316	8.540	.0089	20.88	.0063	.0054
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	31.57	.0355	.0217	.0030	32.63	.0031	.0072	17.89	<.0000
Stddev	.06	.0001	.0005	.0009	.31	.0007	.0017	.07	.0006
%RSD	.1849	.2244	2.444	30.26	.9353	23.22	23.08	.3981	128.1
#1	31.55	.0355	.0222	.0027	32.93	.0026	.0061	17.96	-.0011
#2	31.53	.0356	.0218	.0024	32.63	.0027	.0091	17.82	.0000
#3	31.64	.0355	.0211	.0041	32.32	.0039	.0064	17.89	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9209-A-2-A Acquired: 12/5/2014 14:32:15 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3700	.0026	.0018	<.0000	.0404	.0179	.0090
Stddev	.0006	.0021	.0008	.0000	.0128	.0009	.0000
%RSD	.1628	79.50	46.46	7.152	31.62	4.964	.4642
#1	.3694	.0044	.0019	-.0004	.0551	.0169	.0090
#2	.3700	.0031	.0024	-.0005	.0342	.0181	.0091
#3	.3706	.0004	.0009	-.0004	.0319	.0187	.0090
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4343.0
Stddev	30.0
%RSD	.68990
#1	4323.8
#2	4327.6
#3	4377.5

Sample Name: 160-9209-B-3-A Acquired: 12/5/2014 14:36:09 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0233	<.0000	.0339	.0578	<.0000	.0007	63.70	.0001
Stddev	.0006	.0056	.0011	.0036	.0002	.0000	.0017	.68	.0001
%RSD	475.1	24.19	270.0	10.67	.3496	107.7	232.9	1.063	131.7
#1	.0005	.0237	-.0009	.0344	.0575	-.0001	.0025	62.94	.0001
#2	-.0002	.0175	.0009	.0301	.0579	.0000	.0004	64.22	.0000
#3	-.0007	.0288	-.0012	.0373	.0579	.0000	-.0008	63.96	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0156	.0072	.1002	4.882	.0057	19.35	.0039	.0053
Stddev	.0002	.0010	.0006	.0018	.009	.0009	.24	.0001	.0001
%RSD	484.4	6.367	8.998	1.829	.1753	16.44	1.230	2.183	2.517
#1	-.0001	.0154	.0071	.0998	4.873	.0067	19.09	.0038	.0052
#2	.0001	.0167	.0079	.0986	4.883	.0049	19.42	.0040	.0052
#3	.0001	.0148	.0066	.1022	4.890	.0054	19.55	.0040	.0054
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	22.72	.0121	.0128	.0038	12.58	.0020	.0013	21.20	<.0000
Stddev	.10	.0001	.0006	.0012	.11	.0009	.0019	.13	.0000
%RSD	.4270	1.190	4.356	32.21	.9029	43.43	147.9	.5895	3.633
#1	22.62	.0120	.0123	.0025	12.48	.0011	-.0009	21.06	-.0007
#2	22.81	.0123	.0127	.0041	12.70	.0022	.0024	21.25	-.0007
#3	22.74	.0122	.0134	.0049	12.56	.0028	.0025	21.29	-.0006
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9209-B-3-A Acquired: 12/5/2014 14:36:09 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2331	.0004	.0020	<.0000	.0105	.0205	.0093
Stddev	.0003	.0010	.0008	.0003	.0135	.0023	.0001
%RSD	.1188	263.6	41.23	17.47	128.5	11.10	1.104
#1	.2330	-.0005	.0028	-.0020	.0243	.0182	.0092
#2	.2334	.0015	.0012	-.0017	-.0026	.0227	.0094
#3	.2330	.0002	.0019	-.0014	.0097	.0206	.0093
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4392.2
Stddev	51.3
%RSD	1.1672
#1	4451.3
#2	4365.3
#3	4360.0

Sample Name: 160-9209-B-3-A SD Acquired: 12/5/2014 14:40:01 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=5

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0023	<.0000	.0072	.0111	.0000	<.0000	12.89	.0000
Stddev	.0004	.0075	.0010	.0037	.0002	.0000	.0016	.21	.0001
%RSD	81.46	328.1	105.9	51.37	1.465	642.2	146.9	1.598	587.1
#1	-.0008	.0101	-.0015	.0038	.0110	.0000	.0003	12.66	.0001
#2	-.0006	.0015	.0002	.0067	.0113	.0000	-.0008	12.93	.0000
#3	.0000	-.0047	-.0015	.0111	.0112	.0000	-.0029	13.07	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0033	.0029	.0180	.9725	.0003	3.702	.0005	.0010
Stddev	.0002	.0009	.0010	.0008	.0023	.0009	.022	.0001	.0001
%RSD	63.82	28.06	33.25	4.297	.2380	292.7	.6068	19.27	13.54
#1	-.0001	.0043	.0020	.0172	.9739	.0013	3.677	.0004	.0009
#2	-.0006	.0032	.0029	.0180	.9738	.0000	3.719	.0005	.0011
#3	-.0004	.0024	.0039	.0188	.9699	-.0004	3.711	.0006	.0011
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.293	.0025	.0023	.0013	2.444	.0018	.0004	4.004	<.0000
Stddev	.020	.0002	.0005	.0004	.043	.0009	.0015	.008	.0003
%RSD	.4552	8.536	20.76	32.95	1.782	52.40	342.0	.1929	419.3
#1	4.315	.0026	.0027	.0013	2.399	.0009	-.0010	3.996	-.0004
#2	4.276	.0026	.0018	.0018	2.449	.0028	.0019	4.006	.0003
#3	4.289	.0022	.0025	.0009	2.485	.0018	.0005	4.011	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9209-B-3-A SD Acquired: 12/5/2014 14:40:01 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=5

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0449	<.0000	.0003	.0004	<.0000	.0072	.0077
Stddev	.0001	.0024	.0001	.0006	.0165	.0009	.0001
%RSD	.2819	686.4	38.56	151.9	325.0	12.74	.6590
#1	.0450	.0017	.0002	.0007	.0044	.0082	.0077
#2	.0449	-.0030	.0003	.0009	.0045	.0071	.0077
#3	.0448	.0002	.0003	-.0003	-.0242	.0064	.0078
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4421.4
Stddev	26.3
%RSD	.59588
#1	4450.2
#2	4398.5
#3	4415.7

Sample Name: 160-9209-B-3-B MS Acquired: 12/5/2014 14:43:54 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2039**	**9.379**	**.9914**	**1.980**	**1.015**	**.9665**	**1.011**	**71.25**	**.9892**
Stddev	.0029	.047	.0057	.009	.003	.0029	.011	.37	.0071
%RSD	1.407	.5024	.5747	.4720	.2854	.3051	1.048	.5142	.7176
#1	.2006	9.372	.9890	1.969	1.014	.9649	1.006	71.09	.9867
#2	.2052	9.430	.9979	1.986	1.018	.9699	1.023	71.67	.9972
#3	.2059	9.336	.9873	1.985	1.012	.9647	1.004	70.99	.9837
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.028**	**1.007**	**1.003**	**9.764**	**14.70**	**.9820**	**28.06**	**.9643**	**.5089**
Stddev	.006	.012	.005	.038	.04	.0050	.19	.0064	.0037
%RSD	.5996	1.227	.4544	.3923	.2689	.5096	.6636	.6604	.7324
#1	1.025	.9923	.9997	9.724	14.70	.9814	27.87	.9577	.5065
#2	1.035	1.014	1.008	9.801	14.73	.9872	28.24	.9704	.5132
#3	1.024	1.014	1.000	9.765	14.66	.9773	28.07	.9650	.5070
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**32.36**	**1.011**	**1.067**	**1.044**	**22.57**	**.4940**	**.5052**	**21.23**	**1.008**
Stddev	.13	.006	.006	.006	.18	.0040	.0018	.11	.007
%RSD	.4069	.5980	.5630	.5740	.8031	.8073	.3588	.5190	.6752
#1	32.33	1.008	1.067	1.040	22.54	.4913	.5036	21.18	1.004
#2	32.51	1.017	1.072	1.051	22.77	.4986	.5072	21.35	1.016
#3	32.25	1.006	1.060	1.042	22.41	.4921	.5047	21.15	1.004
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9209-B-3-B MS Acquired: 12/5/2014 14:43:54 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.211	.9785	.9522	.2122	1.060	.9721	1.003
Stddev	.003	.0096	.0040	.0009	.020	.0073	.007
%RSD	.2299	.9770	.4161	.4209	1.927	.7472	.7217
#1	1.212	.9687	.9496	.2117	1.037	.9681	1.001
#2	1.213	.9878	.9568	.2132	1.067	.9805	1.012
#3	1.208	.9788	.9502	.2117	1.076	.9678	.9976
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4371.6
Stddev	30.2
%RSD	.69129
#1	4402.1
#2	4341.7
#3	4371.1

Sample Name: 160-9209-B-3-C MSD Acquired: 12/5/2014 14:47:20 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2049**	**9.528**	**1.013**	**1.983**	**1.028**	**.9810**	**1.024**	**74.22**	**1.009**
Stddev	.0016	.034	.004	.015	.002	.0019	.004	.37	.004
%RSD	.7779	.3574	.4428	.7488	.1758	.1949	.3728	.4960	.4478
#1	.2033	9.491	1.008	1.973	1.027	.9791	1.021	73.81	1.004
#2	.2065	9.558	1.017	2.000	1.030	.9829	1.028	74.51	1.013
#3	.2048	9.534	1.015	1.976	1.026	.9811	1.024	74.35	1.011
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.052**	**1.036**	**1.033**	**9.982**	**14.88**	**.9817**	**29.10**	**.9811**	**.5227**
Stddev	.004	.010	.003	.032	.03	.0022	.16	.0062	.0024
%RSD	.3465	.9502	.3012	.3199	.2080	.2269	.5401	.6328	.4621
#1	1.048	1.030	1.030	9.947	14.84	.9794	28.92	.9739	.5199
#2	1.054	1.047	1.035	9.989	14.90	.9838	29.17	.9845	.5241
#3	1.053	1.031	1.034	10.01	14.89	.9819	29.22	.9848	.5241
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**32.75**	**1.035**	**1.092**	**1.062**	**23.19**	**.5048**	**.5128**	**21.86**	**1.025**
Stddev	.09	.004	.003	.005	.09	.0027	.0027	.11	.006
%RSD	.2886	.4369	.2711	.5010	.3686	.5270	.5183	.5100	.5721
#1	32.75	1.030	1.091	1.056	23.10	.5035	.5103	21.73	1.019
#2	32.84	1.038	1.095	1.066	23.27	.5079	.5126	21.93	1.030
#3	32.65	1.037	1.090	1.065	23.20	.5031	.5156	21.91	1.027
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9209-B-3-C MSD Acquired: 12/5/2014 14:47:20 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.229	.9991	.9639	.2145	1.070	.9886	1.094
Stddev	.002	.0118	.0037	.0002	.017	.0072	.004
%RSD	.1977	1.184	.3795	.0840	1.597	.7282	.3717
#1	1.228	.9900	.9597	.2147	1.054	.9803	1.090
#2	1.232	1.012	.9655	.2143	1.088	.9935	1.097
#3	1.227	.9947	.9665	.2146	1.069	.9919	1.096
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4309.9
Stddev	25.9
%RSD	.60035
#1	4339.7
#2	4296.5
#3	4293.5

Sample Name: CCV Acquired: 12/5/2014 14:50:47 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.9955**	**48.52**	**5.209**	**4.879**	**4.908**	**4.956**	**5.183**	**52.33**	**5.179**
Stddev	.0073	.19	.020	.008	.032	.063	.014	.27	.018
%RSD	.7329	.3864	.3735	.1667	.6566	1.273	.2776	.5124	.3401
#1	.9950	48.32	5.197	4.871	4.888	5.026	5.184	52.21	5.173
#2	.9885	48.57	5.198	4.887	4.891	4.904	5.169	52.15	5.165
#3	1.003	48.68	5.231	4.881	4.946	4.937	5.198	52.64	5.199
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.248**	**5.210**	**5.177**	**50.43**	**49.38**	**4.865**	**49.84**	**5.024**	**1.048**
Stddev	.018	.033	.018	.22	.05	.011	.34	.028	.004
%RSD	.3354	.6401	.3407	.4291	.1036	.2211	.6801	.5485	.3973
#1	5.236	5.212	5.172	50.25	49.33	4.853	49.56	5.000	1.046
#2	5.239	5.175	5.162	50.35	49.44	4.875	49.74	5.018	1.046
#3	5.268	5.242	5.196	50.67	49.38	4.868	50.22	5.054	1.053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**48.30**	**5.275**	**53.08**	**5.305**	**51.65**	**1.031**	**1.038**	**4.892**	**5.277**
Stddev	.08	.022	.19	.022	.17	.001	.004	.026	.022
%RSD	.1561	.4094	.3583	.4097	.3319	.0832	.3597	.5295	.4233
#1	48.26	5.263	53.00	5.291	51.53	1.032	1.038	4.864	5.268
#2	48.39	5.261	52.93	5.294	51.57	1.031	1.035	4.915	5.260
#3	48.26	5.299	53.29	5.330	51.85	1.031	1.042	4.896	5.302
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: CCV Acquired: 12/5/2014 14:50:47 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.965**	**5.024**	**4.950**	**1.060**	**5.107**	**4.971**	**5.225**
Stddev	.062	.029	.016	.004	.041	.021	.017
%RSD	1.241	.5702	.3178	.3848	.8028	.4273	.3158
#1	4.993	5.020	4.934	1.058	5.113	4.948	5.215
#2	4.894	4.998	4.949	1.056	5.064	4.975	5.215
#3	5.007	5.055	4.966	1.064	5.145	4.990	5.244
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**4265.8**
Stddev	25.0
%RSD	.58513
#1	4276.9
#2	4283.2
#3	4237.2

Sample Name: CCB Acquired: 12/5/2014 14:54:36 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0007**	**.0002**	**.0007**	**.0123**	**.0005**	**.0003**	**.0002**	**.0028**	**.0001**
Stddev	.0006	.0043	.0008	.0010	.0000	.0000	.0008	.0009	.0001
%RSD	83.40	2622.	111.4	8.069	7.137	4.579	402.2	31.80	39.03
#1	.0006	.0051	.0017	.0125	.0005	.0003	-.0004	.0035	.0002
#2	.0002	-.0027	.0002	.0113	.0005	.0004	.0012	.0031	.0001
#3	.0013	-.0019	.0003	.0132	.0005	.0003	-.0001	.0018	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**<.0000**	**.0005**	**.0004**	**.0023**	**.0520**	**<.0000**	**.0033**	**.0005**	**<.0000**
Stddev	.0002	.0004	.0001	.0015	.0078	.0007	.0170	.0002	.0003
%RSD	727.7	77.84	28.41	63.50	15.04	522.1	511.4	32.34	134.1
#1	.0000	.0002	.0003	.0013	.0600	-.0007	.0119	.0005	-.0001
#2	-.0002	.0009	.0003	.0017	.0444	.0006	.0143	.0006	.0000
#3	.0001	.0003	.0005	.0040	.0516	-.0003	-.0162	.0003	-.0005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0070**	**.0003**	**.0020**	**.0009**	**.0038**	**.0011**	**.0010**	**.0050**	**.0004**
Stddev	.0040	.0000	.0003	.0004	.0007	.0018	.0001	.0020	.0007
%RSD	56.90	10.55	13.76	41.06	18.30	158.7	13.01	40.45	181.1
#1	.0074	.0003	.0017	.0006	.0041	.0031	.0010	.0073	.0011
#2	.0108	.0003	.0023	.0009	.0043	.0003	.0010	.0034	-.0001
#3	.0028	.0003	.0020	.0014	.0030	-.0001	.0012	.0043	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Sample Name: CCB Acquired: 12/5/2014 14:54:36 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	.0009	.0006	.0003	.0130	.0006	.0001
Stddev	.0000	.0007	.0002	.0012	.0039	.0020	.0001
%RSD	8.688	72.45	42.40	458.5	29.67	368.6	159.8
#1	.0003	.0013	.0008	.0013	.0096	.0023	.0002
#2	.0003	.0012	.0005	-.0010	.0122	.0011	.0000
#3	.0004	.0002	.0003	.0005	.0172	-.0017	.0000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_3710
Units	Cts/S
Avg	4372.3
Stddev	29.2
%RSD	.66707
#1	4347.5
#2	4364.9
#3	4404.4

Sample Name: 160-9209-D-4-A Acquired: 12/5/2014 14:58:34 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0095	.0026	.0298	.0810	.0001	<.0000	220.2	.0001
Stddev	.0004	.0046	.0010	.0064	.0003	.0000	.0022	1.3	.0001
%RSD	5745.	48.62	37.76	21.67	.3429	65.13	22330.	.5939	106.1
#1	.0005	.0146	.0031	.0351	.0812	.0000	-.0019	221.5	.0000
#2	-.0004	.0085	.0032	.0226	.0807	.0001	-.0005	220.2	.0000
#3	-.0001	.0055	.0015	.0315	.0811	.0001	.0024	218.9	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0013	.0317	<.0000	.3855	15.55	.0163	64.89	.0013	.0077
Stddev	.0002	.0007	.0005	.0017	.09	.0008	.22	.0002	.0002
%RSD	15.61	2.138	222.4	.4492	.5916	4.888	.3466	16.83	2.552
#1	.0013	.0318	.0001	.3853	15.62	.0157	65.15	.0012	.0078
#2	.0015	.0310	.0000	.3839	15.45	.0160	64.75	.0011	.0077
#3	.0011	.0323	-.0008	.3873	15.59	.0172	64.78	.0016	.0075
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	159.9	.0072	.0245	.0036	86.16	.0031	.0113	16.00	<.0000
Stddev	1.8	.0002	.0010	.0006	.61	.0009	.0019	.08	.0003
%RSD	1.097	3.225	4.072	16.04	.7113	28.87	16.83	.5100	98.38
#1	159.6	.0074	.0256	.0042	86.73	.0041	.0134	16.08	-.0005
#2	158.3	.0070	.0242	.0033	86.23	.0024	.0100	15.92	.0000
#3	161.8	.0073	.0237	.0032	85.51	.0027	.0104	16.01	-.0005
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9209-D-4-A Acquired: 12/5/2014 14:58:34 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.158	.0046	.0044	<.0000	.1648	.0105	.0087
Stddev	.005	.0039	.0002	.0007	.0100	.0023	.0001
%RSD	.4278	85.33	4.604	825.7	6.046	21.85	.8333
#1	1.163	.0042	.0044	.0002	.1635	.0131	.0086
#2	1.154	.0087	.0041	-.0009	.1556	.0088	.0087
#3	1.157	.0009	.0045	.0004	.1754	.0096	.0087
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4066.0
Stddev	17.3
%RSD	.42580
#1	4046.4
#2	4079.2
#3	4072.5

Sample Name: 160-9209-A-5-A Acquired: 12/5/2014 15:02:35 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000**	**.0108**	**.0034**	**.0219**	**.0831**	**<.0000**	**<.0000**	**217.2**	**<.0000**
Stddev	.0006	.0065	.0017	.0028	.0002	.0000	.0009	1.6	.0001
%RSD	8847.	60.21	49.43	12.93	.2744	86.93	85.39	.7272	602.5
#1	-.0004	.0159	.0052	.0226	.0830	.0000	-.0001	218.7	.0000
#2	-.0002	.0035	.0019	.0244	.0830	.0000	-.0013	215.6	.0000
#3	.0006	.0130	.0031	.0188	.0834	.0000	-.0019	217.4	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0015**	**.0262**	**.0004**	**.3533**	**15.89**	**.0172**	**65.34**	**.0008**	**.0075**
Stddev	.0002	.0004	.0012	.0015	.07	.0001	.08	.0002	.0001
%RSD	14.55	1.533	306.4	.4285	.4647	.4527	.1181	28.70	2.009
#1	.0014	.0264	.0014	.3526	15.81	.0173	65.35	.0009	.0076
#2	.0017	.0264	.0007	.3523	15.95	.0171	65.26	.0006	.0075
#3	.0014	.0257	-.0009	.3551	15.91	.0171	65.41	.0010	.0073
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**163.7**	**.0055**	**.0243**	**.0032**	**84.56**	**.0024**	**.0136**	**16.37**	**<.0000**
Stddev	2.3	.0000	.0003	.0005	.76	.0010	.0010	.03	.0001
%RSD	1.382	.7525	1.398	16.79	.9032	43.22	7.063	.1663	14.94
#1	163.0	.0056	.0243	.0031	85.17	.0012	.0127	16.36	-.0010
#2	161.8	.0055	.0240	.0037	83.70	.0032	.0135	16.35	-.0008
#3	166.2	.0055	.0247	.0027	84.80	.0027	.0146	16.40	-.0008
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9209-A-5-A Acquired: 12/5/2014 15:02:35 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.189	.0061	.0037	<.0000	.1676	.0070	.0094
Stddev	.003	.0035	.0005	.0005	.0076	.0004	.0001
%RSD	.2467	57.46	14.19	52.51	4.511	5.946	.7985
#1	1.186	.0028	.0041	-.0007	.1755	.0072	.0094
#2	1.188	.0098	.0031	-.0005	.1604	.0065	.0093
#3	1.192	.0058	.0040	-.0014	.1669	.0072	.0094
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4169.0
Stddev	27.4
%RSD	.65674
#1	4146.0
#2	4199.3
#3	4161.7

Sample Name: 160-9209-D-8-A Acquired: 12/5/2014 15:06:36 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000**	**.0101**	**.0051**	**.0542**	**.0695**	**<.0000**	**.0008**	**71.53**	**.0000**
Stddev	.0002	.0051	.0003	.0006	.0003	.0000	.0029	.44	.0001
%RSD	2059.	50.68	6.115	1.078	.4057	178.9	373.6	.6153	3787.
#1	-.0002	.0159	.0048	.0546	.0696	-.0001	.0006	71.12	.0001
#2	.0002	.0070	.0055	.0544	.0692	.0000	.0038	71.48	.0000
#3	.0000	.0072	.0051	.0535	.0697	.0000	-.0020	72.00	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000**	**.0115**	**.0022**	**.1123**	**7.978**	**.0082**	**18.95**	**.0019**	**.0050**
Stddev	.0002	.0005	.0008	.0016	.024	.0017	.12	.0004	.0001
%RSD	1097.	4.400	35.95	1.438	.2979	20.92	.6148	19.03	1.586
#1	-.0001	.0119	.0022	.1118	7.982	.0074	18.89	.0016	.0051
#2	-.0001	.0115	.0014	.1142	7.952	.0070	18.87	.0017	.0049
#3	.0002	.0109	.0030	.1111	7.999	.0102	19.08	.0023	.0050
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**38.03**	**.0092**	**.0244**	**.0041**	**33.01**	**.0017**	**.0065**	**17.59**	**<.0000**
Stddev	.13	.0003	.0010	.0008	.17	.0010	.0014	.04	.0002
%RSD	.3287	3.175	3.977	18.91	.5043	61.17	21.30	.2473	18.80
#1	38.13	.0089	.0251	.0032	32.82	.0007	.0069	17.58	-.0011
#2	37.89	.0094	.0248	.0047	33.09	.0015	.0076	17.55	-.0012
#3	38.08	.0094	.0233	.0043	33.12	.0028	.0049	17.64	-.0008
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9209-D-8-A Acquired: 12/5/2014 15:06:36 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3366	.0044	.0021	<.0000	.0427	.0163	.0082
Stddev	.0011	.0028	.0006	.0009	.0080	.0017	.0001
%RSD	.3234	64.18	29.14	276.7	18.73	10.21	1.433
#1	.3378	.0074	.0025	.0004	.0339	.0153	.0083
#2	.3357	.0041	.0025	-.0012	.0496	.0153	.0083
#3	.3362	.0017	.0014	-.0001	.0445	.0182	.0081
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4213.3
Stddev	6.9
%RSD	.16353
#1	4215.6
#2	4218.8
#3	4205.6

Sample Name: 160-9209-A-9-A Acquired: 12/5/2014 15:10:28 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	.0071	.0053	.0528	.0730	<.0000	<.0000	75.67	.0000
Stddev	.0003	.0034	.0006	.0030	.0004	.0000	.0029	.27	.0001
%RSD	171.6	48.08	11.58	5.767	.5882	525.8	405.7	.3588	419.8
#1	.0005	.0039	.0047	.0495	.0725	-.0001	.0018	75.45	.0001
#2	.0001	.0108	.0059	.0534	.0732	.0000	.0000	75.97	.0000
#3	-.0001	.0067	.0052	.0555	.0733	.0000	-.0038	75.58	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0078	.0017	.0447	8.251	.0088	20.42	.0011	.0053
Stddev	.0004	.0005	.0012	.0030	.024	.0011	.11	.0005	.0003
%RSD	7383.	6.918	70.34	6.799	.2845	13.03	.5199	48.81	4.977
#1	.0005	.0084	.0028	.0418	8.228	.0098	20.30	.0008	.0050
#2	-.0002	.0074	.0017	.0444	8.275	.0090	20.51	.0008	.0056
#3	-.0003	.0077	.0005	.0479	8.252	.0075	20.45	.0017	.0053
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	39.90	.0078	.0234	.0033	33.63	.0020	.0048	18.54	<.0000
Stddev	.15	.0000	.0007	.0009	.18	.0008	.0023	.10	.0003
%RSD	.3822	.3213	2.971	27.99	.5209	41.10	47.29	.5173	28.62
#1	39.72	.0078	.0242	.0030	33.50	.0029	.0052	18.46	-.0006
#2	40.01	.0079	.0229	.0043	33.83	.0016	.0024	18.64	-.0011
#3	39.95	.0078	.0231	.0025	33.56	.0014	.0069	18.51	-.0010
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9209-A-9-A Acquired: 12/5/2014 15:10:28 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3573	.0037	.0023	<.0000	.0351	.0196	.0133
Stddev	.0020	.0015	.0012	.0009	.0082	.0038	.0002
%RSD	.5600	38.83	53.11	36.44	23.30	19.12	1.238
#1	.3550	.0034	.0035	-.0030	.0332	.0155	.0132
#2	.3581	.0025	.0022	-.0029	.0281	.0227	.0135
#3	.3588	.0053	.0011	-.0014	.0441	.0207	.0132
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4292.9
Stddev	26.1
%RSD	.60696
#1	4321.5
#2	4270.5
#3	4286.6

Sample Name: 160-9209-A-10-A Acquired: 12/5/2014 15:14:20 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	.0047	.0480	.1180	<.0000	<.0000	130.2	.0001
Stddev	.0007	.0084	.0010	.0029	.0002	.0000	.0010	1.0	.0001
%RSD	60.30	250.4	20.16	6.142	.2096	21.65	49.90	.7667	134.4
#1	-.0009	-.0114	.0058	.0477	.1178	.0000	-.0010	129.7	.0000
#2	-.0019	.0053	.0040	.0452	.1179	-.0001	-.0022	129.7	.0000
#3	-.0006	-.0040	.0044	.0511	.1183	-.0001	-.0030	131.4	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	.0117	.0030	.0736	11.17	.0116	36.94	.0012	.0048
Stddev	.0001	.0012	.0018	.0010	.03	.0013	.17	.0004	.0003
%RSD	33.61	10.13	60.25	1.372	.2631	11.28	.4550	34.96	7.329
#1	.0004	.0124	.0022	.0748	11.14	.0105	36.89	.0016	.0051
#2	.0003	.0103	.0050	.0730	11.20	.0131	36.79	.0010	.0044
#3	.0002	.0123	.0017	.0731	11.18	.0113	37.12	.0009	.0048
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	52.41	.0094	.0140	.0033	48.95	.0024	.0084	18.85	<.0000
Stddev	.03	.0002	.0015	.0014	.34	.0018	.0002	.04	.0007
%RSD	.0604	2.124	10.98	41.94	.6854	75.65	2.411	.2202	221.0
#1	52.37	.0094	.0127	.0033	48.69	.0033	.0085	18.81	-.0002
#2	52.43	.0092	.0157	.0019	48.83	.0036	.0084	18.88	.0003
#3	52.43	.0096	.0137	.0046	49.33	.0003	.0081	18.87	-.0010
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9209-A-10-A Acquired: 12/5/2014 15:14:20 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6476	<.0000	.0033	<.0000	.1069	.0160	.0065
Stddev	.0009	.0006	.0002	.0013	.0112	.0025	.0002
%RSD	.1425	158.8	6.340	776.8	10.49	15.67	3.018
#1	.6479	-.0009	.0032	-.0017	.1175	.0167	.0066
#2	.6484	.0003	.0035	.0003	.1080	.0181	.0063
#3	.6466	-.0005	.0032	.0009	.0951	.0132	.0066
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4185.6
Stddev	24.0
%RSD	.57291
#1	4195.6
#2	4203.0
#3	4158.3

Sample Name: 160-9209-A-11-A Acquired: 12/5/2014 15:18:12 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0203	.0046	.0464	.1175	.0000	<.0000	133.6	<.0000
Stddev	.0005	.0083	.0008	.0011	.0009	.0000	.0014	.7	.0000
%RSD	50.52	41.08	16.69	2.415	.7822	454.5	381.5	.5556	68.64
#1	-.0007	.0116	.0051	.0452	.1168	.0000	.0002	134.2	-.0001
#2	-.0014	.0282	.0038	.0465	.1172	.0000	-.0020	133.9	-.0001
#3	-.0006	.0211	.0051	.0474	.1186	.0001	.0006	132.8	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	.0176	.0032	.1190	11.12	.0119	37.42	.0019	.0050
Stddev	.0002	.0003	.0009	.0008	.05	.0005	.16	.0005	.0001
%RSD	79.57	1.798	29.28	.6430	.4475	4.483	.4189	25.66	1.646
#1	.0005	.0179	.0040	.1181	11.12	.0119	37.34	.0018	.0050
#2	.0001	.0175	.0022	.1193	11.07	.0124	37.31	.0024	.0051
#3	.0003	.0173	.0033	.1195	11.17	.0113	37.60	.0015	.0049
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	52.43	.0109	.0163	.0032	50.42	.0022	.0113	18.96	<.0000
Stddev	.48	.0004	.0005	.0014	.42	.0010	.0009	.09	.0002
%RSD	.9223	3.976	2.866	45.08	.8240	43.89	7.685	.4869	29.64
#1	52.01	.0109	.0165	.0016	50.62	.0013	.0116	18.88	-.0005
#2	52.33	.0113	.0157	.0045	50.69	.0020	.0103	18.93	-.0006
#3	52.96	.0104	.0165	.0035	49.94	.0032	.0119	19.06	-.0008
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9209-A-11-A Acquired: 12/5/2014 15:18:12 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6462	.0032	.0027	<.0000	.1168	.0163	.0194
Stddev	.0053	.0075	.0004	.0006	.0073	.0003	.0001
%RSD	.8136	234.5	14.86	120.2	6.218	2.131	.3604
#1	.6427	.0042	.0024	-.0006	.1111	.0164	.0194
#2	.6436	.0101	.0026	-.0010	.1143	.0159	.0195
#3	.6523	-.0047	.0032	.0002	.1250	.0166	.0195
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4110.3
Stddev	7.9
%RSD	.19171
#1	4117.2
#2	4101.8
#3	4112.1

Sample Name: 160-9209-B-19-A Acquired: 12/5/2014 15:22:03 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0005**	**<.0000**	**.0007**	**.0130**	**.1042**	**<.0000**	**<.0000**	**84.71**	**.0002**
Stddev	.0007	.0105	.0009	.0015	.0006	.0000	.0003	1.33	.0001
%RSD	137.5	216.8	143.4	11.49	.5429	92.75	32.04	1.574	45.14
#1	.0013	.0038	.0003	.0145	.1048	.0000	-.0009	83.21	.0003
#2	.0003	-.0017	.0000	.0131	.1042	.0000	-.0014	85.14	.0001
#3	.0000	-.0166	.0017	.0115	.1037	-.0001	-.0008	85.77	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0003**	**.0101**	**.0021**	**.0170**	**4.711**	**.0068**	**22.74**	**.0190**	**.0009**
Stddev	.0002	.0007	.0023	.0020	.012	.0004	.16	.0000	.0001
%RSD	64.30	7.386	111.4	11.58	.2455	6.312	.7207	.2023	13.90
#1	.0004	.0110	.0042	.0150	4.715	.0067	22.60	.0191	.0008
#2	.0001	.0097	-.0004	.0189	4.720	.0065	22.92	.0191	.0010
#3	.0004	.0096	.0025	.0172	4.698	.0073	22.71	.0190	.0009
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**11.86**	**.0128**	**.0121**	**.0028**	**53.93**	**.0019**	**.0016**	**13.91**	**<.0000**
Stddev	.06	.0002	.0008	.0007	1.41	.0007	.0006	.07	.0003
%RSD	.4636	1.753	6.372	23.60	2.622	34.41	37.18	.4726	102.4
#1	11.89	.0127	.0112	.0032	52.39	.0027	.0009	13.90	.0000
#2	11.89	.0126	.0126	.0031	54.24	.0016	.0020	13.98	-.0003
#3	11.79	.0130	.0125	.0020	55.17	.0015	.0019	13.86	-.0005
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9209-B-19-A Acquired: 12/5/2014 15:22:03 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5691	.0007	.0019	<.0000	.0125	.0066	.0143
Stddev	.0027	.0043	.0002	.0014	.0068	.0041	.0004
%RSD	.4697	597.8	10.89	203.7	54.08	62.73	3.099
#1	.5718	.0047	.0021	.0009	.0059	.0109	.0138
#2	.5691	-.0037	.0017	-.0017	.0122	.0061	.0144
#3	.5665	.0011	.0018	-.0012	.0195	.0027	.0147
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4190.9
Stddev	32.3
%RSD	.77182
#1	4223.4
#2	4158.7
#3	4190.7

Sample Name: 160-9209-A-20-B Acquired: 12/5/2014 15:25:55 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.2094	.0007	.0122	.1096	<.0000	<.0000	84.08	.0001
Stddev	.0002	.0085	.0009	.0046	.0012	.0000	.0014	.76	.0001
%RSD	253.3	4.052	126.6	38.01	1.123	113.8	149.9	.9053	101.9
#1	-.0002	.2191	.0004	.0140	.1109	.0000	-.0026	84.45	.0001
#2	.0001	.2052	.0000	.0069	.1093	-.0001	-.0003	84.60	.0000
#3	-.0002	.2037	.0017	.0156	.1085	-.0001	.0000	83.21	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	.0422	.0040	.3606	4.841	.0087	23.20	.0308	.0011
Stddev	.0002	.0006	.0009	.0023	.043	.0005	.19	.0003	.0001
%RSD	41.49	1.363	21.48	.6302	.8843	5.258	.8078	1.128	10.41
#1	.0006	.0418	.0034	.3598	4.875	.0084	23.39	.0310	.0010
#2	.0004	.0428	.0050	.3632	4.855	.0084	23.18	.0310	.0012
#3	.0002	.0419	.0035	.3589	4.793	.0092	23.02	.0304	.0012
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	12.27	.0235	.0218	.0033	52.55	.0036	.0021	14.81	<.0000
Stddev	.15	.0005	.0009	.0005	.93	.0010	.0009	.14	.0002
%RSD	1.185	2.088	4.053	13.53	1.764	28.12	43.49	.9250	45.37
#1	12.43	.0239	.0217	.0038	53.27	.0043	.0031	14.97	-.0002
#2	12.24	.0236	.0227	.0030	52.86	.0024	.0022	14.78	-.0006
#3	12.15	.0229	.0209	.0031	51.50	.0040	.0012	14.70	-.0006
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9209-A-20-B Acquired: 12/5/2014 15:25:55 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5870	.0000	.0102	.0000	.0183	.0101	.0236
Stddev	.0064	.0020	.0003	.0009	.0210	.0027	.0003
%RSD	1.093	7204.	3.299	22200.	114.8	26.52	1.397
#1	.5944	.0008	.0101	.0010	.0405	.0131	.0237
#2	.5842	.0015	.0106	-.0003	.0154	.0081	.0238
#3	.5825	-.0022	.0100	-.0007	-.0011	.0090	.0232
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4396.9
Stddev	29.1
%RSD	.66150
#1	4370.4
#2	4392.2
#3	4428.0

Sample Name: MB 160-160137/1-A Acquired: 12/5/2014 15:29:46 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000**	**.0099**	**<.0000**	**.0033**	**.0003**	**.0000**	**<.0000**	**.0438**	**.0001**
Stddev	.0004	.0051	.0017	.0032	.0001	.0000	.0010	.0004	.0001
%RSD	2307.	51.27	368.0	97.77	26.81	58.96	1026.	.8303	171.2
#1	.0003	.0052	-.0012	.0040	.0003	.0000	.0005	.0442	.0002
#2	.0001	.0153	.0014	.0062	.0002	.0000	.0005	.0439	.0000
#3	-.0004	.0093	-.0016	-.0002	.0003	.0001	-.0013	.0434	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**<.0000**	**.0012**	**.0008**	**.0038**	**.1004**	**<.0000**	**.0024**	**<.0000**	**<.0000**
Stddev	.0002	.0004	.0009	.0011	.0184	.0018	.0049	.0001	.0001
%RSD	164.7	32.53	113.4	29.53	18.31	519.3	200.8	169.1	207.2
#1	.0001	.0016	.0004	.0034	.1032	.0017	-.0032	.0001	-.0001
#2	-.0002	.0010	.0017	.0051	.0808	-.0008	.0048	-.0002	.0000
#3	-.0003	.0009	.0002	.0030	.1172	-.0019	.0056	-.0002	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0312**	**.0003**	**.0007**	**.0015**	**.0233**	**<.0000**	**.0013**	**.0090**	**.0004**
Stddev	.0054	.0001	.0005	.0010	.0016	.0022	.0011	.0085	.0005
%RSD	17.18	31.50	68.46	68.18	6.673	525.5	84.94	94.52	119.7
#1	.0274	.0003	.0013	.0017	.0244	.0019	.0010	.0064	.0004
#2	.0373	.0004	.0004	.0004	.0215	-.0023	.0026	.0021	-.0001
#3	.0289	.0002	.0005	.0025	.0240	-.0008	.0004	.0186	.0009
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: MB 160-160137/1-A Acquired: 12/5/2014 15:29:46 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	<.0000	<.0000	<.0000	.0240	.0013	.0101
Stddev	.0000	.0017	.0001	.0003	.0138	.0016	.0002
%RSD	14.44	42.09	51.08	2152.	57.24	119.7	2.085
#1	.0001	-.0058	-.0001	.0003	.0207	.0031	.0099
#2	.0001	-.0040	-.0002	-.0001	.0391	.0006	.0102
#3	.0001	-.0024	-.0001	-.0003	.0122	.0002	.0103
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4325.7
Stddev	4.6
%RSD	.10661
#1	4331.0
#2	4323.0
#3	4323.1

Sample Name: LCS 160-160137/2-A Acquired: 12/5/2014 15:33:42 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1987	10.02	1.053	1.993	1.025	1.029	1.025	11.57	1.052
Stddev	.0020	.08	.009	.013	.011	.008	.006	.11	.008
%RSD	1.005	.7723	.8291	.6578	1.049	.8079	.6028	.9226	.7287
#1	.1996	10.11	1.058	2.006	1.037	1.039	1.029	11.61	1.055
#2	.1964	9.989	1.043	1.992	1.023	1.025	1.018	11.44	1.043
#3	.2002	9.960	1.058	1.980	1.015	1.024	1.027	11.65	1.058
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.156	1.096	1.100	10.50	10.07	1.022	9.996	1.037	.5298
Stddev	.010	.008	.012	.05	.13	.012	.062	.007	.0040
%RSD	.8538	.7098	1.126	.5211	1.248	1.135	.6195	.6655	.7487
#1	1.162	1.099	1.105	10.56	10.20	1.035	10.07	1.045	.5321
#2	1.144	1.087	1.086	10.46	10.05	1.021	9.946	1.033	.5252
#3	1.161	1.102	1.109	10.48	9.952	1.011	9.977	1.033	.5321
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.05	1.126	1.119	1.142	9.960	.5063	.5307	5.026	1.066
Stddev	.14	.009	.010	.008	.066	.0023	.0020	.041	.008
%RSD	1.399	.7882	.8718	.6898	.6620	.4603	.3848	.8080	.7865
#1	10.20	1.130	1.123	1.147	9.986	.5072	.5314	5.065	1.071
#2	10.01	1.116	1.108	1.133	9.885	.5036	.5284	5.030	1.056
#3	9.925	1.133	1.127	1.146	10.01	.5080	.5324	4.984	1.071
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LCS 160-160137/2-A Acquired: 12/5/2014 15:33:42 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.051	1.071	.9776	.2298	1.145	1.017	1.086
Stddev	.011	.014	.0075	.0011	.012	.012	.007
%RSD	1.001	1.301	.7636	.4583	1.062	1.147	.6696
#1	1.063	1.070	.9862	.2303	1.151	1.030	1.089
#2	1.048	1.058	.9734	.2286	1.131	1.015	1.077
#3	1.043	1.086	.9731	.2305	1.154	1.007	1.091
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4360.7
Stddev	36.2
%RSD	.82981
#1	4344.0
#2	4402.2
#3	4335.9

Sample Name: CCV Acquired: 12/5/2014 15:37:10 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.9873**	**47.88**	**5.048**	**4.860**	**4.749**	**4.921**	**5.029**	**51.39**	**5.057**
Stddev	.0166	.90	.051	.075	.016	.058	.056	.64	.059
%RSD	1.678	1.889	1.005	1.537	.3392	1.174	1.117	1.253	1.171
#1	.9782	47.68	5.005	4.845	4.747	4.893	4.980	50.97	5.005
#2	1.006	48.87	5.104	4.941	4.734	4.987	5.091	52.13	5.122
#3	.9772	47.10	5.036	4.794	4.766	4.883	5.017	51.08	5.043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.120**	**5.160**	**5.046**	**49.89**	**49.08**	**4.810**	**49.83**	**4.970**	**1.023**
Stddev	.062	.088	.053	.92	.92	.088	1.03	.095	.012
%RSD	1.211	1.709	1.046	1.836	1.870	1.835	2.068	1.905	1.185
#1	5.072	5.115	4.997	49.60	48.87	4.797	49.33	4.938	1.014
#2	5.190	5.261	5.102	50.92	50.09	4.904	51.02	5.076	1.037
#3	5.097	5.103	5.038	49.16	48.29	4.729	49.14	4.895	1.020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**48.30**	**5.152**	**51.60**	**5.176**	**49.91**	**1.001**	**1.001**	**4.844**	**5.152**
Stddev	.84	.063	.62	.059	.52	.011	.011	.075	.066
%RSD	1.729	1.214	1.198	1.150	1.050	1.137	1.142	1.545	1.279
#1	48.16	5.104	51.07	5.135	49.43	.9917	.9918	4.834	5.101
#2	49.20	5.223	52.28	5.245	50.47	1.013	1.014	4.924	5.227
#3	47.55	5.131	51.45	5.150	49.83	.9968	.9971	4.776	5.129
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: CCV Acquired: 12/5/2014 15:37:10 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.886**	**4.999**	**4.901**	**1.037**	**5.078**	**4.923**	**5.088**
Stddev	.099	.088	.088	.014	.102	.087	.062
%RSD	2.025	1.764	1.789	1.339	2.012	1.758	1.227
#1	4.863	4.945	4.874	1.026	5.027	4.901	5.036
#2	4.994	5.100	4.999	1.052	5.196	5.019	5.157
#3	4.800	4.951	4.831	1.032	5.012	4.850	5.071
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**4263.1**
Stddev	64.8
%RSD	1.5193
#1	4306.5
#2	4188.6
#3	4294.1

Sample Name: CCB Acquired: 12/5/2014 15:40:59 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	.0004	.0111	.0007	.0005	<.0000	.0034	.0003
Stddev	.0005	.0067	.0018	.0035	.0001	.0001	.0026	.0008	.0002
%RSD	447.3	444.6	414.0	31.19	17.65	13.01	128.8	24.55	52.04
#1	-.0007	.0037	.0019	.0080	.0008	.0006	-.0010	.0043	.0005
#2	.0000	-.0091	-.0016	.0149	.0006	.0005	-.0050	.0030	.0002
#3	.0004	.0009	.0010	.0105	.0008	.0004	-.0001	.0028	.0003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0014	<.0000	.0044	.0401	.0001	.0061	.0003	.0002
Stddev	.0003	.0009	.0020	.0019	.0265	.0005	.0019	.0003	.0002
%RSD	206.5	62.11	5873.	43.07	65.96	652.6	31.26	133.4	116.0
#1	.0004	.0020	.0019	.0060	.0703	-.0002	.0081	.0005	.0001
#2	.0000	.0018	.0000	.0049	.0288	-.0003	.0043	-.0001	.0004
#3	.0000	.0004	-.0020	.0023	.0212	.0007	.0059	.0004	.0000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0035	.0003	.0032	.0010	.0080	.0008	.0001	<.0000	.0006
Stddev	.0052	.0002	.0012	.0012	.0010	.0012	.0023	.0077	.0002
%RSD	148.6	70.78	36.57	124.7	12.89	141.9	3397.	2027.	29.33
#1	.0083	.0005	.0045	.0005	.0091	.0019	.0004	-.0001	.0007
#2	.0041	.0003	.0029	.0024	.0072	.0009	.0022	-.0083	.0008
#3	-.0020	.0001	.0022	.0001	.0075	-.0004	-.0023	.0072	.0004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Sample Name: CCB Acquired: 12/5/2014 15:40:59 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	.0043	<.0000	<.0000	.0049	.0027	.0003
Stddev	.0001	.0034	.0016	.0003	.0087	.0015	.0001
%RSD	19.80	78.80	366.6	13.33	177.8	56.04	28.84
#1	.0005	.0070	.0010	-.0020	.0011	.0019	.0004
#2	.0003	.0053	-.0021	-.0025	.0148	.0018	.0002
#3	.0004	.0005	-.0002	-.0019	-.0013	.0044	.0003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_3710
Units	Cts/S
Avg	4222.0
Stddev	19.6
%RSD	.46312
#1	4200.0
#2	4237.5
#3	4228.3

Sample Name: 160-9438-D-1-A Acquired: 12/5/2014 15:44:58 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0186	.0009	.0352	.0015	.0001	<.0000	55.10	.0001
Stddev	.0004	.0053	.0008	.0012	.0001	.0000	.0006	.34	.0001
%RSD	520.9	28.33	84.71	3.431	5.039	59.86	23.11	.6082	158.8
#1	.0002	.0156	.0011	.0353	.0015	.0001	-.0024	54.71	.0001
#2	.0004	.0155	.0015	.0364	.0014	.0001	-.0030	55.28	.0001
#3	-.0003	.0247	.0000	.0340	.0015	.0000	-.0019	55.30	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0017	.0005	.0259	.0860	.0123	15.72	.0043	.0003
Stddev	.0000	.0005	.0016	.0004	.0307	.0016	.02	.0002	.0002
%RSD	84.94	26.35	296.1	1.419	35.66	12.63	.1218	5.731	70.50
#1	-.0001	.0014	.0002	.0263	.0824	.0124	15.73	.0043	.0001
#2	.0000	.0015	.0023	.0257	.1184	.0106	15.70	.0041	.0005
#3	-.0001	.0022	-.0009	.0257	.0573	.0137	15.73	.0045	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	27.43	.0004	.0005	.0012	73.75	.0014	<.0000	.6850	<.0000
Stddev	.10	.0002	.0005	.0007	.41	.0017	.0006	.0074	.0003
%RSD	.3598	59.50	100.1	60.67	.5617	120.2	290.2	1.085	39.75
#1	27.37	.0006	.0001	.0013	74.08	.0005	.0005	.6770	-.0005
#2	27.37	.0003	.0004	.0005	73.89	.0033	-.0008	.6862	-.0010
#3	27.54	.0002	.0011	.0019	73.29	.0004	-.0003	.6917	-.0005
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9438-D-1-A Acquired: 12/5/2014 15:44:58 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5750	.0026	.0018	<.0000	.0092	.0016	.0075
Stddev	.0017	.0028	.0009	.0007	.0098	.0013	.0001
%RSD	.3008	108.1	51.93	43.45	106.8	80.27	.7997
#1	.5743	.0000	.0025	-.0016	.0122	.0011	.0076
#2	.5737	.0055	.0007	-.0010	.0171	.0030	.0075
#3	.5769	.0022	.0021	-.0025	-.0018	.0006	.0075
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4221.9
Stddev	9.2
%RSD	.21757
#1	4211.3
#2	4228.0
#3	4226.4

Sample Name: 160-9438-D-1-A SD Acquired: 12/5/2014 15:48:52 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=50

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000**	**<.0000**	**<.0000**	**.0108**	**.0005**	**.0000**	**<.0000**	**11.03**	**.0000**
Stddev	.0006	.0167	.0009	.0015	.0001	.0000	.0004	.27	.0001
%RSD	1723.	241.7	575.0	14.06	16.54	59.32	15.76	2.406	779.4
#1	-.0006	-.0188	-.0011	.0092	.0006	.0000	-.0023	11.32	.0001
#2	.0006	.0122	.0002	.0109	.0005	.0000	-.0021	10.96	-.0001
#3	.0000	-.0141	.0005	.0122	.0004	.0000	-.0029	10.80	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**.0013**	**.0015**	**.0057**	**.0561**	**.0021**	**3.088**	**.0008**	**.0001**
Stddev	.0000	.0002	.0014	.0007	.0173	.0006	.053	.0002	.0002
%RSD	30.43	17.73	92.86	12.93	30.78	28.71	1.717	20.93	266.3
#1	.0001	.0010	.0012	.0059	.0656	.0028	3.148	.0010	.0003
#2	.0001	.0015	.0031	.0049	.0362	.0019	3.049	.0006	-.0001
#3	.0001	.0013	.0003	.0064	.0666	.0016	3.067	.0008	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.236**	**.0001**	**<.0000**	**.0011**	**14.22**	**.0006**	**<.0000**	**.1342**	**.0002**
Stddev	.055	.0002	.0001	.0008	.40	.0008	.0017	.0052	.0002
%RSD	1.055	111.2	111.5	74.59	2.837	137.6	298.0	3.911	154.5
#1	5.207	.0000	-.0001	.0002	14.66	.0005	.0009	.1402	-.0001
#2	5.201	.0003	.0000	.0012	14.14	-.0002	-.0001	.1320	.0002
#3	5.300	.0002	-.0001	.0019	13.87	.0014	-.0024	.1304	.0004
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9438-D-1-A SD Acquired: 12/5/2014 15:48:52 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=50

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1109	.0028	.0002	<.0000	<.0000	.0003	.0080
Stddev	.0011	.0003	.0009	.0009	.0206	.0014	.0002
%RSD	1.033	12.14	384.0	162.0	397.6	496.9	2.835
#1	.1099	.0024	-.0004	.0004	.0151	.0011	.0083
#2	.1105	.0030	.0013	-.0014	-.0046	-.0013	.0079
#3	.1121	.0029	-.0002	-.0007	-.0261	.0011	.0079
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4122.6
Stddev	79.2
%RSD	1.9213
#1	4031.8
#2	4177.5
#3	4158.6

Sample Name: 160-9438-D-1-B MS Acquired: 12/5/2014 15:52:45 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0195**	**1.042**	**.1054**	**.2300**	**.0995**	**.1003**	**.0995**	**55.20**	**.1066**
Stddev	.0003	.008	.0011	.0011	.0002	.0000	.0013	.54	.0013
%RSD	1.384	.7947	1.007	.4793	.2008	.0406	1.275	.9769	1.237
#1	.0192	1.035	.1051	.2313	.0993	.1003	.1010	55.80	.1081
#2	.0197	1.051	.1045	.2292	.0997	.1003	.0989	54.76	.1055
#3	.0197	1.041	.1066	.2296	.0996	.1002	.0987	55.04	.1063
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1136**	**.1082**	**.1121**	**1.078**	**1.100**	**.1107**	**16.70**	**.1067**	**.0519**
Stddev	.0012	.0014	.0030	.002	.038	.0006	.03	.0001	.0008
%RSD	1.065	1.318	2.662	.1632	3.417	.5361	.2047	.0583	1.615
#1	.1150	.1098	.1133	1.078	1.141	.1100	16.72	.1067	.0529
#2	.1127	.1071	.1087	1.076	1.068	.1112	16.66	.1067	.0513
#3	.1131	.1078	.1143	1.079	1.091	.1109	16.73	.1068	.0516
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**28.35**	**.1117**	**.1168**	**.1144**	**74.87**	**.0507**	**.0526**	**1.271**	**.1055**
Stddev	.02	.0015	.0009	.0025	.93	.0020	.0025	.007	.0009
%RSD	.0732	1.307	.7319	2.153	1.240	3.938	4.800	.5344	.8422
#1	28.32	.1134	.1178	.1172	75.93	.0528	.0555	1.277	.1063
#2	28.36	.1106	.1167	.1125	74.20	.0506	.0508	1.264	.1045
#3	28.36	.1112	.1161	.1135	74.48	.0488	.0516	1.273	.1056
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9438-D-1-B MS Acquired: 12/5/2014 15:52:45 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6705	.1025	.0973	.0225	.1131	.1031	.1134
Stddev	.0006	.0017	.0007	.0007	.0040	.0023	.0014
%RSD	.0882	1.628	.7081	3.155	3.534	2.260	1.236
#1	.6700	.1014	.0973	.0223	.1133	.1010	.1149
#2	.6704	.1017	.0966	.0220	.1089	.1028	.1122
#3	.6711	.1044	.0979	.0233	.1169	.1056	.1130
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4129.5
Stddev	27.5
%RSD	.66660
#1	4110.8
#2	4161.1
#3	4116.7

Sample Name: 160-9438-D-1-C MSD Acquired: 12/5/2014 15:56:28 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0193**	**1.065**	**.1046**	**.2295**	**.0996**	**.1006**	**.1029**	**54.20**	**.1058**
Stddev	.0006	.012	.0014	.0039	.0011	.0009	.0007	.12	.0007
%RSD	3.070	1.099	1.366	1.686	1.151	.9266	.7169	.2160	.6909
#1	.0190	1.078	.1035	.2287	.0999	.1006	.1022	54.10	.1054
#2	.0200	1.060	.1041	.2337	.1005	.1015	.1027	54.18	.1054
#3	.0190	1.057	.1062	.2260	.0983	.0996	.1037	54.33	.1067
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1140**	**.1109**	**.1083**	**1.096**	**1.127**	**.1094**	**16.60**	**.1074**	**.0529**
Stddev	.0007	.0008	.0014	.011	.010	.0013	.09	.0010	.0005
%RSD	.6058	.6956	1.312	.9597	.9012	1.161	.5210	.9655	.9322
#1	.1137	.1100	.1068	1.102	1.117	.1106	16.61	.1080	.0527
#2	.1134	.1113	.1085	1.102	1.137	.1095	16.68	.1080	.0525
#3	.1147	.1114	.1096	1.084	1.127	.1081	16.51	.1062	.0534
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**27.80**	**.1118**	**.1155**	**.1134**	**72.26**	**.0521**	**.0523**	**1.301**	**.1058**
Stddev	.33	.0007	.0005	.0003	.75	.0008	.0014	.011	.0008
%RSD	1.180	.5827	.4323	.2903	1.038	1.505	2.651	.8776	.7244
#1	27.93	.1114	.1149	.1134	71.95	.0513	.0508	1.303	.1050
#2	28.04	.1114	.1159	.1130	71.71	.0529	.0526	1.311	.1058
#3	27.42	.1126	.1156	.1137	73.11	.0521	.0535	1.289	.1066
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9438-D-1-C MSD Acquired: 12/5/2014 15:56:28 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6623	.1083	.0982	.0234	.1240	.1038	.1121
Stddev	.0071	.0004	.0011	.0015	.0008	.0018	.0009
%RSD	1.067	.4130	1.119	6.289	.6322	1.690	.8407
#1	.6650	.1081	.0985	.0227	.1231	.1023	.1117
#2	.6677	.1088	.0991	.0223	.1241	.1033	.1114
#3	.6543	.1080	.0970	.0250	.1246	.1057	.1132
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4087.9
Stddev	27.8
%RSD	.68082
#1	4117.3
#2	4062.0
#3	4084.6

Sample Name: 160-9438-C-2-A Acquired: 12/5/2014 16:00:11 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0412	<.0000	.0260	.0011	<.0000	<.0000	46.00	<.0000
Stddev	.0006	.0134	.0005	.0037	.0001	.0000	.0015	2.19	.0002
%RSD	67.21	32.59	111.3	14.34	8.946	33.25	160.7	4.766	1044.
#1	-.0002	.0523	.0000	.0225	.0011	-.0001	-.0003	43.88	-.0001
#2	-.0014	.0450	-.0010	.0255	.0010	-.0001	-.0026	45.86	.0002
#3	-.0012	.0263	-.0004	.0300	.0011	.0000	.0001	48.26	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0017	.0028	.0456	.6189	.0140	20.58	.0150	.0001
Stddev	.0001	.0008	.0021	.0007	.0260	.0004	.34	.0002	.0000
%RSD	141.2	49.38	74.44	1.619	4.206	2.904	1.632	1.460	13.47
#1	.0000	.0026	.0022	.0447	.5893	.0138	20.27	.0148	.0002
#2	.0001	.0014	.0010	.0459	.6291	.0145	20.55	.0152	.0002
#3	.0001	.0010	.0050	.0461	.6383	.0137	20.94	.0150	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	32.86	.0006	.0012	.0016	83.47	.0009	.0017	.4510	<.0000
Stddev	.17	.0003	.0010	.0001	3.79	.0010	.0018	.0104	.0004
%RSD	.5184	52.91	79.15	8.123	4.534	115.6	105.5	2.308	171.8
#1	32.72	.0008	.0010	.0015	79.81	-.0003	.0019	.4419	-.0002
#2	32.82	.0002	.0023	.0018	83.25	.0017	-.0002	.4488	-.0007
#3	33.05	.0007	.0004	.0016	87.36	.0012	.0033	.4623	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9438-C-2-A Acquired: 12/5/2014 16:00:11 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7332	.0007	.0018	<.0000	.0121	.0034	.0048
Stddev	.0024	.0046	.0006	.0010	.0057	.0020	.0002
%RSD	.3304	640.8	31.68	219.6	47.04	56.92	4.376
#1	.7314	-.0045	.0020	-.0008	.0087	.0053	.0046
#2	.7323	.0041	.0022	-.0013	.0186	.0036	.0050
#3	.7360	.0025	.0012	.0007	.0089	.0014	.0048
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4221.5
Stddev	76.5
%RSD	1.8130
#1	4300.0
#2	4217.3
#3	4147.1

Sample Name: MB 160-159979/1-A Acquired: 12/5/2014 16:04:04 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**<.0000**	**.0001**	**.0014**	**.0042**	**.0000**	**.0002**	**.0713**	**<.0000**
Stddev	.0005	.0024	.0007	.0045	.0001	.0000	.0009	.0010	.0000
%RSD	322.1	104.0	1153.	315.0	2.392	125.2	436.0	1.337	85.66
#1	.0005	-.0048	.0006	.0038	.0041	.0000	-.0001	.0723	-.0001
#2	-.0004	.0000	.0003	-.0037	.0043	.0000	.0012	.0704	-.0001
#3	.0003	-.0021	-.0007	.0042	.0043	.0000	-.0005	.0712	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**<.0000**	**.0011**	**.0006**	**.0045**	**.0231**	**<.0000**	**.0101**	**.0001**	**.0000**
Stddev	.0000	.0007	.0013	.0009	.0220	.0004	.0052	.0002	.0002
%RSD	10.60	60.51	206.9	19.01	95.59	49.92	50.84	153.2	404.1
#1	-.0002	.0019	.0008	.0049	.0452	-.0009	.0043	.0003	.0002
#2	-.0002	.0006	-.0007	.0051	.0228	-.0003	.0120	.0000	-.0001
#3	-.0002	.0009	.0018	.0035	.0011	-.0011	.0141	.0001	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1155**	**.0003**	**.0005**	**.0013**	**.0187**	**.0014**	**<.0000**	**.0075**	**.0004**
Stddev	.0084	.0001	.0007	.0002	.0037	.0008	.0004	.0045	.0002
%RSD	7.307	32.34	129.6	14.76	19.70	55.75	52.75	59.80	43.84
#1	.1252	.0002	.0010	.0011	.0229	.0024	-.0009	.0112	.0005
#2	.1120	.0004	-.0003	.0014	.0165	.0010	-.0010	.0025	.0004
#3	.1094	.0003	.0008	.0015	.0166	.0009	-.0003	.0088	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: MB 160-159979/1-A Acquired: 12/5/2014 16:04:04 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0088	<.0000	<.0000	<.0000	.0174	.0003	.0109
Stddev	.0000	.0004	.0007	.0008	.0076	.0010	.0000
%RSD	.4836	44.01	155.9	284.7	43.52	377.6	.3395
#1	.0088	-.0013	-.0013	-.0008	.0115	-.0004	.0109
#2	.0088	-.0006	.0001	-.0005	.0259	-.0002	.0108
#3	.0089	-.0007	-.0003	.0006	.0148	.0014	.0109
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4258.6
Stddev	9.2
%RSD	.21652
#1	4249.9
#2	4268.3
#3	4257.5

Sample Name: LCS 160-159979/2-A Acquired: 12/5/2014 16:08:00 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2049	9.567	.9883	1.909	.9801	.9828	1.039	11.10	.9909
Stddev	.0008	.041	.0035	.012	.0037	.0051	.005	.04	.0037
%RSD	.3972	.4267	.3519	.6418	.3753	.5230	.5027	.3561	.3765
#1	.2043	9.553	.9893	1.917	.9816	.9844	1.040	11.09	.9913
#2	.2045	9.535	.9844	1.895	.9760	.9771	1.033	11.06	.9870
#3	.2058	9.613	.9911	1.915	.9829	.9870	1.044	11.14	.9944
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.092	1.046	1.034	10.04	9.620	.9721	9.656	.9953	.5407
Stddev	.004	.006	.003	.04	.034	.0028	.049	.0037	.0018
%RSD	.3525	.6195	.3273	.3619	.3543	.2853	.5026	.3688	.3405
#1	1.092	1.045	1.034	10.05	9.616	.9709	9.693	.9935	.5406
#2	1.089	1.040	1.030	10.01	9.588	.9702	9.601	.9928	.5389
#3	1.096	1.053	1.036	10.08	9.656	.9753	9.675	.9995	.5426
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.699	1.067	1.051	1.079	10.05	.5123	.4949	4.994	1.095
Stddev	.029	.004	.001	.004	.04	.0039	.0034	.026	.003
%RSD	.3039	.3338	.0841	.4183	.3888	.7571	.6886	.5171	.2961
#1	9.708	1.066	1.051	1.077	10.06	.5156	.4947	4.998	1.092
#2	9.666	1.064	1.050	1.076	10.00	.5081	.4917	4.967	1.096
#3	9.723	1.071	1.052	1.084	10.07	.5134	.4985	5.018	1.098
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LCS 160-159979/2-A Acquired: 12/5/2014 16:08:00 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.010	1.017	1.012	.2188	1.069	.9744	1.020
Stddev	.004	.006	.004	.0014	.005	.0032	.004
%RSD	.4097	.6053	.3606	.6412	.4699	.3241	.3407
#1	1.012	1.024	1.012	.2199	1.070	.9710	1.021
#2	1.006	1.011	1.008	.2172	1.063	.9750	1.017
#3	1.014	1.017	1.016	.2191	1.073	.9772	1.024
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4336.1
Stddev	14.2
%RSD	.32781
#1	4330.2
#2	4352.3
#3	4325.8

Sample Name: 160-9438-F-1-B Acquired: 12/5/2014 16:11:26 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0378	<.0000	.0358	.0016	.0001	<.0000	55.62	<.0000
Stddev	.0002	.0060	.0014	.0024	.0002	.0001	.0024	.82	.0001
%RSD	158.6	15.97	145.3	6.783	12.63	98.42	396.8	1.471	2229.
#1	.0000	.0400	.0006	.0377	.0015	.0001	-.0024	56.23	-.0001
#2	-.0004	.0425	-.0020	.0331	.0018	.0000	.0022	55.95	.0000
#3	.0000	.0310	-.0014	.0366	.0014	.0001	-.0017	54.69	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0016	.0015	.0326	.0900	.0114	16.24	.0046	.0000
Stddev	.0003	.0004	.0003	.0024	.0067	.0004	.23	.0004	.0002
%RSD	156.3	25.93	23.37	7.387	7.423	3.762	1.416	7.592	335.6
#1	.0001	.0016	.0018	.0351	.0898	.0116	16.41	.0050	-.0001
#2	-.0004	.0020	.0011	.0324	.0834	.0109	16.34	.0043	.0002
#3	-.0002	.0012	.0015	.0303	.0968	.0117	15.98	.0046	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	28.06	.0004	.0016	.0005	74.25	.0015	<.0000	.7328	<.0000
Stddev	.26	.0002	.0014	.0014	1.02	.0007	.0012	.0099	.0002
%RSD	.9386	52.50	91.93	316.2	1.376	49.42	113.0	1.351	31.45
#1	28.19	.0002	.0032	.0018	75.02	.0014	-.0020	.7430	-.0007
#2	28.23	.0005	.0005	-.0010	74.63	.0023	-.0014	.7323	-.0004
#3	27.76	.0005	.0010	.0005	73.09	.0008	.0003	.7232	-.0005
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9438-F-1-B Acquired: 12/5/2014 16:11:26 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5889	.0033	.0017	<.0000	.0063	.0006	.0084
Stddev	.0058	.0020	.0003	.0005	.0125	.0034	.0002
%RSD	.9899	60.67	16.46	53.07	197.1	581.9	2.532
#1	.5924	.0046	.0020	-.0015	.0086	.0045	.0086
#2	.5921	.0043	.0014	-.0009	-.0071	-.0012	.0083
#3	.5822	.0010	.0017	-.0005	.0175	-.0015	.0082
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4175.7
Stddev	52.9
%RSD	1.2668
#1	4139.2
#2	4151.5
#3	4236.3

Sample Name: 160-9438-F-1-B SD Acquired: 12/5/2014 16:15:18 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=50

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0042	<.0000	.0081	.0004	.0000	<.0000	10.39	<.0000
Stddev	.0005	.0037	.0009	.0037	.0001	.0000	.0016	.04	.0002
%RSD	71.18	86.62	535.7	45.84	25.09	62.40	174.9	.3492	2405.
#1	-.0012	.0059	-.0010	.0104	.0003	.0001	-.0020	10.41	.0000
#2	-.0003	.0000	.0009	.0038	.0005	.0000	-.0017	10.35	-.0002
#3	-.0005	.0068	-.0004	.0102	.0005	.0000	.0009	10.42	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0005	.0020	.0061	.0693	.0024	2.981	.0008	<.0000
Stddev	.0002	.0007	.0005	.0012	.0130	.0006	.014	.0000	.0001
%RSD	174.5	158.9	23.53	19.23	18.75	25.28	.4556	4.207	357.7
#1	.0001	.0013	.0020	.0074	.0816	.0017	2.979	.0008	.0000
#2	-.0002	.0003	.0024	.0059	.0707	.0024	2.969	.0008	.0001
#3	-.0003	-.0002	.0015	.0051	.0557	.0029	2.996	.0009	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.127	.0003	<.0000	.0007	13.40	<.0000	<.0000	.1330	<.0000
Stddev	.036	.0001	.0008	.0007	.11	.0008	.0013	.0021	.0005
%RSD	.7118	40.26	1614.	99.45	.8451	455.2	748.9	1.583	398.2
#1	5.095	.0004	.0004	.0003	13.49	-.0007	-.0009	.1339	.0003
#2	5.118	.0002	-.0009	.0014	13.28	.0007	-.0010	.1306	-.0006
#3	5.167	.0003	.0004	.0003	13.45	-.0006	.0014	.1346	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9438-F-1-B SD Acquired: 12/5/2014 16:15:18 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=50

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1092	.0001	<.0000	<.0000	.0152	.0008	.0068
Stddev	.0008	.0030	.0003	.0012	.0111	.0021	.0000
%RSD	.7703	2560.	510.2	88.08	72.92	274.2	.5081
#1	.1085	.0012	-.0002	-.0003	.0247	.0027	.0068
#2	.1090	-.0033	-.0002	-.0027	.0178	.0012	.0069
#3	.1102	.0024	.0003	-.0011	.0030	-.0015	.0069
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4295.1
Stddev	20.0
%RSD	.46545
#1	4312.5
#2	4299.6
#3	4273.2

Sample Name: 160-9438-F-1-C MS Acquired: 12/5/2014 16:19:11 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0204**	**1.000**	**.0961**	**.2062**	**.0909**	**.0916**	**.1022**	**51.75**	**.0971**
Stddev	.0010	.003	.0006	.0040	.0006	.0006	.0013	.29	.0003
%RSD	5.137	.2860	.5758	1.920	.6292	.6407	1.236	.5642	.3463
#1	.0203	1.001	.0968	.2016	.0909	.0913	.1032	51.58	.0972
#2	.0194	.9975	.0958	.2084	.0904	.0913	.1024	51.57	.0967
#3	.0215	1.003	.0958	.2085	.0915	.0923	.1008	52.08	.0973
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1038**	**.1013**	**.1016**	**1.008**	**1.006**	**.1011**	**15.64**	**.0982**	**.0518**
Stddev	.0006	.0010	.0013	.007	.024	.0014	.10	.0007	.0003
%RSD	.5581	.9442	1.315	.6710	2.405	1.374	.6452	.7186	.6027
#1	.1037	.1002	.1004	1.003	.9830	.0995	15.60	.0975	.0521
#2	.1034	.1018	.1014	1.005	1.003	.1019	15.56	.0985	.0515
#3	.1045	.1019	.1031	1.015	1.031	.1019	15.75	.0988	.0519
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**26.25**	**.1021**	**.1063**	**.1044**	**70.18**	**.0504**	**.0489**	**1.288**	**.1050**
Stddev	.16	.0003	.0008	.0007	.36	.0019	.0010	.006	.0005
%RSD	.6071	.3326	.7163	.6239	.5078	3.809	2.039	.4957	.5050
#1	26.17	.1020	.1055	.1036	70.41	.0499	.0498	1.281	.1050
#2	26.16	.1018	.1070	.1047	69.77	.0488	.0491	1.291	.1045
#3	26.44	.1025	.1065	.1048	70.35	.0525	.0478	1.292	.1055
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9438-F-1-C MS Acquired: 12/5/2014 16:19:11 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6228	.0961	.0961	.0213	.1092	.0951	.1034
Stddev	.0041	.0008	.0005	.0011	.0106	.0016	.0005
%RSD	.6614	.8648	.5101	5.015	9.691	1.674	.4773
#1	.6210	.0962	.0959	.0201	.1208	.0962	.1037
#2	.6198	.0952	.0958	.0222	.1066	.0933	.1029
#3	.6275	.0968	.0967	.0216	.1001	.0959	.1037
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4163.7
Stddev	7.7
%RSD	.18387
#1	4168.1
#2	4168.1
#3	4154.9

Sample Name: CCV Acquired: 12/5/2014 16:22:56 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.9518**	**46.85**	**4.883**	**4.753**	**4.698**	**4.758**	**4.831**	**50.50**	**4.882**
Stddev	.0045	.37	.047	.035	.049	.059	.055	.53	.054
%RSD	.4690	.7885	.9703	.7465	1.040	1.245	1.141	1.043	1.097
#1	.9485	46.80	4.833	4.720	4.657	4.704	4.770	49.90	4.822
#2	.9500	47.24	4.891	4.790	4.752	4.749	4.844	50.80	4.900
#3	.9568	46.51	4.926	4.748	4.686	4.821	4.878	50.81	4.925
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.976**	**4.965**	**4.850**	**48.57**	**48.02**	**4.703**	**48.91**	**4.865**	**.9845**
Stddev	.052	.022	.059	.24	.41	.044	.31	.028	.0101
%RSD	1.039	.4402	1.213	.4857	.8510	.9398	.6287	.5756	1.026
#1	4.917	4.954	4.785	48.40	47.89	4.699	48.59	4.850	.9733
#2	4.995	4.951	4.865	48.84	48.48	4.749	49.20	4.897	.9875
#3	5.015	4.990	4.899	48.46	47.69	4.661	48.94	4.847	.9928
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**47.37**	**5.010**	**50.29**	**5.034**	**48.16**	**.9641**	**.9713**	**4.727**	**5.015**
Stddev	.43	.050	.49	.044	.52	.0132	.0114	.035	.047
%RSD	.9122	1.005	.9778	.8807	1.087	1.366	1.170	.7307	.9279
#1	47.19	4.953	49.74	4.984	47.58	.9497	.9589	4.709	4.963
#2	47.86	5.029	50.46	5.049	48.28	.9669	.9737	4.767	5.031
#3	47.05	5.047	50.68	5.068	48.61	.9756	.9813	4.705	5.052
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: CCV Acquired: 12/5/2014 16:22:56 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.798**	**4.841**	**4.780**	**1.010**	**4.841**	**4.833**	**4.926**
Stddev	.046	.013	.027	.010	.009	.030	.052
%RSD	.9504	.2763	.5723	.9781	.1751	.6273	1.058
#1	4.774	4.829	4.763	.9989	4.836	4.816	4.867
#2	4.851	4.838	4.812	1.012	4.836	4.868	4.942
#3	4.770	4.856	4.766	1.018	4.851	4.814	4.968
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**4324.6**
Stddev	41.7
%RSD	.96397
#1	4372.6
#2	4303.6
#3	4297.5

Sample Name: CCB Acquired: 12/5/2014 16:26:45 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0003**	**.0063**	**.0006**	**.0126**	**.0006**	**.0005**	**<.0000**	**.0033**	**.0002**
Stddev	.0006	.0049	.0007	.0035	.0003	.0001	.0021	.0004	.0001
%RSD	179.6	77.80	110.5	27.71	48.14	21.37	184.0	12.17	37.59
#1	.0009	.0102	.0012	.0163	.0007	.0006	.0010	.0032	.0002
#2	-.0003	.0008	.0008	.0121	.0003	.0004	-.0032	.0038	.0001
#3	.0004	.0080	-.0001	.0093	.0007	.0004	-.0013	.0030	.0003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**<.0000**	**.0007**	**.0013**	**.0050**	**.0657**	**.0006**	**.0100**	**.0003**	**.0000**
Stddev	.0002	.0003	.0014	.0020	.0493	.0003	.0039	.0002	.0001
%RSD	126.6	49.93	114.6	40.06	75.05	42.24	39.59	75.99	573.8
#1	.0000	.0004	.0023	.0073	.0759	.0008	.0077	.0005	-.0001
#2	-.0003	.0011	-.0004	.0039	.0121	.0008	.0077	.0004	.0000
#3	-.0001	.0006	.0019	.0037	.1091	.0003	.0145	.0000	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0088**	**.0004**	**.0017**	**.0017**	**.0090**	**<.0000**	**.0012**	**.0035**	**.0002**
Stddev	.0101	.0001	.0006	.0008	.0012	.0014	.0012	.0032	.0005
%RSD	114.3	14.86	32.85	47.73	13.47	244.9	101.3	90.58	264.2
#1	.0075	.0005	.0013	.0014	.0092	-.0012	.0024	.0007	.0006
#2	-.0006	.0004	.0024	.0027	.0077	.0010	.0010	.0069	-.0004
#3	.0195	.0004	.0015	.0011	.0101	-.0016	.0001	.0029	.0004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Sample Name: CCB Acquired: 12/5/2014 16:26:45 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005	<.0000	<.0000	<.0000	<.0000	.0014	.0002
Stddev	.0001	.0026	.0005	.0009	.0013	.0043	.0000
%RSD	25.32	563.4	95.86	93.20	308.7	303.0	32.61
#1	.0006	-.0030	.0000	-.0003	.0010	.0008	.0002
#2	.0004	.0021	-.0011	-.0006	-.0015	.0060	.0001
#3	.0004	-.0005	-.0006	-.0020	-.0007	-.0025	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_3710
Units	Cts/S
Avg	4398.3
Stddev	75.2
%RSD	1.7100
#1	4485.1
#2	4351.9
#3	4357.9

Sample Name: 160-9438-F-1-D MSD Acquired: 12/5/2014 16:30:42 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0197	1.033	.0939	.2086	.0890	.0893	.1018	50.72	.0961
Stddev	.0002	.020	.0023	.0020	.0007	.0007	.0018	.74	.0014
%RSD	.9764	1.898	2.460	.9695	.8111	.8022	1.792	1.468	1.427
#1	.0199	1.021	.0956	.2109	.0890	.0898	.1036	51.40	.0971
#2	.0198	1.055	.0949	.2078	.0897	.0897	.1020	50.85	.0967
#3	.0195	1.021	.0913	.2071	.0882	.0885	.0999	49.93	.0946
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1011	.0969	.0963	.9965	1.037	.0997	15.37	.0950	.0509
Stddev	.0018	.0018	.0011	.0100	.031	.0013	.13	.0005	.0009
%RSD	1.761	1.898	1.094	1.002	2.953	1.340	.8503	.5361	1.765
#1	.1023	.0968	.0973	.9979	1.069	.0988	15.49	.0949	.0513
#2	.1019	.0987	.0963	1.006	1.035	.1012	15.37	.0956	.0516
#3	.0991	.0951	.0952	.9858	1.008	.0991	15.23	.0946	.0499
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	26.26	.0993	.1038	.1036	70.47	.0494	.0479	1.387	.1030
Stddev	.22	.0014	.0012	.0009	1.14	.0015	.0011	.014	.0016
%RSD	.8476	1.423	1.152	.8401	1.617	2.990	2.380	1.026	1.591
#1	26.33	.1007	.1051	.1045	71.34	.0477	.0465	1.382	.1047
#2	26.44	.0994	.1034	.1028	70.89	.0500	.0486	1.404	.1028
#3	26.01	.0979	.1028	.1033	69.18	.0504	.0485	1.377	.1014
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9438-F-1-D MSD Acquired: 12/5/2014 16:30:42 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6142	.0950	.0951	.0205	.0925	.0906	.1019
Stddev	.0047	.0034	.0019	.0005	.0048	.0032	.0016
%RSD	.7720	3.535	1.954	2.658	5.230	3.510	1.558
#1	.6150	.0916	.0952	.0208	.0871	.0870	.1031
#2	.6185	.0983	.0969	.0208	.0942	.0921	.1025
#3	.6091	.0951	.0932	.0199	.0963	.0928	.1001
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4238.2
Stddev	45.8
%RSD	1.0813
#1	4189.7
#2	4244.1
#3	4280.8

Sample Name: 160-9438-F-2-B Acquired: 12/5/2014 16:34:25 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.1032	<.0000	.0254	.0015	<.0000	.0003	44.27	.0001
Stddev	.0001	.0092	.0015	.0019	.0004	.0000	.0035	2.81	.0002
%RSD	47.39	8.931	287.9	7.419	24.14	10.94	1088.	6.348	151.2
#1	-.0002	.1078	.0006	.0276	.0015	.0000	.0042	41.50	.0002
#2	-.0004	.1092	.0000	.0247	.0012	.0000	-.0026	44.18	.0002
#3	-.0001	.0926	-.0022	.0240	.0019	.0000	-.0007	47.12	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0015	.0009	.0723	.5972	.0119	18.53	.0128	.0002
Stddev	.0003	.0007	.0006	.0015	.0107	.0004	.14	.0001	.0002
%RSD	875.2	48.72	67.48	2.103	1.788	3.189	.7511	.8540	112.8
#1	.0004	.0022	.0013	.0716	.5956	.0123	18.42	.0127	.0000
#2	-.0002	.0007	.0011	.0740	.6086	.0115	18.49	.0129	.0004
#3	-.0001	.0016	.0002	.0712	.5874	.0118	18.69	.0129	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	28.24	.0004	.0006	.0011	80.82	.0001	.0000	.5293	<.0000
Stddev	.22	.0001	.0004	.0009	5.55	.0009	.0027	.0057	.0002
%RSD	.7807	25.74	75.29	81.10	6.865	650.2	30370.	1.076	36.17
#1	28.06	.0003	.0002	.0019	75.24	.0011	-.0006	.5295	-.0004
#2	28.18	.0005	.0010	.0001	80.87	-.0008	.0030	.5349	-.0008
#3	28.49	.0005	.0005	.0013	86.34	.0001	-.0024	.5235	-.0005
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9438-F-2-B Acquired: 12/5/2014 16:34:25 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6383	.0014	.0020	<.0000	.0093	.0017	.0041
Stddev	.0047	.0007	.0005	.0009	.0080	.0020	.0001
%RSD	.7296	51.23	25.20	67.96	86.12	123.4	2.978
#1	.6344	.0013	.0022	-.0010	.0054	.0002	.0040
#2	.6370	.0008	.0023	-.0022	.0185	.0007	.0040
#3	.6435	.0022	.0014	-.0005	.0040	.0040	.0042
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4350.7
Stddev	17.4
%RSD	.39884
#1	4347.5
#2	4335.1
#3	4369.4

Sample Name: LB 160-157827/1-B Acquired: 12/5/2014 16:38:17 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0101	<.0000	.0014	.0002	.0000	<.0000	.0532	.0000
Stddev	.0006	.0026	.0008	.0033	.0002	.0000	.0034	.0009	.0002
%RSD	255.6	25.56	179.8	235.4	104.6	232.6	161.5	1.749	675.5
#1	-.0002	.0128	-.0008	.0011	.0000	.0000	.0003	.0537	.0002
#2	-.0009	.0077	.0005	-.0018	.0003	.0000	-.0059	.0537	-.0001
#3	.0003	.0097	-.0009	.0048	.0002	.0000	-.0006	.0521	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	.0012	.0062	.0315	.0008	.0087	.0000	.0002
Stddev	.0001	.0005	.0010	.0010	.0385	.0006	.0105	.0002	.0000
%RSD	100.0	154.3	82.58	16.23	122.5	79.38	120.8	1416.	18.73
#1	-.0001	-.0009	.0015	.0054	.0754	.0013	.0109	.0001	.0001
#2	.0000	-.0001	.0001	.0058	.0034	.0009	-.0027	-.0002	.0002
#3	-.0001	.0000	.0021	.0073	.0156	.0001	.0179	.0001	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0151	.0003	.0010	.0006	.0166	<.0000	.0010	.0187	.0004
Stddev	.0129	.0001	.0017	.0007	.0023	.0002	.0019	.0011	.0003
%RSD	85.40	24.64	164.7	114.0	13.99	50.07	194.4	5.669	63.29
#1	.0153	.0004	.0011	.0000	.0190	-.0003	.0017	.0198	.0006
#2	.0278	.0004	.0026	.0013	.0163	-.0006	.0024	.0185	.0001
#3	.0021	.0002	-.0007	.0004	.0144	-.0002	-.0012	.0177	.0004
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LB 160-157827/1-B Acquired: 12/5/2014 16:38:17 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	.0003	<.0000	<.0000	.0131	.0002	.0081
Stddev	.0000	.0005	.0003	.0005	.0059	.0022	.0002
%RSD	19.85	156.0	51.97	870.9	45.29	1069.	2.097
#1	.0002	.0005	-.0006	.0005	.0179	.0006	.0082
#2	.0002	.0008	-.0010	-.0003	.0150	-.0022	.0082
#3	.0002	-.0002	-.0003	-.0004	.0065	.0022	.0079
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4361.1
Stddev	71.0
%RSD	1.6276
#1	4298.2
#2	4347.0
#3	4438.1

Sample Name: LCS 160-160503/2-A Acquired: 12/5/2014 16:42:13 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1965**	**9.145**	**.9551**	**1.828**	**.9303**	**.9336**	**.9932**	**10.65**	**.9608**
Stddev	.0014	.096	.0048	.014	.0071	.0064	.0052	.04	.0027
%RSD	.7004	1.053	.5032	.7704	.7646	.6864	.5202	.3508	.2761
#1	.1970	9.094	.9497	1.818	.9303	.9337	.9873	10.62	.9592
#2	.1949	9.085	.9570	1.821	.9232	.9272	.9957	10.63	.9593
#3	.1975	9.256	.9587	1.844	.9374	.9400	.9967	10.69	.9638
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.051**	**1.004**	**.9929**	**9.588**	**9.218**	**.9316**	**9.231**	**.9509**	**.5072**
Stddev	.002	.006	.0042	.068	.082	.0090	.097	.0100	.0019
%RSD	.1959	.5739	.4245	.7050	.8878	.9673	1.052	1.054	.3655
#1	1.050	1.005	.9916	9.559	9.226	.9288	9.182	.9441	.5060
#2	1.049	.9978	.9894	9.540	9.132	.9242	9.168	.9461	.5062
#3	1.053	1.009	.9976	9.665	9.295	.9416	9.343	.9624	.5093
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.192**	**1.025**	**1.019**	**1.043**	**9.580**	**.4854**	**.4819**	**4.578**	**1.029**
Stddev	.069	.003	.004	.003	.018	.0001	.0007	.042	.004
%RSD	.7523	.3327	.3892	.3073	.1899	.0228	.1485	.9060	.3960
#1	9.208	1.022	1.017	1.042	9.561	.4854	.4820	4.559	1.028
#2	9.116	1.024	1.016	1.040	9.582	.4853	.4811	4.549	1.025
#3	9.251	1.029	1.023	1.046	9.597	.4855	.4825	4.625	1.033
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LCS 160-160503/2-A Acquired: 12/5/2014 16:42:13 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9538	.9833	.9400	.2124	1.039	.9347	.9825
Stddev	.0064	.0080	.0076	.0004	.004	.0078	.0019
%RSD	.6728	.8142	.8118	.1871	.4042	.8370	.1984
#1	.9540	.9819	.9355	.2120	1.044	.9284	.9810
#2	.9473	.9761	.9357	.2122	1.038	.9323	.9817
#3	.9601	.9919	.9488	.2128	1.035	.9435	.9847
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4455.0
Stddev	22.5
%RSD	.50408
#1	4466.5
#2	4469.4
#3	4429.1

Sample Name: 160-9451-B-1-B Acquired: 12/5/2014 16:45:38 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.5067	<.0000	.0083	.0316	.0001	<.0000	5.788	.0002
Stddev	.0007	.0152	.0006	.0046	.0009	.0000	.0009	.083	.0001
%RSD	377.4	2.994	48.10	55.40	2.995	28.45	177.9	1.440	43.75
#1	-.0004	.4926	-.0006	.0100	.0307	.0001	.0002	5.700	.0003
#2	-.0008	.5048	-.0014	.0118	.0314	.0001	-.0015	5.798	.0001
#3	.0006	.5227	-.0019	.0031	.0326	.0001	-.0002	5.866	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	.0014	.0029	.4540	.4866	.0015	.7991	.0174	<.0000
Stddev	.0002	.0012	.0008	.0108	.0154	.0008	.0269	.0005	.0002
%RSD	72.57	81.19	27.50	2.386	3.165	54.36	3.371	2.949	314.7
#1	.0005	.0024	.0034	.4426	.4700	.0019	.7698	.0170	-.0001
#2	.0002	.0018	.0034	.4553	.5005	.0006	.8050	.0172	-.0002
#3	.0001	.0001	.0020	.4642	.4894	.0020	.8227	.0180	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.102	.0013	.0112	.0017	.4099	.0009	<.0000	2.891	.0001
Stddev	.041	.0002	.0012	.0003	.0043	.0016	.0012	.082	.0006
%RSD	1.967	17.60	11.02	16.25	1.047	181.7	131.1	2.834	438.7
#1	2.058	.0015	.0123	.0019	.4050	-.0002	-.0022	2.813	.0007
#2	2.108	.0013	.0114	.0019	.4117	.0001	.0002	2.884	.0002
#3	2.141	.0010	.0099	.0014	.4130	.0028	-.0008	2.976	-.0005
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9451-B-1-B Acquired: 12/5/2014 16:45:38 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0382	.0012	.0059	.0005	.0065	.0013	.0068
Stddev	.0010	.0036	.0004	.0015	.0143	.0010	.0001
%RSD	2.557	300.2	5.974	307.8	217.9	72.77	1.132
#1	.0372	.0005	.0055	.0018	.0001	.0010	.0068
#2	.0384	-.0020	.0061	-.0011	.0229	.0025	.0068
#3	.0391	.0051	.0062	.0008	-.0034	.0006	.0067
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4390.6
Stddev	76.7
%RSD	1.7477
#1	4474.1
#2	4374.6
#3	4323.1

Sample Name: 160-9451-B-1-B SD Acquired: 12/5/2014 16:49:33 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=50

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0003**	**.1001**	**.0007**	**.0028**	**.0063**	**<.0000**	**<.0000**	**1.126**	**<.0000**
Stddev	.0008	.0145	.0005	.0002	.0000	.0001	.0010	.007	.0001
%RSD	238.8	14.46	74.27	5.863	.6331	600.6	29.02	.6229	130.0
#1	.0001	.0929	.0013	.0030	.0063	.0000	-.0046	1.124	.0000
#2	-.0003	.0907	.0004	.0026	.0063	.0000	-.0028	1.120	-.0002
#3	.0012	.1168	.0004	.0027	.0063	-.0001	-.0029	1.134	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000**	**.0004**	**<.0000**	**.0866**	**.1429**	**.0004**	**.1538**	**.0034**	**.0001**
Stddev	.0002	.0007	.0005	.0034	.0365	.0006	.0047	.0002	.0003
%RSD	5103.	186.8	1943.	3.961	25.56	153.5	3.043	6.312	524.9
#1	.0000	-.0004	.0000	.0882	.1007	.0006	.1562	.0034	.0001
#2	-.0002	.0006	.0005	.0826	.1644	-.0003	.1485	.0031	.0003
#3	.0002	.0010	-.0006	.0889	.1635	.0008	.1569	.0035	-.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.4065**	**.0003**	**.0034**	**.0020**	**.0831**	**<.0000**	**<.0000**	**.5607**	**.0002**
Stddev	.0147	.0001	.0007	.0004	.0027	.0014	.0018	.0060	.0005
%RSD	3.627	52.88	20.01	22.49	3.238	272.6	139.3	1.078	298.8
#1	.3956	.0002	.0026	.0024	.0837	.0008	-.0023	.5539	.0005
#2	.4233	.0004	.0037	.0015	.0801	-.0019	-.0024	.5629	-.0004
#3	.4007	.0002	.0038	.0021	.0854	-.0004	.0008	.5654	.0004
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9451-B-1-B SD Acquired: 12/5/2014 16:49:33 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=50

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0074	.0010	.0009	<.0000	.0045	.0024	.0067
Stddev	.0001	.0036	.0007	.0009	.0097	.0016	.0002
%RSD	1.107	356.2	72.09	83.67	214.0	68.00	2.423
#1	.0073	.0050	.0006	-.0014	-.0011	.0017	.0069
#2	.0074	.0000	.0017	-.0001	.0158	.0042	.0066
#3	.0074	-.0020	.0004	-.0017	-.0010	.0012	.0067
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4250.9
Stddev	40.5
%RSD	.95349
#1	4283.2
#2	4264.1
#3	4205.4

Sample Name: 160-9451-B-1-C MS Acquired: 12/5/2014 16:53:28 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0204**	**1.764**	**.0985**	**.1861**	**.1264**	**.0936**	**.1057**	**7.630**	**.1011**
Stddev	.0008	.029	.0010	.0042	.0021	.0014	.0042	.166	.0021
%RSD	4.102	1.641	1.043	2.241	1.664	1.528	3.950	2.175	2.114
#1	.0213	1.770	.0984	.1878	.1265	.0936	.1049	7.502	.0995
#2	.0196	1.733	.0975	.1813	.1243	.0921	.1019	7.570	.1003
#3	.0203	1.790	.0995	.1891	.1285	.0950	.1102	7.817	.1035
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1115**	**.1039**	**.1077**	**1.457**	**1.450**	**.0941**	**1.817**	**.1149**	**.0528**
Stddev	.0024	.0027	.0020	.026	.023	.0022	.024	.0023	.0009
%RSD	2.121	2.589	1.840	1.808	1.574	2.302	1.340	2.024	1.760
#1	.1095	.1033	.1056	1.456	1.462	.0948	1.805	.1148	.0519
#2	.1108	.1015	.1080	1.432	1.424	.0916	1.800	.1125	.0526
#3	.1141	.1068	.1095	1.484	1.464	.0958	1.845	.1172	.0538
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.160**	**.1106**	**.1182**	**.1130**	**1.465**	**.0519**	**.0496**	**4.010**	**.1087**
Stddev	.055	.0021	.0024	.0025	.035	.0014	.0016	.063	.0024
%RSD	1.743	1.873	2.057	2.215	2.370	2.738	3.301	1.571	2.232
#1	3.171	.1094	.1175	.1117	1.434	.0506	.0477	4.035	.1070
#2	3.100	.1094	.1162	.1115	1.457	.0516	.0501	3.938	.1076
#3	3.208	.1130	.1209	.1159	1.502	.0534	.0509	4.056	.1115
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9451-B-1-C MS Acquired: 12/5/2014 16:53:28 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1351	.0991	.0986	.0224	.1059	.0959	.1097
Stddev	.0018	.0024	.0019	.0007	.0123	.0028	.0023
%RSD	1.354	2.379	1.965	3.065	11.67	2.964	2.125
#1	.1353	.0964	.0992	.0230	.0922	.0977	.1077
#2	.1332	.1004	.0965	.0217	.1163	.0926	.1090
#3	.1368	.1006	.1002	.0224	.1090	.0974	.1123
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4342.7
Stddev	60.9
%RSD	1.4023
#1	4367.8
#2	4387.1
#3	4273.3

Sample Name: 160-9451-B-1-D MSD Acquired: 12/5/2014 16:57:11 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0195**	**1.696**	**.0954**	**.1843**	**.1231**	**.0918**	**.1011**	**7.019**	**.0973**
Stddev	.0002	.017	.0018	.0045	.0015	.0014	.0016	.097	.0011
%RSD	.8463	.9902	1.882	2.456	1.203	1.497	1.591	1.388	1.107
#1	.0197	1.685	.0947	.1895	.1232	.0923	.0998	7.044	.0972
#2	.0193	1.716	.0974	.1827	.1245	.0929	.1029	7.101	.0984
#3	.0195	1.689	.0940	.1808	.1215	.0902	.1006	6.911	.0962
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1063**	**.1012**	**.1016**	**1.399**	**1.419**	**.0932**	**1.728**	**.1119**	**.0502**
Stddev	.0013	.0022	.0020	.020	.043	.0022	.034	.0020	.0007
%RSD	1.244	2.217	1.922	1.452	3.061	2.319	1.948	1.767	1.401
#1	.1066	.1013	.1034	1.409	1.438	.0918	1.743	.1121	.0506
#2	.1075	.1033	.1017	1.412	1.450	.0957	1.752	.1137	.0507
#3	.1049	.0988	.0995	1.376	1.369	.0921	1.689	.1098	.0494
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.040**	**.1052**	**.1135**	**.1087**	**1.387**	**.0481**	**.0501**	**3.780**	**.1038**
Stddev	.038	.0011	.0016	.0017	.014	.0021	.0010	.065	.0009
%RSD	1.256	1.086	1.397	1.581	.9923	4.422	1.942	1.720	.8380
#1	3.045	.1055	.1127	.1090	1.382	.0505	.0510	3.796	.1041
#2	3.075	.1062	.1154	.1104	1.403	.0466	.0503	3.835	.1045
#3	2.999	.1040	.1125	.1069	1.377	.0471	.0491	3.708	.1028
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9451-B-1-D MSD Acquired: 12/5/2014 16:57:11 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1316	.1001	.0970	.0219	.1129	.0953	.1043
Stddev	.0019	.0031	.0017	.0009	.0264	.0026	.0010
%RSD	1.455	3.112	1.755	3.958	23.38	2.740	1.005
#1	.1321	.1008	.0967	.0217	.1031	.0982	.1045
#2	.1332	.1028	.0988	.0229	.1428	.0947	.1053
#3	.1295	.0967	.0954	.0212	.0928	.0931	.1032
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4301.6
Stddev	83.4
%RSD	1.9392
#1	4265.7
#2	4242.1
#3	4396.9

Sample Name: 160-9451-B-2-B Acquired: 12/5/2014 17:00:53 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0373	<.0000	.0009	.0172	.0000	<.0000	5.850	.0000
Stddev	.0004	.0056	.0008	.0041	.0002	.0000	.0013	.182	.0001
%RSD	56.41	15.04	234.0	450.9	.9394	247.0	82.68	3.116	344.7
#1	-.0003	.0401	-.0012	.0047	.0170	.0000	-.0003	5.675	-.0001
#2	-.0010	.0308	.0000	.0015	.0172	.0000	-.0028	5.837	.0001
#3	-.0007	.0409	.0002	-.0035	.0173	.0000	-.0015	6.039	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0006	.0006	.0399	.2909	.0007	.6857	.0045	.0001
Stddev	.0002	.0006	.0011	.0006	.0184	.0008	.0177	.0002	.0002
%RSD	135.6	90.58	169.7	1.579	6.312	121.0	2.577	3.905	190.0
#1	-.0001	.0010	.0017	.0392	.2706	.0009	.6711	.0046	.0003
#2	-.0003	.0009	-.0005	.0400	.2957	-.0002	.6806	.0046	.0001
#3	.0000	.0000	.0007	.0404	.3064	.0014	.7054	.0043	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.208	.0006	.0065	.0017	.6351	<.0000	.0005	1.662	.0002
Stddev	.016	.0002	.0010	.0011	.0219	.0009	.0020	.010	.0001
%RSD	.7054	29.87	15.27	65.99	3.448	201.4	368.1	.6127	65.84
#1	2.206	.0004	.0063	.0004	.6145	.0006	.0028	1.651	.0003
#2	2.194	.0006	.0055	.0022	.6326	-.0011	-.0004	1.663	.0003
#3	2.225	.0007	.0075	.0024	.6581	-.0010	-.0008	1.671	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9451-B-2-B Acquired: 12/5/2014 17:00:53 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0362	<.0000	.0012	<.0000	<.0000	<.0000	.0031
Stddev	.0002	.0011	.0006	.0011	.0123	.0016	.0001
%RSD	.6053	979.1	45.74	91.28	127.6	248.1	1.838
#1	.0361	.0003	.0012	-.0022	-.0203	.0006	.0030
#2	.0360	-.0013	.0018	-.0012	-.0123	-.0025	.0031
#3	.0364	.0007	.0007	-.0001	.0038	-.0001	.0031
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4407.4
Stddev	31.8
%RSD	.72199
#1	4444.0
#2	4386.1
#3	4392.1

Sample Name: 160-9451-B-3-B Acquired: 12/5/2014 17:04:48 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0703	.0000	.0122	.0083	.0001	.0001	5.589	<.0000
Stddev	.0004	.0032	.0005	.0017	.0000	.0000	.0013	.169	.0001
%RSD	213.3	4.548	2186.	13.83	.4650	54.65	1088.	3.024	979.5
#1	-.0002	.0668	.0000	.0117	.0083	.0000	.0000	5.441	.0001
#2	.0002	.0713	-.0004	.0108	.0084	.0001	-.0011	5.553	-.0002
#3	-.0007	.0730	.0005	.0141	.0083	.0000	.0015	5.773	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0000	.0018	.0653	.1738	.0021	1.113	.0099	.0004
Stddev	.0002	.0011	.0019	.0019	.0262	.0006	.013	.0002	.0001
%RSD	180.7	202000.	102.8	2.921	15.07	27.74	1.181	2.244	23.09
#1	.0001	.0001	.0036	.0640	.1675	.0016	1.105	.0100	.0004
#2	-.0002	.0010	.0021	.0645	.2025	.0021	1.106	.0101	.0003
#3	-.0002	-.0012	-.0002	.0675	.1513	.0027	1.128	.0097	.0005
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.14	.0007	.0076	.0015	2.479	<.0000	<.0000	1.431	.0004
Stddev	.06	.0002	.0005	.0007	.076	.0011	.0012	.004	.0001
%RSD	.5587	24.66	6.650	49.97	3.072	206.2	131.7	.2737	13.29
#1	11.07	.0005	.0082	.0008	2.421	.0007	-.0011	1.427	.0004
#2	11.15	.0007	.0074	.0023	2.451	-.0009	.0004	1.435	.0005
#3	11.19	.0009	.0073	.0013	2.566	-.0013	-.0020	1.431	.0005
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9451-B-3-B Acquired: 12/5/2014 17:04:48 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0616	<.0000	.0013	.0000	.0012	.0007	.0034
Stddev	.0004	.0005	.0001	.0004	.0149	.0005	.0001
%RSD	.6271	327.0	8.385	912.2	1287.	75.92	1.689
#1	.0612	-.0008	.0014	.0002	.0082	.0013	.0034
#2	.0618	.0003	.0014	.0004	.0111	.0005	.0034
#3	.0619	.0000	.0012	-.0005	-.0159	.0003	.0035
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4235.2
Stddev	1.9
%RSD	.04457
#1	4235.9
#2	4236.6
#3	4233.0

Sample Name: CCV Acquired: 12/5/2014 17:08:42 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.9916**	**49.13**	**5.155**	**4.963**	**4.939**	**5.041**	**5.099**	**52.88**	**5.133**
Stddev	.0138	.75	.154	.075	.073	.033	.153	1.52	.150
%RSD	1.390	1.523	2.977	1.517	1.470	.6579	2.990	2.869	2.927
#1	.9864	49.10	5.080	4.947	4.881	5.034	5.027	52.20	5.068
#2	.9813	48.40	5.054	4.897	4.915	5.012	4.997	51.82	5.025
#3	1.007	49.89	5.332	5.045	5.020	5.077	5.275	54.62	5.304
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.227**	**5.174**	**5.106**	**50.97**	**50.37**	**4.949**	**50.68**	**5.058**	**1.036**
Stddev	.147	.082	.148	.93	.73	.065	1.14	.089	.029
%RSD	2.822	1.580	2.904	1.832	1.456	1.304	2.243	1.762	2.753
#1	5.158	5.156	5.041	50.79	50.34	4.958	50.25	5.035	1.025
#2	5.127	5.102	5.002	50.14	49.64	4.880	49.83	4.984	1.015
#3	5.397	5.263	5.276	51.98	51.11	5.008	51.98	5.157	1.068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**49.60**	**5.260**	**52.96**	**5.279**	**51.03**	**1.017**	**1.027**	**4.941**	**5.267**
Stddev	.76	.147	1.56	.145	1.58	.030	.030	.094	.147
%RSD	1.536	2.802	2.939	2.749	3.095	2.992	2.936	1.898	2.786
#1	49.65	5.195	52.21	5.220	50.34	1.004	1.013	4.934	5.198
#2	48.81	5.156	51.93	5.173	49.91	.9954	1.006	4.851	5.168
#3	50.33	5.429	54.75	5.445	52.84	1.052	1.062	5.039	5.436
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: CCV Acquired: 12/5/2014 17:08:42 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.040**	**5.048**	**5.009**	**1.059**	**5.034**	**5.019**	**5.177**
Stddev	.145	.089	.089	.029	.070	.084	.146
%RSD	2.886	1.762	1.785	2.742	1.389	1.679	2.825
#1	5.115	5.020	4.999	1.046	5.012	4.985	5.112
#2	4.873	4.977	4.925	1.039	4.977	4.956	5.075
#3	5.133	5.148	5.103	1.092	5.112	5.115	5.344
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**4221.1**
Stddev	82.6
%RSD	1.9578
#1	4243.8
#2	4290.1
#3	4129.5

Sample Name: CCB Acquired: 12/5/2014 17:12:31 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0003**	**.0027**	**.0004**	**.0114**	**.0005**	**.0005**	**.0012**	**.0022**	**.0002**
Stddev	.0002	.0080	.0011	.0021	.0001	.0001	.0016	.0003	.0002
%RSD	60.57	301.6	288.4	18.33	24.05	17.02	135.9	15.81	110.6
#1	.0003	-.0051	-.0006	.0138	.0007	.0006	.0015	.0026	.0004
#2	.0001	.0021	.0015	.0100	.0006	.0005	-.0005	.0019	.0001
#3	.0005	.0109	.0002	.0104	.0004	.0004	.0027	.0020	.0000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000**	**.0011**	**<.0000**	**.0026**	**.0523**	**<.0000**	**.0107**	**.0004**	**<.0000**
Stddev	.0000	.0006	.0004	.0019	.0159	.0007	.0033	.0001	.0001
%RSD	120.9	53.75	67.55	73.07	30.46	1338.	30.78	31.99	110.6
#1	.0000	.0011	-.0002	.0047	.0559	-.0008	.0108	.0005	-.0001
#2	.0001	.0016	-.0011	.0015	.0661	.0001	.0140	.0004	-.0002
#3	.0000	.0005	-.0007	.0015	.0349	.0006	.0074	.0003	.0000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0050**	**.0003**	**.0027**	**.0007**	**.0049**	**.0013**	**.0006**	**.0003**	**.0003**
Stddev	.0041	.0003	.0009	.0009	.0029	.0004	.0006	.0018	.0004
%RSD	80.46	119.6	32.42	141.2	59.93	32.73	102.0	667.9	133.8
#1	.0005	.0006	.0029	.0009	.0055	.0009	.0010	.0023	-.0001
#2	.0084	.0000	.0034	-.0004	.0017	.0013	-.0001	-.0002	.0005
#3	.0062	.0002	.0017	.0015	.0075	.0018	.0008	-.0013	.0004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Sample Name: CCB Acquired: 12/5/2014 17:12:31 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	.0001	.0000	<.0000	.0040	.0022	.0002
Stddev	.0001	.0015	.0006	.0009	.0171	.0005	.0000
%RSD	26.07	1174.	1971.	68.63	432.3	22.85	20.15
#1	.0006	-.0015	-.0004	-.0003	-.0048	.0027	.0002
#2	.0004	.0005	-.0002	-.0020	-.0070	.0019	.0002
#3	.0004	.0013	.0007	-.0019	.0237	.0018	.0003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_3710
Units	Cts/S
Avg	4189.6
Stddev	46.6
%RSD	1.1126
#1	4137.4
#2	4204.4
#3	4227.0

Sample Name: 160-9451-B-4-B Acquired: 12/5/2014 17:16:28 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0049	<.0000	.0061	.0005	.0001	.0016	.1104	.0001
Stddev	.0006	.0038	.0002	.0008	.0001	.0001	.0016	.0007	.0000
%RSD	119.5	77.70	74.54	13.27	13.89	90.63	102.3	.6082	30.33
#1	.0002	.0021	-.0001	.0057	.0004	.0001	.0034	.1096	.0001
#2	-.0008	.0034	-.0003	.0071	.0005	.0000	.0012	.1107	.0001
#3	-.0008	.0093	-.0005	.0056	.0005	.0001	.0002	.1109	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0015	.0013	.1202	.0258	<.0000	.0008	.0013	.0002
Stddev	.0000	.0003	.0016	.0014	.0071	.0007	.0144	.0003	.0002
%RSD	77.14	21.35	117.3	1.167	27.59	86.76	1848.	20.81	106.2
#1	.0001	.0018	.0021	.1186	.0191	-.0004	.0001	.0013	.0001
#2	.0000	.0013	.0024	.1208	.0249	-.0017	-.0132	.0016	.0003
#3	.0000	.0013	-.0005	.1212	.0333	-.0005	.0155	.0010	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0182	.0002	.0014	.0009	.0119	.0008	.0011	.0245	.0003
Stddev	.0066	.0002	.0007	.0004	.0010	.0015	.0017	.0044	.0002
%RSD	36.15	95.76	53.14	41.44	8.197	192.9	152.3	18.11	79.52
#1	.0257	.0003	.0022	.0011	.0120	.0016	.0031	.0246	.0005
#2	.0151	.0001	.0011	.0005	.0109	-.0010	.0007	.0200	.0000
#3	.0137	.0001	.0008	.0011	.0129	.0017	-.0003	.0289	.0004
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9451-B-4-B Acquired: 12/5/2014 17:16:28 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	.0023	<.0000	.0006	.0018	.0005	.0062
Stddev	.0000	.0041	.0004	.0006	.0113	.0017	.0002
%RSD	14.35	175.9	135.0	94.99	632.3	375.8	2.544
#1	.0003	-.0007	.0000	.0012	.0131	-.0006	.0060
#2	.0003	.0007	-.0007	.0007	-.0095	-.0005	.0062
#3	.0004	.0070	-.0001	.0000	.0017	.0024	.0063
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4199.6
Stddev	57.4
%RSD	1.3659
#1	4261.6
#2	4188.8
#3	4148.4

Sample Name: MB 160-160195/1-A Acquired: 12/5/2014 17:20:24 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0107	<.0000	.0093	.0003	.0000	<.0000	.1334	.0001
Stddev	.0005	.0077	.0005	.0031	.0001	.0001	.0003	.0003	.0000
%RSD	123.8	72.58	1135.	33.51	28.85	258.4	11.27	.2585	25.69
#1	-.0007	.0126	-.0003	.0123	.0004	.0001	-.0023	.1338	.0001
#2	-.0008	.0172	.0005	.0096	.0002	.0000	-.0028	.1331	.0001
#3	.0002	.0021	-.0003	.0061	.0003	.0000	-.0026	.1332	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0004	.0023	.0511	.0289	.0001	.0309	.0004	<.0000
Stddev	.0001	.0002	.0018	.0019	.0115	.0005	.0030	.0002	.0002
%RSD	52.64	46.41	77.98	3.630	39.81	473.0	9.794	46.70	278.3
#1	-.0001	.0007	.0042	.0500	.0419	-.0004	.0344	.0006	-.0002
#2	-.0002	.0003	.0017	.0533	.0199	.0006	.0290	.0005	-.0002
#3	-.0002	.0004	.0008	.0502	.0250	.0001	.0292	.0002	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0254	.0003	.0017	.0008	.0074	<.0000	<.0000	.0455	.0019
Stddev	.0064	.0003	.0010	.0004	.0019	.0011	.0008	.0026	.0002
%RSD	25.12	83.13	59.38	54.40	25.68	6045.	104.0	5.820	8.915
#1	.0308	.0004	.0007	.0012	.0058	.0012	-.0008	.0467	.0020
#2	.0271	.0005	.0026	.0008	.0069	-.0006	.0000	.0425	.0017
#3	.0184	.0000	.0017	.0003	.0096	-.0007	-.0017	.0473	.0021
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: MB 160-160195/1-A Acquired: 12/5/2014 17:20:24 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	.0007	.0000	.0001	.0095	.0030	.0085
Stddev	.0000	.0004	.0004	.0003	.0045	.0010	.0001
%RSD	18.28	61.24	1406.	308.6	47.27	33.60	1.011
#1	.0002	.0009	.0005	.0000	.0140	.0027	.0085
#2	.0001	.0009	-.0004	-.0001	.0094	.0022	.0085
#3	.0002	.0002	.0001	.0004	.0051	.0041	.0086
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4330.7
Stddev	23.1
%RSD	.53453
#1	4345.6
#2	4304.0
#3	4342.5

Sample Name: LCSSRM 160-160195/2- Acquired: 12/5/2014 17:24:20 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=2

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.3406**	**34.63**	**.4524**	**.4086**	**.9582**	**.2708**	**.0016**	**40.59**	**.7259**
Stddev	.0022	.11	.0014	.0033	.0011	.0003	.0014	.23	.0033
%RSD	.6337	.3071	.2996	.8089	.1097	.0932	90.97	.5774	.4538
#1	.3393	34.67	.4511	.4081	.9575	.2705	.0032	40.60	.7269
#2	.3393	34.50	.4524	.4056	.9576	.2710	.0009	40.35	.7222
#3	.3431	34.70	.4538	.4122	.9594	.2708	.0006	40.82	.7285
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.081**	**.4551**	**1.367**	**58.00**	**11.06**	**.0360**	**12.98**	**2.070**	**.5384**
Stddev	.005	.0051	.008	.03	.02	.0003	.07	.006	.0018
%RSD	.4828	1.124	.5790	.0546	.1713	.7859	.5593	.2686	.3346
#1	1.082	.4525	1.371	57.98	11.04	.0360	12.98	2.073	.5396
#2	1.075	.4517	1.358	57.99	11.06	.0363	12.91	2.064	.5363
#3	1.085	.4609	1.372	58.04	11.08	.0357	13.06	2.074	.5392
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.787**	**1.264**	**2.758**	**.5267**	**1.271**	**.4830**	**.6551**	**1.283**	**.7923**
Stddev	.007	.005	.013	.0028	.003	.0011	.0025	.018	.0034
%RSD	.1454	.3602	.4823	.5321	.1932	.2288	.3809	1.444	.4234
#1	4.780	1.265	2.751	.5252	1.269	.4831	.6542	1.279	.7929
#2	4.786	1.260	2.749	.5249	1.270	.4819	.6531	1.266	.7887
#3	4.794	1.269	2.773	.5299	1.274	.4841	.6579	1.303	.7953
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LCSSRM 160-160195/2- Acquired: 12/5/2014 17:24:20 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=2

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8029	.0456	.7171	.7685	.0612	.7107	.6603
Stddev	.0008	.0004	.0003	.0043	.0074	.0034	.0024
%RSD	.0957	.9545	.0362	.5580	12.17	.4759	.3665
#1	.8021	.0459	.7173	.7676	.0696	.7077	.6597
#2	.8030	.0451	.7171	.7648	.0553	.7101	.6583
#3	.8036	.0459	.7168	.7732	.0587	.7144	.6630
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4779.1
Stddev	4.8
%RSD	.09958
#1	4774.5
#2	4784.0
#3	4778.9

Sample Name: 160-9613-A-1-E Acquired: 12/5/2014 17:27:50 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	38.40	.0028	.0379	.6422	.0040	<.0000	182.5	<.0000
Stddev	.0007	.37	.0009	.0023	.0055	.0001	.0016	1.8	.0000
%RSD	456.6	.9611	33.51	6.167	.8574	1.254	184.6	.9902	10.72
#1	-.0009	38.83	.0029	.0406	.6486	.0041	-.0017	184.3	-.0002
#2	.0006	38.15	.0018	.0369	.6397	.0040	.0010	180.7	-.0002
#3	-.0001	38.23	.0036	.0362	.6385	.0040	-.0018	182.6	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0069	.0024	4.831	2.047	.0357	30.49	1.295	.0001
Stddev	.0003	.0005	.0001	.045	.025	.0002	.28	.011	.0001
%RSD	77.22	6.919	5.197	.9345	1.239	.4553	.9044	.8671	47.44
#1	-.0008	.0064	.0025	4.882	2.072	.0357	30.78	1.307	.0001
#2	-.0002	.0069	.0022	4.812	2.022	.0358	30.23	1.285	.0002
#3	-.0002	.0074	.0024	4.797	2.049	.0355	30.46	1.293	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.018	<.0000	.0207	<.0000	5.873	<.0000	<.0000	.0502	<.0000
Stddev	.006	.0000	.0014	.0004	.092	.0021	.0001	.0046	.0003
%RSD	.6137	84.25	6.566	32.65	1.560	328.4	30.94	9.113	18.18
#1	1.025	-.0001	.0223	-.0008	5.964	-.0021	-.0001	.0544	-.0015
#2	1.017	.0000	.0202	-.0010	5.781	-.0017	-.0002	.0454	-.0020
#3	1.013	.0000	.0197	-.0015	5.875	.0018	-.0003	.0509	-.0014
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9613-A-1-E Acquired: 12/5/2014 17:27:50 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3470	.0132	1.121	<.0000	.0868	.0091	.0051
Stddev	.0028	.0007	.009	.0004	.0061	.0009	.0002
%RSD	.7935	5.651	.7774	13.32	7.054	10.07	3.087
#1	.3502	.0140	1.131	-.0025	.0937	.0101	.0052
#2	.3454	.0131	1.115	-.0031	.0844	.0089	.0049
#3	.3454	.0126	1.117	-.0025	.0822	.0083	.0051
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4570.3
Stddev	43.3
%RSD	.94641
#1	4523.6
#2	4609.0
#3	4578.4

Sample Name: 160-9613-A-1-E SD Acquired: 12/5/2014 17:31:40 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=50

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	8.366	<.0000	.0097	.1417	.0009	<.0000	42.43	<.0000
Stddev	.0001	.053	.0017	.0039	.0007	.0001	.0031	.45	.0001
%RSD	31.62	.6284	1977.	40.54	.5046	6.279	131.9	1.070	3132.
#1	-.0003	8.329	-.0020	.0115	.1413	.0008	.0011	42.19	.0001
#2	-.0004	8.342	.0014	.0124	.1412	.0010	-.0049	42.14	.0000
#3	-.0003	8.426	.0003	.0052	.1425	.0009	-.0033	42.95	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0022	.0019	1.055	.4785	.0070	6.581	.2851	<.0000
Stddev	.0001	.0002	.0016	.006	.0403	.0005	.057	.0020	.0001
%RSD	71.44	6.908	84.51	.5392	8.412	6.780	.8633	.7182	155.6
#1	-.0002	.0024	.0035	1.052	.4790	.0065	6.582	.2848	-.0001
#2	-.0002	.0021	.0018	1.051	.5186	.0073	6.523	.2833	.0000
#3	.0000	.0022	.0003	1.062	.4381	.0073	6.637	.2873	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2310	<.0000	.0029	.0007	1.266	.0008	.0006	.0141	<.0000
Stddev	.0057	.0002	.0004	.0002	.022	.0019	.0023	.0019	.0003
%RSD	2.460	91.57	14.04	28.45	1.716	235.5	360.9	13.76	31.87
#1	.2358	-.0003	.0029	.0005	1.258	.0028	.0016	.0162	-.0006
#2	.2326	-.0002	.0026	.0010	1.250	.0003	.0023	.0123	-.0012
#3	.2248	.0000	.0034	.0007	1.291	-.0008	-.0020	.0140	-.0010
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9613-A-1-E SD Acquired: 12/5/2014 17:31:40 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=50

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0769	.0033	.2449	<.0000	.0067	.0033	.0062
Stddev	.0004	.0030	.0027	.0009	.0098	.0014	.0001
%RSD	.4909	89.36	1.104	70.84	146.1	43.72	1.815
#1	.0769	.0048	.2455	-.0007	.0087	.0047	.0061
#2	.0765	-.0001	.2419	-.0009	-.0039	.0033	.0061
#3	.0773	.0054	.2472	-.0024	.0155	.0019	.0063
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4257.1
Stddev	32.8
%RSD	.76958
#1	4276.6
#2	4275.4
#3	4219.2

Sample Name: 160-9613-A-1-F MS Acquired: 12/5/2014 17:35:32 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0149**	**40.69**	**.0705**	**.1684**	**.7418**	**.0682**	**.0720**	**190.1**	**.0713**
Stddev	.0002	.79	.0022	.0049	.0133	.0012	.0010	3.0	.0011
%RSD	1.324	1.945	3.104	2.929	1.795	1.712	1.417	1.587	1.543
#1	.0148	39.82	.0683	.1628	.7276	.0669	.0710	187.1	.0702
#2	.0147	40.88	.0705	.1703	.7439	.0686	.0722	190.0	.0714
#3	.0151	41.36	.0726	.1721	.7539	.0692	.0730	193.1	.0724
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0680**	**.0732**	**.0671**	**4.638**	**2.916**	**.1024**	**32.35**	**1.455**	**.0338**
Stddev	.0012	.0015	.0012	.090	.062	.0023	.63	.027	.0008
%RSD	1.698	1.986	1.776	1.935	2.138	2.282	1.946	1.881	2.379
#1	.0668	.0723	.0658	4.536	2.846	.1004	31.63	1.424	.0330
#2	.0682	.0724	.0682	4.673	2.935	.1018	32.65	1.463	.0337
#3	.0691	.0749	.0673	4.705	2.966	.1050	32.78	1.477	.0346
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.758**	**.0669**	**.0960**	**.0725**	**6.879**	**.0116**	**.0322**	**.0993**	**.0621**
Stddev	.036	.0013	.0017	.0014	.124	.0010	.0016	.0041	.0008
%RSD	2.028	1.889	1.737	1.890	1.796	8.811	5.054	4.170	1.236
#1	1.732	.0657	.0944	.0716	6.758	.0111	.0323	.0955	.0612
#2	1.744	.0666	.0960	.0741	6.875	.0109	.0338	.1037	.0625
#3	1.799	.0682	.0977	.0718	7.005	.0127	.0305	.0986	.0626
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9613-A-1-F MS Acquired: 12/5/2014 17:35:32 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4299	.0792	1.247	.0135	.1670	.0713	.0742
Stddev	.0078	.0044	.024	.0007	.0103	.0019	.0011
%RSD	1.817	5.546	1.952	4.904	6.165	2.723	1.522
#1	.4216	.0795	1.221	.0139	.1787	.0691	.0731
#2	.4310	.0747	1.250	.0128	.1627	.0727	.0741
#3	.4371	.0835	1.270	.0140	.1594	.0722	.0753
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4620.1
Stddev	73.5
%RSD	1.5907
#1	4702.8
#2	4595.4
#3	4562.2

Sample Name: 160-9613-A-1-G MSD Acquired: 12/5/2014 17:39:14 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0165**	**46.22**	**.0812**	**.1957**	**.8406**	**.0808**	**.0758**	**211.8**	**.0824**
Stddev	.0004	.11	.0009	.0030	.0016	.0004	.0004	2.0	.0005
%RSD	2.325	.2327	1.090	1.537	.1846	.4448	.4836	.9596	.5751
#1	.0161	46.33	.0822	.1937	.8424	.0809	.0756	212.1	.0822
#2	.0167	46.12	.0806	.1942	.8398	.0805	.0757	209.7	.0821
#3	.0167	46.21	.0808	.1992	.8396	.0812	.0763	213.7	.0830
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0807**	**.0859**	**.0820**	**2.637**	**3.431**	**.1193**	**36.52**	**1.639**	**.0387**
Stddev	.0007	.0014	.0015	.008	.009	.0003	.21	.003	.0001
%RSD	.8199	1.591	1.831	.2976	.2505	.2898	.5731	.1973	.3728
#1	.0804	.0863	.0807	2.641	3.421	.1196	36.54	1.640	.0386
#2	.0803	.0844	.0837	2.628	3.435	.1194	36.30	1.635	.0386
#3	.0815	.0870	.0817	2.643	3.436	.1189	36.72	1.641	.0388
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.038**	**.0787**	**.1089**	**.0842**	**7.423**	**.0132**	**.0396**	**.2285**	**.0724**
Stddev	.012	.0003	.0010	.0006	.035	.0015	.0007	.0018	.0006
%RSD	.5843	.4312	.8826	.7345	.4777	11.26	1.708	.7825	.8481
#1	2.052	.0784	.1084	.0836	7.417	.0129	.0391	.2280	.0721
#2	2.032	.0786	.1082	.0841	7.390	.0148	.0393	.2305	.0720
#3	2.030	.0791	.1100	.0848	7.460	.0118	.0404	.2270	.0731
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9613-A-1-G MSD Acquired: 12/5/2014 17:39:14 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4921	.0924	1.487	.0142	.2103	.0860	.0858
Stddev	.0008	.0025	.005	.0003	.0093	.0015	.0004
%RSD	.1620	2.732	.3259	2.080	4.401	1.689	.4825
#1	.4929	.0944	1.491	.0145	.2179	.0857	.0858
#2	.4914	.0895	1.481	.0142	.2130	.0847	.0854
#3	.4920	.0932	1.488	.0139	.2000	.0876	.0862
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4718.2
Stddev	38.0
%RSD	.80628
#1	4713.7
#2	4758.3
#3	4682.6

Sample Name: 160-9613-A-2-C Acquired: 12/5/2014 17:42:55 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	29.93	.0005	.0339	.5127	.0032	<.0000	150.5	<.0000
Stddev	.0004	.43	.0017	.0009	.0069	.0001	.0007	2.8	.0001
%RSD	163.0	1.451	313.1	2.669	1.355	1.825	84.42	1.864	309.6
#1	-.0005	30.11	.0010	.0342	.5147	.0032	-.0004	150.0	.0001
#2	.0002	30.24	.0019	.0347	.5183	.0032	-.0004	153.6	-.0002
#3	-.0004	29.43	-.0013	.0329	.5049	.0031	-.0015	148.0	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0054	.0013	1.907	1.850	.0291	23.73	1.036	.0002
Stddev	.0001	.0010	.0009	.036	.039	.0007	.65	.021	.0002
%RSD	30.17	19.16	71.94	1.907	2.102	2.548	2.749	2.020	134.2
#1	-.0004	.0049	.0005	1.918	1.839	.0284	23.90	1.043	.0000
#2	-.0003	.0066	.0023	1.936	1.893	.0299	24.28	1.052	.0001
#3	-.0006	.0047	.0011	1.866	1.818	.0292	23.01	1.012	.0004
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8971	<.0000	.0146	<.0000	5.196	.0004	.0005	.0356	<.0000
Stddev	.0023	.0001	.0002	.0002	.116	.0010	.0007	.0038	.0003
%RSD	.2532	21.31	1.603	1235.	2.222	222.7	142.8	10.59	15.94
#1	.8997	-.0002	.0143	.0002	5.196	-.0003	.0012	.0356	-.0014
#2	.8955	-.0003	.0146	-.0002	5.312	.0001	.0006	.0393	-.0019
#3	.8961	-.0004	.0148	.0000	5.081	.0016	-.0003	.0318	-.0019
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9613-A-2-C Acquired: 12/5/2014 17:42:55 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2791	.0110	.8418	<.0000	.0711	.0081	.0034
Stddev	.0040	.0040	.0158	.0005	.0079	.0022	.0001
%RSD	1.448	35.84	1.883	15.96	11.11	27.87	3.447
#1	.2803	.0066	.8460	-.0029	.0621	.0107	.0035
#2	.2825	.0142	.8552	-.0036	.0770	.0070	.0034
#3	.2746	.0122	.8243	-.0026	.0742	.0065	.0033
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4685.9
Stddev	132.8
%RSD	2.8332
#1	4634.7
#2	4586.4
#3	4836.6

Sample Name: 160-9613-A-3-C Acquired: 12/5/2014 17:46:45 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	31.59	.0016	.0331	.5302	.0032	<.0000	172.9	<.0000
Stddev	.0004	.42	.0004	.0034	.0076	.0000	.0005	4.9	.0001
%RSD	91.02	1.330	28.76	10.33	1.431	1.026	14.70	2.831	95.55
#1	-.0009	31.46	.0019	.0324	.5267	.0032	-.0040	167.5	-.0001
#2	-.0004	32.06	.0011	.0301	.5389	.0032	-.0030	173.9	.0000
#3	-.0001	31.25	.0017	.0369	.5250	.0032	-.0038	177.2	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0046	.0017	1.909	2.017	.0315	27.03	.9806	.0000
Stddev	.0002	.0010	.0017	.026	.052	.0007	.33	.0125	.0001
%RSD	44.22	21.41	103.3	1.351	2.571	2.237	1.215	1.276	394.7
#1	-.0004	.0045	.0001	1.900	1.970	.0311	26.91	.9782	.0000
#2	-.0003	.0056	.0014	1.938	2.073	.0323	27.40	.9942	.0000
#3	-.0007	.0037	.0035	1.889	2.010	.0310	26.78	.9695	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.312	<.0000	.0147	<.0000	5.344	.0006	<.0000	.0488	<.0000
Stddev	.018	.0002	.0005	.0003	.182	.0013	.0013	.0008	.0002
%RSD	1.372	35.64	3.353	71.47	3.412	196.3	609.9	1.573	9.678
#1	1.300	-.0006	.0150	-.0004	5.139	.0001	-.0016	.0482	-.0017
#2	1.333	-.0003	.0150	-.0006	5.404	-.0002	.0010	.0497	-.0018
#3	1.303	-.0006	.0141	-.0001	5.488	.0021	-.0001	.0486	-.0021
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9613-A-3-C Acquired: 12/5/2014 17:46:45 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2963	.0121	.9853	<.0000	.0846	.0061	.0028
Stddev	.0042	.0029	.0124	.0007	.0010	.0005	.0001
%RSD	1.418	23.54	1.255	42.25	1.212	7.408	2.734
#1	.2940	.0093	.9800	-.0013	.0853	.0057	.0027
#2	.3012	.0150	.9994	-.0023	.0834	.0062	.0028
#3	.2938	.0120	.9764	-.0011	.0850	.0066	.0028
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4496.3
Stddev	48.0
%RSD	1.0668
#1	4490.8
#2	4451.3
#3	4546.8

Sample Name: 160-9613-A-4-C Acquired: 12/5/2014 17:50:35 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	29.78	.0007	.0323	.5040	.0031	<.0000	161.3	<.0000
Stddev	.0002	.58	.0013	.0032	.0119	.0001	.0011	3.2	.0001
%RSD	37.72	1.935	201.4	10.03	2.360	2.320	234.0	1.977	326.0
#1	-.0008	30.33	.0005	.0359	.5145	.0031	.0008	157.9	.0001
#2	-.0006	29.82	-.0006	.0296	.5064	.0031	-.0011	161.7	-.0001
#3	-.0004	29.18	.0021	.0313	.4911	.0030	-.0012	164.2	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0060	<.0000	1.137	1.927	.0285	24.45	1.086	.0001
Stddev	.0002	.0007	.0008	.024	.033	.0011	.41	.018	.0001
%RSD	75.58	11.03	159.4	2.074	1.703	3.812	1.679	1.670	83.82
#1	-.0006	.0067	-.0011	1.159	1.962	.0297	24.82	1.104	.0000
#2	-.0003	.0054	.0004	1.141	1.896	.0275	24.51	1.086	.0003
#3	-.0001	.0059	-.0007	1.112	1.922	.0282	24.01	1.067	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9621	<.0000	.0178	<.0000	5.313	.0004	<.0000	.0455	<.0000
Stddev	.0302	.0000	.0011	.0004	.086	.0010	.0011	.0018	.0003
%RSD	3.140	8.168	5.956	188.7	1.611	242.0	328.1	3.889	12.22
#1	.9902	-.0005	.0167	.0000	5.221	.0008	.0009	.0461	-.0021
#2	.9661	-.0004	.0179	.0000	5.328	.0013	-.0007	.0469	-.0023
#3	.9301	-.0004	.0188	-.0006	5.390	-.0007	-.0012	.0435	-.0018
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9613-A-4-C Acquired: 12/5/2014 17:50:35 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2749	.0095	.9685	<.0000	.0647	.0095	.0030
Stddev	.0065	.0044	.0195	.0011	.0021	.0027	.0001
%RSD	2.354	46.40	2.015	59.77	3.238	28.87	3.655
#1	.2808	.0142	.9872	-.0007	.0647	.0065	.0029
#2	.2760	.0087	.9701	-.0029	.0668	.0120	.0030
#3	.2680	.0055	.9483	-.0019	.0626	.0099	.0031
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4466.2
Stddev	56.9
%RSD	1.2734
#1	4419.0
#2	4450.2
#3	4529.4

Sample Name: CCV Acquired: 12/5/2014 17:54:27 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.059**	**49.78**	**5.417**	**5.041**	**5.032**	**5.091**	**5.401**	F **55.54**	**5.428**
Stddev	.017	.93	.158	.100	.123	.052	.160	1.45	.148
%RSD	1.636	1.865	2.924	1.976	2.437	1.030	2.953	2.610	2.721
#1	1.073	50.21	5.550	5.080	5.129	5.151	5.530	56.77	5.550
#2	1.064	50.41	5.458	5.116	5.073	5.060	5.449	55.91	5.469
#3	1.040	48.71	5.242	4.928	4.894	5.061	5.223	53.94	5.264
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
Value								50.00	
Range								10.00%	

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F **5.504**	**5.491**	**5.414**	**51.61**	**51.06**	**4.991**	**52.36**	**5.168**	**1.094**
Stddev	.148	.096	.154	1.08	.92	.082	1.21	.106	.031
%RSD	2.681	1.752	2.852	2.095	1.805	1.649	2.307	2.059	2.852
#1	5.627	5.577	5.543	52.24	51.50	5.014	53.16	5.238	1.119
#2	5.545	5.508	5.455	52.23	51.68	5.059	52.95	5.220	1.103
#3	5.340	5.387	5.243	50.36	50.00	4.900	50.97	5.045	1.059
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	5.000								
Range	10.00%								

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**50.38**	F **5.530**	F **55.69**	F **5.542**	**53.52**	**1.073**	**1.078**	**5.023**	F **5.534**
Stddev	.93	.146	1.58	.150	1.58	.033	.030	.120	.149
%RSD	1.837	2.644	2.835	2.713	2.944	3.040	2.770	2.390	2.692
#1	50.58	5.651	57.02	5.665	54.80	1.101	1.102	5.095	5.655
#2	51.18	5.572	56.11	5.587	53.99	1.080	1.088	5.091	5.579
#3	49.36	5.368	53.94	5.374	51.76	1.037	1.044	4.885	5.367
Check ?	Chk Pass	Chk Fail	Chk Fail	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
Value		5.000	50.00	5.000					5.000
Range		10.00%	10.00%	10.00%					10.00%

Sample Name: CCV Acquired: 12/5/2014 17:54:27 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.069	5.386	5.080	F 1.117	5.393	5.143	5.460
Stddev	.051	.103	.102	.029	.106	.095	.150
%RSD	.9991	1.922	2.013	2.615	1.974	1.852	2.752
#1	5.127	5.477	5.128	1.141	5.478	5.187	5.585
#2	5.046	5.408	5.150	1.124	5.427	5.208	5.502
#3	5.033	5.274	4.963	1.084	5.274	5.033	5.293
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value				1.000			
Range				10.00%			

Int. Std.	Y_3710
Units	Cts/S
Avg	3957.4
Stddev	95.1
%RSD	2.4030
#1	3878.5
#2	3930.6
#3	4063.0

Sample Name: CCB Acquired: 12/5/2014 17:58:16 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0011	.0001	.0141	.0006	.0004	.0005	.0048	.0002
Stddev	.0006	.0044	.0013	.0039	.0001	.0001	.0020	.0016	.0001
%RSD	187.7	414.5	1233.	27.54	20.39	18.31	417.2	32.71	72.07
#1	-.0002	.0061	.0015	.0098	.0007	.0005	-.0005	.0062	.0003
#2	.0002	-.0009	-.0002	.0152	.0007	.0004	.0027	.0051	.0001
#3	-.0009	-.0020	-.0010	.0174	.0005	.0004	-.0008	.0031	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	.0008	<.0000	.0051	.0486	<.0000	.0114	.0007	<.0000
Stddev	.0000	.0003	.0012	.0010	.0154	.0014	.0056	.0001	.0003
%RSD	23.46	31.50	969.2	18.81	31.76	647.1	49.32	12.95	474.2
#1	.0002	.0008	-.0015	.0060	.0559	-.0009	.0147	.0007	-.0004
#2	.0001	.0011	.0002	.0052	.0590	.0014	.0147	.0006	.0001
#3	.0002	.0006	.0008	.0041	.0309	-.0011	.0049	.0006	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0004	.0021	.0009	.0039	.0011	<.0000	<.0000	.0003
Stddev	.0052	.0001	.0005	.0003	.0020	.0008	.0009	.0051	.0002
%RSD	236.4	23.45	23.44	32.75	50.21	74.20	5875.	553.7	89.11
#1	-.0023	.0005	.0026	.0009	.0041	.0021	.0008	.0031	.0000
#2	-.0074	.0003	.0016	.0006	.0019	.0007	-.0011	.0008	.0003
#3	.0030	.0005	.0022	.0011	.0058	.0006	.0002	-.0067	.0005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Sample Name: CCB Acquired: 12/5/2014 17:58:16 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	.0004	.0002	.0001	<.0000	.0022	.0002
Stddev	.0002	.0027	.0003	.0006	.0082	.0027	.0000
%RSD	39.87	732.9	211.2	455.1	258.6	122.2	23.19
#1	.0006	.0033	.0001	.0008	.0026	.0017	.0002
#2	.0004	-.0002	-.0001	-.0005	-.0126	.0051	.0002
#3	.0003	-.0020	.0005	.0001	.0005	-.0002	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_3710
Units	Cts/S
Avg	4106.2
Stddev	47.6
%RSD	1.1582
#1	4152.4
#2	4108.9
#3	4057.4

Sample Name: 160-9613-A-5-C Acquired: 12/5/2014 18:02:14 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	30.89	.0006	.0317	.5172	.0032	<.0000	167.1	<.0000
Stddev	.0007	.39	.0007	.0016	.0068	.0001	.0012	9.0	.0000
%RSD	400.9	1.256	104.6	4.947	1.313	1.946	45.79	5.367	181.9
#1	.0001	30.53	.0014	.0305	.5112	.0031	-.0021	157.8	.0000
#2	-.0005	31.30	.0002	.0310	.5246	.0032	-.0016	167.9	.0000
#3	.0009	30.84	.0003	.0334	.5157	.0032	-.0038	175.7	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0076	.0027	2.766	1.891	.0300	25.14	1.231	.0001
Stddev	.0006	.0009	.0017	.037	.060	.0011	.41	.015	.0002
%RSD	229.1	12.11	62.50	1.338	3.198	3.582	1.628	1.189	193.8
#1	-.0009	.0066	.0008	2.730	1.880	.0292	24.73	1.216	-.0001
#2	.0001	.0084	.0035	2.804	1.956	.0297	25.54	1.245	.0003
#3	.0001	.0077	.0038	2.765	1.837	.0313	25.15	1.234	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9551	<.0000	.0214	<.0000	5.199	.0001	<.0000	.0505	<.0000
Stddev	.0135	.0001	.0010	.0008	.274	.0004	.0011	.0022	.0007
%RSD	1.417	77.02	4.870	255.5	5.270	580.2	2214.	4.331	39.22
#1	.9482	-.0001	.0206	-.0004	4.914	.0003	-.0001	.0510	-.0011
#2	.9707	-.0001	.0226	-.0011	5.223	-.0004	-.0011	.0524	-.0016
#3	.9465	-.0003	.0210	.0005	5.461	.0002	.0010	.0481	-.0024
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9613-A-5-C Acquired: 12/5/2014 18:02:14 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2780	.0095	1.016	<.0000	.0875	.0086	.0029
Stddev	.0039	.0034	.014	.0005	.0079	.0024	.0002
%RSD	1.420	36.35	1.377	17.84	9.053	28.17	5.600
#1	.2747	.0055	1.003	-.0025	.0868	.0062	.0027
#2	.2823	.0113	1.031	-.0033	.0799	.0085	.0029
#3	.2768	.0116	1.014	-.0035	.0957	.0111	.0030
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4558.9
Stddev	35.2
%RSD	.77202
#1	4589.1
#2	4520.2
#3	4567.3

Sample Name: 160-9613-A-6-C Acquired: 12/5/2014 18:06:04 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	31.50	.0009	.0316	.5033	.0032	<.0000	171.2	<.0000
Stddev	.0004	.39	.0005	.0016	.0063	.0000	.0009	6.3	.0000
%RSD	728.7	1.253	52.03	5.212	1.245	.9508	34.92	3.652	68.66
#1	.0004	31.11	.0009	.0331	.4979	.0032	-.0019	164.5	.0000
#2	-.0004	31.50	.0014	.0298	.5020	.0032	-.0023	172.1	.0000
#3	.0002	31.90	.0004	.0318	.5102	.0032	-.0036	176.9	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0068	.0019	4.579	1.900	.0302	26.62	1.117	<.0000
Stddev	.0003	.0005	.0010	.030	.048	.0008	.23	.008	.0002
%RSD	141.8	7.957	53.44	.6640	2.521	2.749	.8590	.7362	924.1
#1	-.0006	.0074	.0030	4.550	1.845	.0304	26.39	1.109	-.0001
#2	.0000	.0067	.0011	4.577	1.927	.0309	26.61	1.117	.0002
#3	-.0001	.0064	.0016	4.610	1.928	.0293	26.85	1.126	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9237	.0000	.0255	<.0000	5.135	.0001	<.0000	.0670	<.0000
Stddev	.0089	.0002	.0015	.0009	.209	.0011	.0003	.0105	.0001
%RSD	.9610	1817.	5.738	4335.	4.075	838.7	27.28	15.67	6.118
#1	.9243	.0000	.0247	.0011	4.922	-.0007	-.0014	.0561	-.0021
#2	.9145	.0002	.0246	-.0005	5.144	.0013	-.0008	.0771	-.0018
#3	.9322	-.0002	.0272	-.0007	5.340	-.0002	-.0010	.0677	-.0019
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9613-A-6-C Acquired: 12/5/2014 18:06:04 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2999	.0109	1.006	<.0000	.0717	.0125	.0025
Stddev	.0029	.0006	.013	.0019	.0054	.0018	.0001
%RSD	.9675	5.840	1.253	75.29	7.525	14.76	2.344
#1	.2973	.0105	.9942	-.0043	.0694	.0133	.0025
#2	.2995	.0106	1.005	-.0005	.0678	.0104	.0024
#3	.3030	.0117	1.019	-.0029	.0779	.0137	.0026
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4677.4
Stddev	26.9
%RSD	.57453
#1	4653.8
#2	4671.6
#3	4706.7

Sample Name: 160-9613-A-7-C Acquired: 12/5/2014 18:09:56 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	33.19	.0013	.0359	.5555	.0033	<.0000	179.7	.0000
Stddev	.0004	.30	.0012	.0038	.0050	.0001	.0013	9.0	.0001
%RSD	290.8	.9154	92.42	10.59	.8924	1.970	72.33	5.026	505.1
#1	-.0006	32.92	.0027	.0326	.5511	.0033	-.0005	170.9	-.0001
#2	.0002	33.12	.0009	.0401	.5546	.0034	-.0031	179.1	.0001
#3	.0000	33.52	.0004	.0352	.5609	.0034	-.0017	189.0	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0064	.0024	1.236	2.048	.0319	27.81	1.150	.0000
Stddev	.0001	.0008	.0011	.014	.031	.0006	.32	.013	.0001
%RSD	41.23	12.75	43.99	1.153	1.506	1.834	1.158	1.129	493.7
#1	-.0005	.0069	.0029	1.222	2.036	.0325	27.49	1.138	.0000
#2	-.0003	.0069	.0012	1.235	2.025	.0313	27.80	1.147	-.0001
#3	-.0003	.0055	.0031	1.251	2.083	.0319	28.13	1.164	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.212	<.0000	.0189	<.0000	5.389	<.0000	<.0000	.0602	<.0000
Stddev	.009	.0003	.0008	.0013	.297	.0011	.0007	.0030	.0006
%RSD	.7653	51.26	4.010	180.0	5.504	358.2	51.97	4.958	30.48
#1	1.205	-.0003	.0186	.0000	5.100	-.0012	-.0017	.0606	-.0013
#2	1.210	-.0004	.0182	.0001	5.375	.0009	-.0019	.0571	-.0025
#3	1.223	-.0008	.0197	-.0022	5.693	-.0006	-.0006	.0631	-.0019
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9613-A-7-C Acquired: 12/5/2014 18:09:56 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3086	.0136	1.090	<.0000	.0762	.0110	.0030
Stddev	.0027	.0015	.015	.0009	.0057	.0019	.0001
%RSD	.8671	10.87	1.331	32.02	7.523	17.05	3.800
#1	.3064	.0119	1.079	-.0037	.0820	.0089	.0031
#2	.3079	.0143	1.085	-.0020	.0705	.0117	.0031
#3	.3116	.0146	1.106	-.0026	.0762	.0125	.0029
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4473.0
Stddev	31.7
%RSD	.70930
#1	4500.0
#2	4481.0
#3	4438.1

Sample Name: 160-9613-A-8-C Acquired: 12/5/2014 18:13:46 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	36.84	.0014	.0381	.6256	.0037	<.0000	187.5	<.0000
Stddev	.0002	.22	.0002	.0032	.0024	.0000	.0012	4.5	.0001
%RSD	67.19	.5837	16.81	8.268	.3768	.9204	143.3	2.389	48.16
#1	-.0005	36.81	.0015	.0346	.6235	.0037	-.0019	184.3	-.0002
#2	-.0001	36.64	.0015	.0408	.6251	.0036	-.0011	185.6	-.0002
#3	-.0003	37.07	.0011	.0390	.6281	.0037	.0005	192.6	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0073	.0011	1.550	2.398	.0368	31.30	1.280	.0001
Stddev	.0002	.0007	.0008	.011	.024	.0007	.23	.010	.0002
%RSD	44.21	10.14	72.62	.7182	.9941	1.856	.7493	.7609	273.1
#1	-.0005	.0076	.0007	1.538	2.406	.0365	31.21	1.278	-.0001
#2	-.0002	.0064	.0006	1.549	2.417	.0363	31.12	1.272	.0001
#3	-.0005	.0078	.0020	1.561	2.371	.0376	31.56	1.291	.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.458	<.0000	.0219	.0001	5.826	.0001	<.0000	.0613	<.0000
Stddev	.004	.0002	.0007	.0006	.160	.0029	.0008	.0063	.0003
%RSD	.3100	33.08	3.388	620.0	2.738	3143.	82.60	10.25	13.80
#1	1.455	-.0006	.0220	.0006	5.709	.0032	-.0011	.0551	-.0022
#2	1.463	-.0004	.0212	-.0006	5.762	-.0003	-.0001	.0676	-.0017
#3	1.455	-.0008	.0227	.0002	6.008	-.0026	-.0015	.0612	-.0022
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9613-A-8-C Acquired: 12/5/2014 18:13:46 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3507	.0140	1.217	<.0000	.1081	.0097	.0033
Stddev	.0012	.0033	.008	.0007	.0141	.0013	.0001
%RSD	.3421	23.65	.6298	19.93	13.04	12.98	2.835
#1	.3494	.0104	1.212	-.0032	.1186	.0095	.0034
#2	.3508	.0168	1.212	-.0028	.0921	.0111	.0032
#3	.3518	.0149	1.226	-.0041	.1137	.0086	.0032
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4544.8
Stddev	34.7
%RSD	.76342
#1	4544.5
#2	4579.7
#3	4510.3

Sample Name: 160-9613-A-9-C Acquired: 12/5/2014 18:17:38 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	40.06	.0015	.0408	.6782	.0041	<.0000	206.3	<.0000
Stddev	.0003	.25	.0015	.0043	.0057	.0000	.0006	4.9	.0000
%RSD	36.42	.6347	101.9	10.48	.8399	.5717	20.32	2.360	35.07
#1	-.0007	39.82	-.0002	.0423	.6725	.0040	-.0033	202.9	-.0001
#2	-.0006	40.02	.0027	.0360	.6780	.0041	-.0023	204.2	-.0001
#3	-.0012	40.33	.0019	.0441	.6839	.0041	-.0026	211.9	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0060	.0028	1.262	2.606	.0399	34.69	1.304	<.0000
Stddev	.0002	.0009	.0006	.009	.017	.0007	.26	.007	.0000
%RSD	33.12	15.12	19.92	.6706	.6687	1.774	.7598	.5186	38.59
#1	-.0008	.0064	.0033	1.255	2.595	.0392	34.54	1.298	-.0001
#2	-.0008	.0066	.0027	1.260	2.598	.0406	34.54	1.301	-.0001
#3	-.0004	.0049	.0023	1.272	2.626	.0400	35.00	1.311	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.608	<.0000	.0219	<.0000	6.314	<.0000	.0003	.0773	<.0000
Stddev	.013	.0003	.0009	.0011	.141	.0003	.0025	.0016	.0007
%RSD	.8251	93.19	4.305	129.3	2.229	45.49	931.4	2.060	32.39
#1	1.597	-.0001	.0226	.0003	6.218	-.0008	.0003	.0755	-.0030
#2	1.603	-.0008	.0209	-.0008	6.248	-.0007	-.0023	.0786	-.0018
#3	1.623	-.0003	.0224	-.0019	6.476	-.0003	.0028	.0778	-.0018
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9613-A-9-C Acquired: 12/5/2014 18:17:38 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3835	.0135	1.261	<.0000	.0846	.0111	.0029
Stddev	.0041	.0010	.009	.0006	.0167	.0025	.0001
%RSD	1.082	7.524	.7150	19.98	19.74	22.57	2.186
#1	.3794	.0144	1.253	-.0034	.0935	.0131	.0028
#2	.3835	.0124	1.260	-.0034	.0950	.0119	.0029
#3	.3877	.0137	1.271	-.0024	.0654	.0083	.0029
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4444.4
Stddev	31.0
%RSD	.69697
#1	4437.7
#2	4478.2
#3	4417.3

Sample Name: 160-9613-A-10-C Acquired: 12/5/2014 18:21:28 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	38.64	.0011	.0383	.6520	.0038	<.0000	188.0	<.0000
Stddev	.0004	.23	.0007	.0008	.0037	.0000	.0025	1.7	.0001
%RSD	319.5	.5994	64.53	2.217	.5607	.5137	120.0	.9254	183.0
#1	.0006	38.42	.0003	.0383	.6483	.0038	-.0009	187.3	.0000
#2	.0000	38.60	.0018	.0391	.6520	.0039	-.0050	186.8	-.0001
#3	-.0002	38.88	.0012	.0374	.6557	.0038	-.0004	190.0	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0070	.0028	1.810	2.382	.0375	31.19	1.358	<.0000
Stddev	.0003	.0006	.0003	.006	.029	.0003	.15	.004	.0002
%RSD	32.62	8.685	9.115	.3436	1.204	.8643	.4749	.3062	512.8
#1	-.0010	.0075	.0027	1.810	2.351	.0372	31.29	1.356	-.0003
#2	-.0009	.0071	.0031	1.803	2.388	.0374	31.02	1.355	.0002
#3	-.0005	.0063	.0027	1.816	2.407	.0378	31.26	1.363	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.412	<.0000	.0209	<.0000	5.813	.0005	<.0000	.0576	<.0000
Stddev	.004	.0001	.0005	.0006	.028	.0015	.0015	.0059	.0003
%RSD	.2735	39.66	2.227	426.6	.4827	290.2	1459.	10.25	17.50
#1	1.412	-.0002	.0204	.0003	5.833	.0003	.0016	.0517	-.0017
#2	1.408	-.0005	.0211	-.0008	5.781	-.0009	-.0007	.0635	-.0022
#3	1.415	-.0003	.0212	.0001	5.824	.0022	-.0013	.0575	-.0015
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9613-A-10-C Acquired: 12/5/2014 18:21:28 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3565	.0101	1.216	<.0000	.0975	.0094	.0036
Stddev	.0017	.0001	.008	.0006	.0065	.0027	.0001
%RSD	.4723	1.056	.6321	18.67	6.699	28.21	3.434
#1	.3551	.0101	1.210	-.0026	.1050	.0072	.0037
#2	.3561	.0101	1.213	-.0037	.0943	.0087	.0035
#3	.3583	.0103	1.224	-.0030	.0931	.0124	.0036
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4737.3
Stddev	38.1
%RSD	.80487
#1	4693.6
#2	4763.9
#3	4754.5

Sample Name: MB 160-159177/1-A Acquired: 12/5/2014 18:25:19 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0101	<.0000	<.0000	.0003	<.0000	.0001	.0521	<.0000
Stddev	.0006	.0018	.0003	.0005	.0001	.0000	.0014	.0023	.0001
%RSD	142.5	17.97	58.86	142.6	34.91	466.1	2678.	4.487	2169.
#1	.0001	.0105	-.0002	.0002	.0004	.0000	.0013	.0545	-.0001
#2	-.0011	.0081	-.0007	-.0007	.0003	.0000	-.0015	.0518	-.0001
#3	-.0003	.0117	-.0007	-.0004	.0002	.0000	.0004	.0499	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0007	.0016	.0083	.0763	<.0000	.0035	.0005	<.0000
Stddev	.0003	.0002	.0010	.0007	.0029	.0011	.0097	.0003	.0002
%RSD	99.67	29.20	62.05	8.217	3.754	525.6	279.7	67.48	104.5
#1	-.0006	.0009	.0028	.0075	.0794	.0010	.0050	.0007	-.0001
#2	.0000	.0007	.0010	.0088	.0757	-.0009	-.0069	.0001	-.0003
#3	-.0003	.0005	.0011	.0085	.0737	-.0007	.0123	.0006	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0059	.0003	.0012	.0008	.0032	<.0000	.0010	.0147	.0006
Stddev	.0033	.0002	.0009	.0010	.0001	.0011	.0003	.0053	.0001
%RSD	56.73	51.27	70.27	125.2	2.744	93.97	24.80	36.13	19.02
#1	.0050	.0002	.0017	.0004	.0032	-.0018	.0013	.0196	.0005
#2	.0096	.0003	.0002	.0001	.0031	-.0018	.0008	.0153	.0007
#3	.0031	.0005	.0018	.0019	.0033	.0001	.0010	.0091	.0006
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: MB 160-159177/1-A Acquired: 12/5/2014 18:25:19 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	<.0000	.0001	.0004	<.0000	.0001	.0095
Stddev	.0000	.0011	.0003	.0007	.0090	.0029	.0001
%RSD	65.35	2481.	246.0	150.2	89.12	2410.	1.331
#1	.0000	.0010	-.0002	.0004	-.0092	-.0006	.0095
#2	.0001	.0001	.0004	.0011	-.0195	.0034	.0097
#3	.0000	-.0012	.0002	-.0002	-.0016	-.0024	.0094
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4021.9
Stddev	19.0
%RSD	.47226
#1	4004.3
#2	4019.3
#3	4042.0

Sample Name: LCS 160-159177/2-A Acquired: 12/5/2014 18:29:14 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2241	10.76	1.129	2.128	1.101	1.106	1.146	12.74	1.137
Stddev	.0019	.02	.016	.018	.003	.004	.017	.17	.017
%RSD	.8359	.1575	1.395	.8688	.2740	.4104	1.487	1.302	1.473
#1	.2222	10.77	1.116	2.123	1.103	1.106	1.135	12.62	1.125
#2	.2241	10.74	1.124	2.112	1.097	1.102	1.139	12.67	1.129
#3	.2260	10.78	1.147	2.148	1.101	1.111	1.166	12.93	1.156
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.251	1.193	1.186	11.20	10.91	1.102	10.76	1.110	.5989
Stddev	.017	.014	.016	.04	.05	.004	.09	.004	.0091
%RSD	1.388	1.162	1.324	.3768	.4689	.3793	.7968	.4060	1.512
#1	1.239	1.180	1.175	11.18	10.92	1.106	10.71	1.110	.5924
#2	1.244	1.191	1.179	11.17	10.85	1.097	10.71	1.106	.5950
#3	1.271	1.208	1.204	11.24	10.95	1.103	10.86	1.115	.6092
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.88	1.218	1.211	1.231	11.08	.5666	.5685	.0400	1.205
Stddev	.05	.016	.018	.018	.19	.0096	.0098	.0071	.016
%RSD	.4418	1.325	1.507	1.456	1.752	1.700	1.717	17.71	1.310
#1	10.90	1.206	1.198	1.218	10.94	.5587	.5624	.0322	1.192
#2	10.82	1.212	1.204	1.225	11.01	.5637	.5634	.0419	1.199
#3	10.91	1.236	1.232	1.252	11.30	.5774	.5798	.0460	1.223
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LCS 160-159177/2-A Acquired: 12/5/2014 18:29:14 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.128	1.165	1.093	.2493	1.229	1.090	1.171
Stddev	.004	.010	.005	.0018	.021	.005	.018
%RSD	.3337	.8543	.4262	.7248	1.667	.4951	1.494
#1	1.130	1.156	1.092	.2486	1.207	1.084	1.157
#2	1.124	1.162	1.089	.2479	1.248	1.093	1.165
#3	1.131	1.176	1.098	.2513	1.232	1.093	1.190
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4064.3
Stddev	39.5
%RSD	.97298
#1	4098.7
#2	4073.1
#3	4021.1

Sample Name: 160-9422-B-1-A Acquired: 12/5/2014 18:32:40 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0037**	**.6070**	**<.0000**	**.1291**	**.0019**	**.0001**	**.0136**	**5.939**	**.4523**
Stddev	.0008	.0132	.0001	.0049	.0001	.0000	.0028	.381	.0277
%RSD	21.06	2.177	.6660	3.791	4.775	30.30	20.29	6.421	6.129
#1	.0030	.5965	-.0189	.1313	.0018	.0001	.0106	5.589	.4269
#2	.0035	.6026	-.0192	.1234	.0020	.0001	.0161	5.884	.4482
#3	.0046	.6218	-.0190	.1324	.0019	.0001	.0142	6.345	.4819
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0198**	**8.640**	**.0677**	**2.374**	**7.683**	**.0020**	**.5052**	**.1910**	**.0027**
Stddev	.0014	.198	.0044	.040	.122	.0009	.0137	.0031	.0002
%RSD	7.101	2.288	6.502	1.665	1.582	46.96	2.721	1.597	8.222
#1	.0186	8.476	.0635	2.337	7.563	.0014	.4918	.1884	.0025
#2	.0194	8.583	.0673	2.369	7.678	.0030	.5193	.1904	.0026
#3	.0213	8.859	.0723	2.415	7.806	.0014	.5045	.1943	.0029
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.097**	**.0229**	**49.88**	**1.890**	**1.369**	**.0794**	**<.0000**	**.9339**	**.0006**
Stddev	.058	.0015	3.08	.115	.084	.0093	.0018	.0106	.0003
%RSD	1.864	6.564	6.167	6.099	6.126	11.72	1471.	1.133	58.55
#1	3.039	.0216	47.03	1.782	1.292	.0714	.0020	.9259	.0007
#2	3.098	.0226	49.47	1.875	1.358	.0771	-.0015	.9299	.0008
#3	3.154	.0246	53.14	2.011	1.458	.0896	-.0008	.9459	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-1-A Acquired: 12/5/2014 18:32:40 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0044	.0290	.0198	.0011	.0086	.0052	5.185
Stddev	.0001	.0008	.0007	.0004	.0102	.0022	.320
%RSD	2.452	2.777	3.317	37.62	118.6	41.12	6.177
#1	.0043	.0281	.0196	.0016	.0104	.0062	4.887
#2	.0044	.0297	.0205	.0009	-.0024	.0028	5.146
#3	.0045	.0292	.0192	.0009	.0177	.0068	5.524
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4282.2
Stddev	24.0
%RSD	.55963
#1	4302.7
#2	4287.9
#3	4255.8

Sample Name: 160-9422-B-2-A Acquired: 12/5/2014 18:36:23 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**<.0000**	**<.0000**	**.1249**	**.0002**	**.0000**	**.0075**	**.9701**	**.0123**
Stddev	.0004	.0050	.0005	.0030	.0001	.0000	.0008	.0900	.0011
%RSD	403.9	151.4	3.201	2.427	63.50	74.91	10.44	9.277	9.120
#1	.0003	.0020	-.0139	.1214	.0001	.0000	.0082	.8819	.0111
#2	-.0004	-.0078	-.0146	.1268	.0002	.0000	.0067	.9668	.0123
#3	.0004	-.0041	-.0147	.1266	.0003	.0000	.0076	1.062	.0134
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0142**	**5.817**	**.0246**	**.0098**	**6.689**	**.0011**	**.2260**	**.0112**	**.0022**
Stddev	.0014	.195	.0016	.0014	.144	.0006	.0054	.0001	.0005
%RSD	9.551	3.344	6.339	13.83	2.161	56.88	2.392	1.229	20.79
#1	.0129	5.614	.0239	.0084	6.527	.0018	.2212	.0110	.0018
#2	.0142	5.835	.0235	.0098	6.734	.0007	.2319	.0113	.0021
#3	.0156	6.002	.0264	.0111	6.806	.0007	.2250	.0112	.0027
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.028**	**.0068**	**45.13**	**.0020**	**1.421**	**.0634**	**.0020**	**.8495**	**<.0000**
Stddev	.048	.0006	3.91	.0016	.122	.0076	.0008	.0214	.0008
%RSD	1.568	9.266	8.670	83.99	8.583	12.02	37.72	2.523	252.5
#1	2.974	.0062	41.24	.0001	1.297	.0553	.0026	.8248	.0004
#2	3.045	.0066	45.07	.0028	1.427	.0647	.0022	.8613	-.0002
#3	3.065	.0075	49.07	.0030	1.541	.0703	.0012	.8625	-.0011
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-2-A Acquired: 12/5/2014 18:36:23 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0176	.0019	.0010	<.0000	.0039	.0957
Stddev	.0001	.0015	.0002	.0006	.0025	.0037	.0085
%RSD	60.79	8.556	9.661	60.07	40.22	93.72	8.888
#1	.0002	.0167	.0018	.0008	-.0088	-.0002	.0874
#2	.0001	.0168	.0021	.0016	-.0037	.0050	.0952
#3	.0001	.0194	.0018	.0005	-.0064	.0069	.1044
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4345.8
Stddev	64.7
%RSD	1.4880
#1	4418.4
#2	4324.6
#3	4294.4

Sample Name: CCV Acquired: 12/5/2014 18:40:12 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.9928**	**47.73**	**5.090**	**4.845**	**4.786**	**4.906**	**5.041**	**52.84**	**5.091**
Stddev	.0040	.19	.018	.030	.060	.008	.015	.27	.020
%RSD	.4007	.3917	.3493	.6302	1.253	.1602	.2974	.5055	.3886
#1	.9928	47.80	5.101	4.847	4.835	4.901	5.049	52.99	5.103
#2	.9888	47.51	5.099	4.814	4.719	4.915	5.050	52.99	5.101
#3	.9967	47.86	5.069	4.875	4.803	4.902	5.023	52.53	5.068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.195**	**5.137**	**5.058**	**48.99**	**49.14**	**4.829**	**49.75**	**4.928**	**1.021**
Stddev	.022	.015	.017	.14	.16	.026	.09	.013	.002
%RSD	.4276	.2910	.3352	.2871	.3212	.5324	.1825	.2569	.1834
#1	5.207	5.129	5.069	48.97	49.22	4.840	49.70	4.925	1.022
#2	5.209	5.128	5.066	48.86	48.96	4.799	49.69	4.917	1.022
#3	5.169	5.154	5.038	49.14	49.24	4.847	49.85	4.942	1.019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**48.79**	**5.216**	**52.69**	**5.222**	**50.02**	**1.004**	**1.009**	**4.820**	**5.221**
Stddev	.20	.022	.22	.022	.17	.004	.002	.013	.027
%RSD	.4176	.4292	.4183	.4215	.3490	.4071	.2043	.2641	.5142
#1	48.81	5.228	52.80	5.236	50.14	1.007	1.012	4.806	5.235
#2	48.58	5.229	52.84	5.233	50.11	1.007	1.009	4.823	5.238
#3	48.99	5.190	52.44	5.196	49.82	.9996	1.007	4.830	5.190
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: CCV Acquired: 12/5/2014 18:40:12 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.887**	**5.053**	**4.857**	**1.053**	**5.033**	**4.917**	**5.136**
Stddev	.022	.031	.015	.004	.029	.014	.020
%RSD	.4536	.6074	.3108	.4252	.5825	.2811	.3826
#1	4.866	5.022	4.857	1.055	5.015	4.918	5.143
#2	4.910	5.053	4.842	1.055	5.017	4.902	5.151
#3	4.886	5.083	4.872	1.048	5.067	4.929	5.114
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**4162.3**
Stddev	10.2
%RSD	.24408
#1	4172.8
#2	4152.5
#3	4161.8

Sample Name: CCB Acquired: 12/5/2014 18:44:00 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	.0001	.0128	.0006	.0004	.0002	.0015	.0002
Stddev	.0007	.0100	.0004	.0013	.0000	.0001	.0019	.0003	.0001
%RSD	200.4	293.0	292.9	9.937	4.043	19.20	909.0	17.75	66.05
#1	.0001	.0071	.0005	.0128	.0006	.0005	.0022	.0018	.0002
#2	.0000	-.0046	.0001	.0140	.0006	.0004	-.0016	.0016	.0003
#3	-.0011	-.0127	-.0002	.0115	.0006	.0004	.0001	.0012	.0000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0013	.0023	.0040	.0376	<.0000	.0063	.0003	.0001
Stddev	.0003	.0011	.0002	.0012	.0194	.0016	.0098	.0001	.0001
%RSD	681.3	84.89	7.900	28.74	51.55	246.9	155.8	35.39	123.1
#1	.0001	.0007	.0022	.0050	.0307	-.0006	.0132	.0005	.0001
#2	.0001	.0025	.0024	.0043	.0595	-.0023	.0105	.0003	.0000
#3	-.0004	.0006	.0021	.0028	.0226	.0009	-.0049	.0002	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0002	.0029	.0004	.0056	<.0000	.0028	.0039	.0005
Stddev	.0102	.0003	.0012	.0008	.0031	.0010	.0014	.0068	.0006
%RSD	1805.	144.3	41.43	187.8	54.77	94.01	51.66	175.9	112.2
#1	-.0012	.0005	.0039	-.0003	.0080	-.0014	.0016	-.0031	.0011
#2	-.0104	.0001	.0033	.0003	.0066	-.0019	.0024	.0042	-.0001
#3	.0099	.0000	.0016	.0012	.0022	.0001	.0044	.0105	.0005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Sample Name: CCB Acquired: 12/5/2014 18:44:00 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	.0021	.0003	<.0000	<.0000	.0018	.0002
Stddev	.0001	.0010	.0005	.0016	.0038	.0043	.0001
%RSD	21.05	46.18	152.0	475.9	92.15	242.6	24.76
#1	.0006	.0032	.0004	.0013	-.0083	.0051	.0003
#2	.0004	.0013	.0008	-.0019	-.0011	-.0031	.0002
#3	.0004	.0018	-.0002	-.0004	-.0029	.0032	.0002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_3710
Units	Cts/S
Avg	4124.0
Stddev	17.3
%RSD	.42030
#1	4139.1
#2	4105.0
#3	4127.8

Sample Name: 160-9422-B-3-A Acquired: 12/5/2014 18:47:57 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0029	<.0000	.2761	.0011	.0001	.0023	62.21	.0089
Stddev	.0004	.0065	.0004	.0032	.0002	.0000	.0017	.89	.0001
%RSD	86.61	225.0	10.11	1.164	15.52	33.10	71.89	1.432	1.047
#1	-.0004	.0042	-.0043	.2727	.0012	.0001	.0038	61.44	.0088
#2	-.0001	.0087	-.0043	.2765	.0009	.0001	.0027	62.01	.0090
#3	-.0009	-.0042	-.0036	.2791	.0013	.0000	.0005	63.19	.0089
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0048	2.349	.0062	.0504	9.026	.1043	54.72	.0135	.0029
Stddev	.0002	.004	.0018	.0006	.021	.0010	.34	.0003	.0003
%RSD	3.385	.1894	28.97	1.243	.2311	.9364	.6213	2.048	8.985
#1	.0050	2.344	.0041	.0497	9.040	.1054	54.38	.0135	.0027
#2	.0046	2.352	.0071	.0508	9.002	.1039	54.70	.0138	.0027
#3	.0049	2.351	.0074	.0507	9.035	.1037	55.06	.0132	.0032
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	146.1	.0152	6.789	.0062	129.4	.0195	.0012	8.791	<.0000
Stddev	1.3	.0001	.087	.0004	1.9	.0012	.0015	.011	.0005
%RSD	.9045	.3631	1.285	6.706	1.465	5.931	124.1	.1281	74.20
#1	145.4	.0152	6.713	.0066	127.7	.0182	-.0005	8.778	-.0007
#2	147.7	.0152	6.770	.0063	129.2	.0197	.0016	8.799	-.0002
#3	145.4	.0153	6.884	.0058	131.5	.0205	.0025	8.797	-.0012
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-3-A Acquired: 12/5/2014 18:47:57 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2140	.0109	.0017	.0003	.0072	.0004	.0326
Stddev	.0003	.0028	.0001	.0003	.0045	.0031	.0005
%RSD	.1592	25.72	8.518	96.91	61.87	753.8	1.633
#1	.2141	.0139	.0017	.0001	.0047	.0003	.0322
#2	.2144	.0104	.0019	.0002	.0124	-.0026	.0324
#3	.2137	.0083	.0016	.0006	.0046	.0036	.0332
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3949.1
Stddev	38.5
%RSD	.97466
#1	3989.9
#2	3944.1
#3	3913.4

Sample Name: 160-9422-B-3-A SD Acquired: 12/5/2014 18:51:52 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=5

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	<.0000	.0543	.0001	.0000	.0028	13.18	.0018
Stddev	.0003	.0186	.0003	.0029	.0001	.0000	.0020	.10	.0001
%RSD	61.48	1216.	33.23	5.309	81.55	11.39	73.66	.7717	4.482
#1	-.0007	-.0059	-.0006	.0574	.0002	.0000	.0046	13.28	.0017
#2	-.0001	.0189	-.0011	.0540	.0001	.0000	.0031	13.18	.0019
#3	-.0006	-.0176	-.0013	.0516	.0000	.0001	.0006	13.08	.0018
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0009	.4792	.0027	.0102	1.764	.0212	10.85	.0025	.0005
Stddev	.0001	.0050	.0002	.0004	.030	.0005	.20	.0005	.0003
%RSD	10.10	1.042	8.147	3.906	1.702	2.546	1.815	18.47	61.87
#1	.0010	.4848	.0025	.0103	1.795	.0211	11.08	.0021	.0008
#2	.0008	.4778	.0029	.0097	1.763	.0206	10.74	.0030	.0002
#3	.0008	.4751	.0027	.0105	1.735	.0217	10.73	.0024	.0006
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	28.49	.0034	1.376	.0020	25.99	.0041	.0004	1.689	.0001
Stddev	.59	.0002	.016	.0012	.33	.0011	.0005	.034	.0001
%RSD	2.072	4.983	1.151	57.82	1.282	27.14	107.6	1.987	179.7
#1	29.15	.0034	1.390	.0021	26.29	.0049	.0009	1.724	-.0001
#2	28.31	.0036	1.379	.0008	26.05	.0028	.0005	1.686	.0002
#3	28.01	.0032	1.359	.0032	25.63	.0047	.0000	1.657	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-3-A SD Acquired: 12/5/2014 18:51:52 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=5

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0414	.0031	.0004	.0007	<.0000	.0027	.0159
Stddev	.0010	.0037	.0003	.0010	.0058	.0007	.0001
%RSD	2.411	117.2	74.36	146.0	40.08	24.27	.7433
#1	.0425	.0064	.0001	.0007	-.0200	.0029	.0158
#2	.0411	.0038	.0005	-.0003	-.0085	.0020	.0160
#3	.0405	-.0008	.0006	.0017	-.0147	.0032	.0158
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4094.1
Stddev	42.2
%RSD	1.0302
#1	4048.9
#2	4101.0
#3	4132.5

Sample Name: 160-9422-B-3-B MS Acquired: 12/5/2014 18:55:40 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2188	10.68	1.121	2.385	1.061	1.095	1.084	74.79	1.110
Stddev	.0003	.10	.013	.009	.006	.004	.009	.64	.011
%RSD	.1441	.9396	1.186	.3686	.5691	.4134	.8094	.8616	.9475
#1	.2192	10.57	1.136	2.378	1.054	1.091	1.094	75.54	1.123
#2	.2185	10.70	1.115	2.395	1.066	1.100	1.077	74.44	1.103
#3	.2188	10.77	1.111	2.382	1.063	1.095	1.081	74.40	1.106
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.202	3.393	1.141	11.08	19.65	1.172	66.55	1.111	.5758
Stddev	.010	.014	.012	.04	.09	.009	.24	.007	.0055
%RSD	.8586	.4011	1.028	.3473	.4431	.7591	.3576	.6081	.9575
#1	1.214	3.409	1.154	11.03	19.55	1.161	66.36	1.104	.5820
#2	1.195	3.389	1.133	11.10	19.71	1.176	66.48	1.112	.5716
#3	1.196	3.383	1.135	11.09	19.68	1.178	66.82	1.118	.5738
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	157.4	1.178	7.807	1.158	138.8	.5779	.5597	8.699	1.157
Stddev	3.5	.010	.090	.011	1.6	.0053	.0063	.020	.010
%RSD	2.235	.8795	1.148	.9161	1.126	.9125	1.128	.2351	.8500
#1	160.5	1.190	7.910	1.170	140.6	.5839	.5667	8.679	1.169
#2	153.6	1.172	7.763	1.150	137.7	.5753	.5578	8.697	1.152
#3	158.2	1.171	7.748	1.154	138.2	.5744	.5545	8.720	1.152
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-3-B MS Acquired: 12/5/2014 18:55:40 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.301	1.143	1.083	.2292	1.149	1.091	1.168
Stddev	.007	.012	.006	.0033	.012	.008	.012
%RSD	.5418	1.056	.5835	1.432	1.043	.7202	1.039
#1	1.293	1.155	1.075	.2326	1.150	1.084	1.182
#2	1.307	1.145	1.087	.2261	1.160	1.089	1.160
#3	1.303	1.131	1.086	.2289	1.136	1.099	1.162
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3917.1
Stddev	15.1
%RSD	.38453
#1	3900.2
#2	3922.0
#3	3929.2

Sample Name: 160-9422-B-3-C MSD Acquired: 12/5/2014 18:59:14 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2070**	**9.946**	**1.072**	**2.248**	**.9964**	**1.029**	**1.044**	**71.18**	**1.064**
Stddev	.0034	.030	.006	.008	.0027	.002	.010	.34	.006
%RSD	1.629	.2972	.5427	.3400	.2703	.1556	.9294	.4794	.5774
#1	.2044	9.979	1.074	2.249	.9995	1.028	1.042	70.96	1.063
#2	.2058	9.923	1.065	2.239	.9948	1.028	1.036	71.00	1.059
#3	.2108	9.937	1.076	2.255	.9948	1.031	1.055	71.57	1.071
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.144**	**3.204**	**1.092**	**10.39**	**18.55**	**1.098**	**62.46**	**1.039**	**.5512**
Stddev	.007	.051	.006	.04	.01	.005	.41	.003	.0036
%RSD	.5904	1.592	.5453	.4113	.0793	.4727	.6489	.3297	.6618
#1	1.141	3.172	1.093	10.36	18.56	1.104	62.26	1.041	.5500
#2	1.139	3.177	1.086	10.37	18.53	1.096	62.20	1.035	.5483
#3	1.151	3.263	1.098	10.44	18.55	1.093	62.93	1.042	.5553
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**145.6**	**1.123**	**7.467**	**1.110**	**134.1**	**.5540**	**.5364**	**8.185**	**1.106**
Stddev	.3	.006	.034	.008	.8	.0036	.0030	.021	.008
%RSD	.2020	.5119	.4541	.7327	.6323	.6536	.5550	.2585	.6834
#1	145.8	1.120	7.458	1.106	133.9	.5499	.5361	8.199	1.102
#2	145.7	1.119	7.438	1.105	133.3	.5567	.5336	8.160	1.101
#3	145.3	1.129	7.505	1.119	135.0	.5555	.5395	8.194	1.115
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-3-C MSD Acquired: 12/5/2014 18:59:14 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.222	1.070	1.015	.2201	1.083	1.025	1.114
Stddev	.003	.024	.001	.0009	.023	.003	.006
%RSD	.2018	2.252	.1098	.4094	2.159	.2537	.5769
#1	1.225	1.055	1.016	.2209	1.064	1.027	1.112
#2	1.221	1.057	1.014	.2191	1.076	1.022	1.109
#3	1.221	1.098	1.016	.2201	1.109	1.027	1.121
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4016.9
Stddev	31.4
%RSD	.78057
#1	4041.0
#2	4028.3
#3	3981.5

Sample Name: 160-9422-B-3-A PDS Acquired: 12/5/2014 19:02:48 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0966**	**1.913**	**.0947**	**.7492**	**.4717**	**.0499**	**1.744**	**70.57**	**.0586**
Stddev	.0007	.013	.0020	.0055	.0007	.0002	.004	.18	.0002
%RSD	.7311	.6714	2.104	.7329	.1461	.3268	.2401	.2572	.2704
#1	.0972	1.919	.0939	.7459	.4717	.0499	1.746	70.37	.0584
#2	.0958	1.922	.0933	.7556	.4725	.0501	1.746	70.61	.0587
#3	.0966	1.898	.0970	.7462	.4711	.0497	1.739	70.73	.0586
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.5371**	**2.311**	**.2613**	**1.047**	**57.00**	**.5739**	**62.69**	**.1586**	**.4301**
Stddev	.0010	.002	.0013	.004	.09	.0010	.10	.0004	.0012
%RSD	.1778	.1029	.5007	.3417	.1529	.1821	.1642	.2821	.2872
#1	.5364	2.310	.2601	1.045	56.98	.5732	62.63	.1583	.4293
#2	.5368	2.310	.2610	1.052	57.10	.5751	62.81	.1591	.4295
#3	.5382	2.314	.2627	1.046	56.93	.5733	62.64	.1586	.4315
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**146.8**	**.4384**	**8.959**	**.1090**	**175.3**	**.1109**	**.1501**	**12.41**	**1.064**
Stddev	2.0	.0009	.007	.0012	.3	.0011	.0033	.05	.002
%RSD	1.392	.1942	.0839	1.147	.1841	.9876	2.171	.4220	.2070
#1	146.7	.4375	8.954	.1103	174.9	.1103	.1500	12.37	1.062
#2	149.0	.4386	8.968	.1078	175.4	.1102	.1469	12.47	1.063
#3	144.9	.4391	8.955	.1088	175.6	.1122	.1534	12.38	1.066
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-3-A PDS Acquired: 12/5/2014 19:02:48 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2487	1.248	.1985	.2034	4.982	.4802	.2506
Stddev	.0009	.002	.0016	.0017	.011	.0035	.0002
%RSD	.3437	.1689	.7923	.8603	.2159	.7339	.0739
#1	.2487	1.249	.1969	.2015	4.984	.4763	.2505
#2	.2496	1.249	.2000	.2037	4.970	.4832	.2509
#3	.2479	1.245	.1985	.2049	4.991	.4812	.2506
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3966.3
Stddev	5.6
%RSD	.14024
#1	3971.2
#2	3967.4
#3	3960.2

Sample Name: 160-9422-B-4-A Acquired: 12/5/2014 19:06:29 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0096	<.0000	.2445	.0008	.0000	.0033	56.35	.0084
Stddev	.0006	.0054	.0004	.0038	.0001	.0000	.0017	.36	.0001
%RSD	1558.	56.41	9.745	1.561	9.451	165.1	52.42	.6323	.8707
#1	-.0005	.0142	-.0044	.2489	.0008	.0001	.0050	56.74	.0085
#2	-.0003	.0036	-.0037	.2428	.0009	.0000	.0016	56.03	.0084
#3	.0006	.0112	-.0038	.2418	.0007	.0000	.0033	56.29	.0083
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0045	2.068	.0057	.0040	8.125	.0929	48.40	.0149	.0027
Stddev	.0000	.016	.0011	.0010	.083	.0010	.46	.0003	.0002
%RSD	.7677	.7602	18.76	26.25	1.020	1.105	.9526	1.909	8.633
#1	.0045	2.080	.0065	.0051	8.221	.0938	48.92	.0150	.0028
#2	.0044	2.050	.0045	.0037	8.079	.0918	48.19	.0146	.0025
#3	.0045	2.072	.0062	.0031	8.076	.0930	48.08	.0151	.0029
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	130.1	.0134	6.098	.0026	119.2	.0183	<.0000	7.746	<.0000
Stddev	1.3	.0000	.036	.0007	.8	.0008	.0011	.054	.0001
%RSD	1.006	.3133	.5959	25.96	.6343	4.114	192.7	.7020	14.12
#1	131.5	.0135	6.139	.0019	120.0	.0174	.0007	7.809	-.0006
#2	129.9	.0134	6.068	.0033	118.7	.0189	-.0015	7.714	-.0004
#3	128.8	.0134	6.087	.0027	118.8	.0184	-.0009	7.716	-.0005
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-4-A Acquired: 12/5/2014 19:06:29 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1899	.0115	.0020	<.0000	.0047	.0038	.0209
Stddev	.0016	.0010	.0002	.0001	.0073	.0007	.0002
%RSD	.8240	8.809	11.48	20.58	154.3	19.47	.8027
#1	.1916	.0122	.0022	-.0005	.0015	.0043	.0211
#2	.1886	.0119	.0019	-.0007	-.0004	.0030	.0209
#3	.1896	.0103	.0018	-.0008	.0130	.0042	.0208
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4282.2
Stddev	40.1
%RSD	.93747
#1	4235.9
#2	4305.1
#3	4305.7

Sample Name: 160-9422-B-4-B MS Acquired: 12/5/2014 19:10:26 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2088	10.28	1.082	2.307	1.026	1.056	1.053	72.67	1.073
Stddev	.0004	.05	.011	.015	.007	.007	.013	.72	.013
%RSD	.1898	.4880	1.033	.6334	.6731	.6693	1.192	.9953	1.251
#1	.2083	10.27	1.070	2.301	1.025	1.054	1.039	71.84	1.057
#2	.2090	10.33	1.090	2.324	1.032	1.064	1.060	73.12	1.080
#3	.2090	10.23	1.087	2.296	1.019	1.050	1.061	73.07	1.081
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.155	3.286	1.102	10.66	19.28	1.136	64.89	1.068	.5508
Stddev	.013	.012	.014	.05	.14	.008	.19	.003	.0055
%RSD	1.108	.3528	1.271	.4910	.7243	.7134	.2959	.3184	.9943
#1	1.140	3.291	1.085	10.67	19.27	1.140	64.91	1.070	.5445
#2	1.161	3.294	1.109	10.71	19.43	1.142	65.07	1.069	.5543
#3	1.162	3.272	1.110	10.60	19.15	1.127	64.69	1.064	.5536
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	153.7	1.131	7.710	1.114	137.0	.5568	.5460	8.542	1.110
Stddev	.3	.012	.094	.009	1.8	.0101	.0066	.041	.010
%RSD	.1712	1.021	1.222	.8169	1.282	1.819	1.210	.4753	.9261
#1	153.7	1.118	7.601	1.104	135.0	.5452	.5386	8.544	1.098
#2	153.9	1.137	7.761	1.118	137.9	.5619	.5481	8.581	1.116
#3	153.4	1.139	7.768	1.121	138.1	.5634	.5513	8.500	1.116
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-4-B MS Acquired: 12/5/2014 19:10:26 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.259	1.085	1.038	.2223	1.101	1.051	1.130
Stddev	.009	.008	.008	.0019	.017	.006	.012
%RSD	.7093	.7343	.7389	.8547	1.533	.5874	1.093
#1	1.257	1.094	1.038	.2201	1.119	1.057	1.116
#2	1.268	1.082	1.046	.2234	1.099	1.051	1.138
#3	1.251	1.080	1.031	.2234	1.086	1.045	1.137
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4122.5
Stddev	14.0
%RSD	.33912
#1	4134.9
#2	4107.3
#3	4125.3

Sample Name: 160-9422-B-4-C MSD Acquired: 12/5/2014 19:14:00 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2180	10.70	1.129	2.419	1.073	1.096	1.062	72.89	1.118
Stddev	.0056	.09	.037	.017	.008	.012	.038	2.21	.037
%RSD	2.558	.8249	3.314	.7152	.7851	1.111	3.582	3.036	3.290
#1	.2210	10.78	1.157	2.431	1.082	1.107	1.091	74.36	1.146
#2	.2214	10.71	1.143	2.427	1.072	1.099	1.076	73.97	1.132
#3	.2115	10.60	1.087	2.399	1.065	1.083	1.019	70.35	1.077
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.199	3.393	1.145	11.01	19.75	1.191	64.40	1.104	.5562
Stddev	.037	.074	.039	.14	.17	.008	.82	.012	.0178
%RSD	3.091	2.179	3.384	1.226	.8668	.6566	1.269	1.056	3.208
#1	1.227	3.422	1.174	11.13	19.92	1.199	64.93	1.113	.5694
#2	1.212	3.449	1.159	11.05	19.76	1.190	64.81	1.108	.5632
#3	1.157	3.309	1.101	10.86	19.58	1.184	63.46	1.091	.5359
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	154.2	1.174	7.743	1.159	137.4	.5615	.5660	8.537	1.114
Stddev	.7	.037	.262	.037	4.8	.0214	.0224	.098	.035
%RSD	.4413	3.159	3.387	3.183	3.476	3.809	3.962	1.142	3.179
#1	154.8	1.201	7.948	1.188	141.3	.5779	.5843	8.627	1.140
#2	154.5	1.189	7.835	1.172	138.9	.5693	.5727	8.550	1.128
#3	153.5	1.131	7.447	1.118	132.1	.5373	.5410	8.433	1.074
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-4-C MSD Acquired: 12/5/2014 19:14:00 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.308	1.157	1.046	.2307	1.190	1.089	1.175
Stddev	.012	.029	.010	.0064	.027	.010	.038
%RSD	.8784	2.479	.9545	2.794	2.260	.8826	3.223
#1	1.319	1.169	1.055	.2345	1.184	1.094	1.203
#2	1.308	1.177	1.047	.2345	1.219	1.095	1.190
#3	1.296	1.124	1.035	.2233	1.167	1.077	1.132
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4127.9
Stddev	99.3
%RSD	2.4059
#1	4076.5
#2	4064.8
#3	4242.4

Sample Name: 160-9422-B-5-A Acquired: 12/5/2014 19:17:35 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0038	<.0000	.2699	.0010	.0001	.0023	60.38	.0023
Stddev	.0007	.0048	.0008	.0127	.0002	.0001	.0029	.78	.0002
%RSD	282.8	124.9	23.18	4.705	24.11	106.8	126.0	1.285	8.970
#1	.0000	-.0010	-.0040	.2609	.0012	.0001	.0038	59.65	.0020
#2	.0003	.0086	-.0041	.2643	.0010	.0000	-.0011	60.29	.0023
#3	-.0011	.0039	-.0026	.2844	.0008	.0000	.0042	61.19	.0024
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0045	2.212	.0064	.0382	8.665	.0999	53.00	.0151	.0029
Stddev	.0001	.028	.0006	.0016	.253	.0040	1.17	.0005	.0001
%RSD	1.740	1.285	9.076	4.276	2.924	4.030	2.218	3.138	5.020
#1	.0045	2.181	.0069	.0365	8.393	.0965	51.72	.0147	.0029
#2	.0046	2.220	.0058	.0383	8.709	.0989	53.25	.0150	.0027
#3	.0046	2.236	.0066	.0398	8.894	.1043	54.03	.0156	.0030
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	141.5	.0146	6.460	.0055	124.1	.0200	.0005	8.389	<.0000
Stddev	3.9	.0002	.088	.0012	1.9	.0005	.0004	.199	.0001
%RSD	2.762	1.136	1.356	22.36	1.534	2.397	78.53	2.368	13.07
#1	137.2	.0145	6.377	.0053	122.2	.0204	.0010	8.173	-.0007
#2	142.5	.0145	6.451	.0044	124.0	.0201	.0003	8.428	-.0007
#3	144.8	.0148	6.552	.0069	126.0	.0195	.0003	8.564	-.0006
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-5-A Acquired: 12/5/2014 19:17:35 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2035	.0073	.0025	<.0000	<.0000	.0035	.0261
Stddev	.0054	.0020	.0003	.0009	.0149	.0017	.0004
%RSD	2.638	27.43	13.96	49.33	933.9	49.08	1.449
#1	.1980	.0083	.0025	-.0008	.0091	.0017	.0257
#2	.2038	.0050	.0028	-.0025	.0048	.0051	.0261
#3	.2087	.0085	.0021	-.0024	-.0186	.0037	.0264
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4097.8
Stddev	53.9
%RSD	1.3164
#1	4158.3
#2	4080.2
#3	4054.8

Sample Name: 160-9422-B-6-A Acquired: 12/5/2014 19:21:30 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0039	<.0000	.2598	.0010	.0000	.0033	61.00	.0021
Stddev	.0004	.0060	.0011	.0053	.0002	.0000	.0020	.64	.0000
%RSD	4487.	153.4	23.07	2.027	15.97	115.3	62.56	1.057	1.765
#1	-.0004	.0086	-.0037	.2580	.0008	.0001	.0054	60.27	.0021
#2	.0003	.0061	-.0059	.2556	.0010	.0000	.0030	61.48	.0021
#3	.0001	-.0029	-.0047	.2657	.0012	.0000	.0013	61.26	.0021
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0058	2.273	.0052	.0080	8.489	.0957	52.01	.0114	.0029
Stddev	.0002	.014	.0003	.0010	.038	.0010	.06	.0004	.0001
%RSD	3.527	.6346	5.658	12.55	.4513	1.067	.1139	3.149	3.514
#1	.0055	2.257	.0050	.0087	8.459	.0947	52.03	.0111	.0030
#2	.0058	2.275	.0055	.0086	8.475	.0967	51.94	.0113	.0029
#3	.0059	2.286	.0050	.0069	8.532	.0956	52.06	.0118	.0028
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	135.2	.0147	6.655	.0033	125.8	.0200	.0015	8.180	<.0000
Stddev	2.1	.0000	.049	.0006	1.0	.0011	.0007	.033	.0002
%RSD	1.527	.2378	.7419	17.61	.7564	5.316	46.11	.4017	67.96
#1	134.8	.0147	6.602	.0027	124.8	.0213	.0011	8.175	-.0002
#2	137.5	.0146	6.700	.0038	126.7	.0196	.0010	8.151	-.0005
#3	133.4	.0147	6.663	.0034	125.9	.0193	.0023	8.216	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-6-A Acquired: 12/5/2014 19:21:30 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1979	.0098	.0025	.0005	<.0000	.0015	.0331
Stddev	.0012	.0039	.0010	.0002	.0108	.0026	.0002
%RSD	.6156	39.56	39.98	34.83	1341.	173.1	.4948
#1	.1975	.0120	.0029	.0006	-.0092	.0001	.0329
#2	.1970	.0119	.0031	.0003	-.0045	.0044	.0332
#3	.1993	.0053	.0013	.0007	.0113	-.0001	.0332
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4015.0
Stddev	14.7
%RSD	.36617
#1	4028.5
#2	3999.3
#3	4017.1

Sample Name: CCV Acquired: 12/5/2014 19:25:25 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.006**	**46.61**	**5.151**	**4.714**	**4.681**	**4.811**	**5.086**	**53.88**	**5.134**
Stddev	.007	.80	.122	.063	.134	.086	.137	.96	.116
%RSD	.6757	1.720	2.375	1.337	2.854	1.797	2.691	1.789	2.254
#1	1.000	47.53	5.293	4.775	4.825	4.902	5.244	54.99	5.268
#2	1.006	46.05	5.085	4.649	4.561	4.730	5.014	53.23	5.069
#3	1.014	46.24	5.077	4.719	4.656	4.801	5.001	53.41	5.066
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.261**	**5.232**	**5.089**	**48.30**	**48.20**	**4.693**	**49.65**	**4.844**	**1.030**
Stddev	.114	.015	.118	.77	.74	.075	.67	.080	.025
%RSD	2.166	.2895	2.326	1.595	1.531	1.608	1.358	1.644	2.432
#1	5.392	5.231	5.226	49.16	49.03	4.779	50.39	4.935	1.059
#2	5.191	5.217	5.018	47.68	47.61	4.635	49.06	4.788	1.017
#3	5.199	5.247	5.024	48.05	47.95	4.666	49.51	4.809	1.014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**47.72**	**5.283**	**53.43**	**5.287**	**50.66**	**1.018**	**1.021**	**4.736**	**5.288**
Stddev	.68	.117	1.17	.121	1.32	.023	.025	.064	.119
%RSD	1.425	2.206	2.191	2.290	2.609	2.268	2.406	1.346	2.249
#1	48.46	5.417	54.79	5.426	52.18	1.044	1.049	4.805	5.425
#2	47.13	5.215	52.75	5.220	50.01	1.005	1.007	4.680	5.221
#3	47.56	5.216	52.77	5.213	49.79	1.004	1.007	4.722	5.217
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: CCV Acquired: 12/5/2014 19:25:25 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.774**	**5.144**	**4.754**	**1.066**	**5.094**	**4.815**	**5.186**
Stddev	.075	.030	.073	.023	.018	.070	.121
%RSD	1.574	.5765	1.539	2.159	.3494	1.461	2.339
#1	4.859	5.139	4.834	1.093	5.081	4.895	5.326
#2	4.747	5.118	4.692	1.051	5.088	4.764	5.118
#3	4.716	5.176	4.735	1.055	5.115	4.787	5.114
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**4164.6**
Stddev	55.6
%RSD	1.3347
#1	4101.4
#2	4206.0
#3	4186.5

Sample Name: CCB Acquired: 12/5/2014 19:29:14 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	<.0000	.0144	.0006	.0005	<.0000	.0022	.0001
Stddev	.0005	.0151	.0008	.0048	.0003	.0001	.0023	.0008	.0000
%RSD	107.8	1397.	400.5	33.13	46.42	24.64	6678.	34.46	17.74
#1	.0001	-.0046	.0001	.0172	.0009	.0006	.0019	.0031	.0001
#2	-.0006	.0155	-.0011	.0089	.0007	.0005	-.0026	.0017	.0001
#3	-.0009	-.0141	.0004	.0170	.0003	.0004	.0006	.0019	.0002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0005	.0020	.0049	.0828	<.0000	<.0000	.0005	<.0000
Stddev	.0002	.0003	.0017	.0020	.0137	.0007	.0058	.0005	.0002
%RSD	655.3	61.02	87.31	41.65	16.53	61.24	845.6	93.59	30500.
#1	.0002	.0005	.0027	.0071	.0680	-.0016	-.0059	.0010	-.0002
#2	.0000	.0002	.0032	.0044	.0853	-.0014	.0055	.0003	.0001
#3	-.0002	.0008	.0000	.0031	.0950	-.0003	-.0016	.0001	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0042	.0003	.0020	.0005	.0143	<.0000	.0005	.0051	.0005
Stddev	.0099	.0003	.0012	.0005	.0014	.0008	.0001	.0034	.0004
%RSD	232.8	76.18	62.51	108.2	10.10	545.0	29.86	65.92	75.14
#1	.0110	.0006	.0031	-.0001	.0156	.0001	.0003	.0090	.0009
#2	-.0071	.0001	.0021	.0005	.0147	.0005	.0005	.0026	.0005
#3	.0089	.0004	.0007	.0010	.0127	-.0010	.0006	.0038	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Sample Name: CCB Acquired: 12/5/2014 19:29:14 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005	<.0000	<.0000	<.0000	<.0000	.0004	.0002
Stddev	.0001	.0043	.0001	.0002	.0169	.0028	.0001
%RSD	31.25	472.5	1060.	359.0	412.6	740.5	59.58
#1	.0006	.0013	.0000	.0000	-.0181	.0032	.0002
#2	.0004	-.0059	.0001	-.0002	.0147	.0004	.0003
#3	.0003	.0019	-.0001	.0001	-.0089	-.0024	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_3710
Units	Cts/S
Avg	4053.5
Stddev	85.4
%RSD	2.1076
#1	4038.7
#2	3976.4
#3	4145.4

Sample Name: 160-9422-B-7-A Acquired: 12/5/2014 19:33:11 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0072	.0000	.2016	.0016	.0000	<.0000	47.17	.0780
Stddev	.0003	.0060	.0008	.0115	.0001	.0000	.0018	1.74	.0028
%RSD	110.1	83.55	2534.	5.717	8.964	53.56	147.5	3.693	3.644
#1	-.0004	.0074	-.0009	.2071	.0017	.0001	.0005	49.02	.0811
#2	.0001	.0132	.0005	.1884	.0014	.0000	-.0030	45.56	.0755
#3	-.0005	.0011	.0006	.2094	.0016	.0000	-.0012	46.94	.0775
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0076	.5604	.0031	.0350	4.380	.0197	13.77	.1036	.0023
Stddev	.0002	.0196	.0009	.0021	.172	.0002	.55	.0047	.0001
%RSD	2.063	3.492	28.18	5.951	3.920	1.088	3.992	4.518	5.553
#1	.0078	.5803	.0036	.0363	4.503	.0197	14.26	.1071	.0024
#2	.0075	.5412	.0021	.0326	4.184	.0194	13.18	.0983	.0022
#3	.0076	.5596	.0037	.0360	4.453	.0198	13.88	.1055	.0023
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	14.41	.0160	4.379	.0049	15.54	.0064	.0002	9.642	.0001
Stddev	.54	.0007	.166	.0007	.62	.0009	.0020	.371	.0005
%RSD	3.728	4.616	3.792	15.10	4.001	14.51	952.3	3.852	470.2
#1	14.77	.0167	4.562	.0053	16.22	.0067	.0012	9.906	.0004
#2	13.79	.0152	4.238	.0053	15.00	.0054	-.0020	9.217	.0004
#3	14.68	.0160	4.336	.0040	15.39	.0072	.0015	9.802	-.0005
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-7-A Acquired: 12/5/2014 19:33:11 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0585	.0018	.0015	<.0000	.0008	.0001	.4939
Stddev	.0021	.0024	.0006	.0005	.0259	.0021	.0191
%RSD	3.571	132.7	40.04	21.46	3132.	2562.	3.860
#1	.0597	.0020	.0015	-.0017	-.0234	-.0022	.5148
#2	.0561	.0040	.0009	-.0027	-.0023	.0019	.4774
#3	.0596	-.0007	.0021	-.0025	.0281	.0006	.4896
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4054.4
Stddev	153.9
%RSD	3.7968
#1	3899.6
#2	4207.5
#3	4056.0

Sample Name: 160-9422-B-8-A Acquired: 12/5/2014 19:36:56 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**.0028**	**<.0000**	**.1963**	**.0012**	**.0001**	**.0012**	**46.61**	**.0763**
Stddev	.0003	.0220	.0007	.0030	.0001	.0000	.0028	.31	.0005
%RSD	569.7	791.5	90.24	1.534	4.589	91.48	235.9	.6573	.6374
#1	.0000	-.0139	.0000	.1950	.0013	.0000	.0044	46.71	.0765
#2	-.0003	-.0054	-.0009	.1941	.0012	.0000	-.0004	46.26	.0758
#3	.0004	.0277	-.0014	.1997	.0012	.0001	-.0005	46.85	.0767
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0091**	**.6280**	**.0017**	**.0069**	**4.114**	**.0192**	**13.62**	**.1122**	**.0024**
Stddev	.0003	.0049	.0014	.0018	.027	.0003	.13	.0011	.0002
%RSD	2.994	.7745	83.39	25.47	.6463	1.802	.9442	.9491	6.352
#1	.0091	.6315	.0033	.0084	4.131	.0190	13.76	.1132	.0025
#2	.0088	.6224	.0007	.0074	4.083	.0189	13.51	.1111	.0024
#3	.0094	.6299	.0011	.0050	4.126	.0196	13.58	.1124	.0022
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**14.02**	**.0151**	**4.571**	**.0027**	**15.41**	**.0081**	**.0012**	**9.792**	**.0003**
Stddev	.05	.0001	.028	.0005	.08	.0002	.0016	.036	.0001
%RSD	.3725	.9023	.6043	18.16	.5454	2.554	140.8	.3699	42.21
#1	14.07	.0152	4.587	.0022	15.41	.0082	.0001	9.832	.0004
#2	13.97	.0150	4.539	.0028	15.32	.0082	.0031	9.761	.0002
#3	14.04	.0152	4.588	.0032	15.49	.0079	.0003	9.785	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-8-A Acquired: 12/5/2014 19:36:56 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0579	.0023	.0016	.0003	.0037	.0029	.5999
Stddev	.0005	.0013	.0005	.0008	.0174	.0008	.0040
%RSD	.8885	57.69	29.91	296.8	468.9	27.34	.6719
#1	.0582	.0018	.0020	.0002	.0101	.0022	.6019
#2	.0573	.0013	.0011	-.0005	.0169	.0037	.5953
#3	.0582	.0039	.0018	.0012	-.0159	.0028	.6025
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4017.2
Stddev	44.9
%RSD	1.1174
#1	3970.8
#2	4060.4
#3	4020.3

Sample Name: 160-9422-B-9-A Acquired: 12/5/2014 19:40:40 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.1441	<.0000	.0990	.0237	.0000	.0013	58.04	.0711
Stddev	.0006	.0047	.0011	.0029	.0005	.0000	.0006	.72	.0007
%RSD	648.7	3.286	204.8	2.947	2.279	82.09	45.40	1.233	1.016
#1	.0001	.1415	-.0017	.0957	.0231	.0001	.0019	57.22	.0703
#2	.0004	.1496	.0000	.1001	.0238	.0000	.0007	58.49	.0718
#3	-.0007	.1412	.0002	.1013	.0241	.0000	.0014	58.42	.0711
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0019	.2277	.0087	1.754	3.261	.0204	14.80	.0775	.0016
Stddev	.0003	.0046	.0012	.034	.051	.0009	.25	.0017	.0002
%RSD	17.37	2.005	13.32	1.920	1.556	4.281	1.708	2.231	14.41
#1	.0020	.2226	.0091	1.715	3.203	.0196	14.51	.0756	.0015
#2	.0015	.2313	.0095	1.769	3.290	.0213	14.95	.0782	.0014
#3	.0022	.2292	.0074	1.777	3.291	.0203	14.94	.0788	.0018
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	15.40	.0091	1.344	.1323	13.92	.0061	<.0000	11.91	.0020
Stddev	.27	.0002	.016	.0005	.11	.0005	.0022	.23	.0003
%RSD	1.747	1.938	1.186	.3672	.8139	7.645	2129.	1.911	17.16
#1	15.09	.0089	1.326	.1324	13.81	.0056	.0024	11.65	.0018
#2	15.58	.0092	1.355	.1327	14.03	.0063	-.0014	12.04	.0024
#3	15.53	.0090	1.351	.1318	13.91	.0064	-.0013	12.05	.0018
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-9-A Acquired: 12/5/2014 19:40:40 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0870	<.0000	.0031	<.0000	<.0000	.0006	.5252
Stddev	.0015	.0028	.0008	.0006	.0152	.0027	.0048
%RSD	1.684	469.4	26.02	184.5	265.9	481.7	.9221
#1	.0853	-.0037	.0034	-.0008	-.0175	.0037	.5198
#2	.0878	.0017	.0037	.0003	.0114	-.0007	.5291
#3	.0879	.0002	.0022	-.0003	-.0110	-.0013	.5268
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3984.5
Stddev	33.8
%RSD	.84844
#1	4023.5
#2	3967.3
#3	3962.8

Sample Name: 160-9422-B-10-A Acquired: 12/5/2014 19:44:23 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0004**	**.0070**	**.0000**	**.0985**	**.0149**	**.0000**	**.0008**	**57.68**	**.0180**
Stddev	.0005	.0052	.0010	.0061	.0001	.0001	.0027	.53	.0003
%RSD	124.9	73.50	3155.	6.161	.3680	432.1	351.1	.9236	1.838
#1	-.0001	.0090	.0012	.0961	.0150	.0001	-.0022	57.57	.0178
#2	.0005	.0012	-.0003	.0939	.0150	-.0001	.0014	58.27	.0184
#3	.0009	.0109	-.0008	.1053	.0149	.0000	.0031	57.22	.0179
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0023**	**.1684**	**.0008**	**.0199**	**3.379**	**.0216**	**14.81**	**.0160**	**.0018**
Stddev	.0001	.0009	.0021	.0023	.019	.0006	.09	.0003	.0002
%RSD	6.274	.5401	259.3	11.37	.5549	2.785	.5886	2.093	9.606
#1	.0022	.1680	-.0005	.0182	3.367	.0209	14.72	.0156	.0017
#2	.0024	.1695	.0032	.0190	3.400	.0221	14.90	.0161	.0016
#3	.0023	.1678	-.0003	.0224	3.369	.0218	14.81	.0162	.0020
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**16.02**	**.0080**	**1.186**	**.0047**	**13.91**	**.0038**	**.0003**	**11.81**	**<.0000**
Stddev	.04	.0002	.011	.0005	.14	.0007	.0027	.07	.0002
%RSD	.2353	2.528	.9151	10.51	1.035	17.09	1019.	.6184	153.6
#1	16.00	.0081	1.183	.0045	13.89	.0033	.0033	11.73	-.0003
#2	16.07	.0081	1.197	.0043	14.07	.0046	-.0018	11.87	.0000
#3	16.01	.0078	1.176	.0052	13.78	.0036	-.0007	11.84	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-10-A Acquired: 12/5/2014 19:44:23 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0880	.0025	.0010	<.0000	.0008	.0022	.1748
Stddev	.0003	.0018	.0003	.0005	.0092	.0035	.0016
%RSD	.2994	72.23	33.72	94.15	1211.	157.7	.9034
#1	.0879	.0043	.0013	-.0010	.0065	-.0010	.1747
#2	.0883	.0025	.0007	-.0005	.0056	.0059	.1765
#3	.0878	.0007	.0009	.0000	-.0098	.0017	.1733
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4065.9
Stddev	19.7
%RSD	.48435
#1	4080.2
#2	4043.4
#3	4074.0

Sample Name: 160-9422-B-11-A Acquired: 12/5/2014 19:48:09 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0054	<.0000	.1677	.0022	.0000	.0024	67.04	.0151
Stddev	.0007	.0081	.0006	.0005	.0001	.0000	.0015	.29	.0002
%RSD	127.7	149.7	8.710	.3194	4.416	675.3	63.13	.4316	1.202
#1	-.0010	.0137	-.0067	.1672	.0022	.0000	.0037	67.25	.0153
#2	-.0009	-.0024	-.0074	.1683	.0021	.0000	.0007	66.71	.0149
#3	.0003	.0048	-.0062	.1676	.0023	.0000	.0028	67.16	.0151
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0015	3.130	.0065	.0901	5.843	.0962	44.12	.0975	.0204
Stddev	.0003	.020	.0003	.0027	.106	.0038	.47	.0016	.0003
%RSD	18.74	.6428	5.206	2.952	1.808	3.931	1.056	1.653	1.386
#1	.0017	3.145	.0063	.0899	5.803	.0953	43.99	.0970	.0207
#2	.0014	3.107	.0069	.0876	5.762	.0929	43.73	.0962	.0203
#3	.0012	3.137	.0063	.0929	5.962	.1003	44.64	.0993	.0201
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	123.8	.0092	4.074	.0029	105.6	.0286	.0003	12.14	<.0000
Stddev	2.4	.0003	.021	.0007	.7	.0005	.0006	.22	.0003
%RSD	1.941	3.027	.5281	22.53	.7041	1.828	211.1	1.809	119.0
#1	122.8	.0093	4.094	.0030	106.1	.0281	.0009	12.06	.0001
#2	122.1	.0089	4.051	.0022	104.7	.0291	.0002	11.98	-.0004
#3	126.6	.0095	4.075	.0035	105.9	.0288	-.0002	12.39	-.0004
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-11-A Acquired: 12/5/2014 19:48:09 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2690	.0117	.0022	.0000	.0101	.0016	.6298
Stddev	.0056	.0007	.0003	.0003	.0173	.0049	.0045
%RSD	2.093	6.297	11.35	1426.	171.9	297.8	.7136
#1	.2656	.0117	.0020	-.0004	-.0099	.0032	.6329
#2	.2660	.0124	.0022	.0002	.0194	.0055	.6246
#3	.2755	.0109	.0025	.0003	.0207	-.0038	.6317
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3977.0
Stddev	19.0
%RSD	.47700
#1	3980.7
#2	3993.9
#3	3956.5

Sample Name: 160-9422-B-12-A Acquired: 12/5/2014 19:52:04 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0255	<.0000	.1574	.0021	<.0000	.0040	61.17	.0143
Stddev	.0005	.0026	.0004	.0046	.0002	.0000	.0003	1.35	.0003
%RSD	209.7	10.25	8.227	2.902	8.680	142.2	7.894	2.207	2.226
#1	-.0007	.0238	-.0049	.1601	.0022	.0000	.0043	62.71	.0147
#2	-.0001	.0285	-.0052	.1600	.0020	.0000	.0037	60.61	.0141
#3	.0002	.0243	-.0057	.1521	.0019	-.0001	.0039	60.19	.0142
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0025	2.968	.0042	.0065	5.482	.0900	40.60	.0997	.0191
Stddev	.0001	.055	.0003	.0014	.109	.0012	.92	.0021	.0004
%RSD	3.626	1.862	5.955	21.77	1.993	1.311	2.270	2.149	2.087
#1	.0026	3.032	.0040	.0068	5.608	.0913	41.63	.1022	.0194
#2	.0024	2.934	.0045	.0050	5.423	.0894	40.30	.0989	.0191
#3	.0024	2.939	.0041	.0078	5.414	.0892	39.87	.0981	.0187
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	117.3	.0086	3.818	.0033	96.37	.0234	.0007	11.45	<.0000
Stddev	3.1	.0004	.091	.0002	2.25	.0013	.0008	.26	.0003
%RSD	2.624	4.084	2.379	4.694	2.335	5.586	103.2	2.275	45.17
#1	120.8	.0090	3.920	.0035	98.92	.0249	.0003	11.75	-.0004
#2	115.1	.0084	3.791	.0032	95.55	.0230	.0016	11.32	-.0008
#3	115.9	.0083	3.744	.0033	94.65	.0223	.0003	11.29	-.0010
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-12-A Acquired: 12/5/2014 19:52:04 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2542	.0130	.0020	.0002	.0125	.0025	.6061
Stddev	.0052	.0030	.0006	.0001	.0116	.0023	.0133
%RSD	2.045	22.83	31.15	43.57	92.42	92.20	2.191
#1	.2602	.0106	.0020	.0002	.0240	.0036	.6211
#2	.2514	.0120	.0026	.0003	.0128	.0040	.6012
#3	.2511	.0163	.0014	.0001	.0008	-.0002	.5960
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4194.2
Stddev	75.6
%RSD	1.8015
#1	4108.6
#2	4222.5
#3	4251.5

Sample Name: 160-9422-B-13-A Acquired: 12/5/2014 19:55:58 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0757	<.0000	.1540	.0122	<.0000	.0063	60.22	.1388
Stddev	.0006	.0006	.0016	.0022	.0003	.0000	.0008	.89	.0016
%RSD	211.3	.7792	26.57	1.414	2.440	1282.	13.21	1.477	1.145
#1	-.0009	.0764	-.0069	.1541	.0124	.0000	.0072	59.29	.1371
#2	.0003	.0755	-.0072	.1518	.0125	.0000	.0063	61.07	.1403
#3	-.0003	.0753	-.0042	.1562	.0119	.0000	.0056	60.30	.1390
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0019	3.999	.0085	3.985	5.378	.0942	41.15	.1813	.0175
Stddev	.0001	.077	.0009	.060	.106	.0012	.63	.0028	.0001
%RSD	7.437	1.921	10.56	1.500	1.979	1.327	1.533	1.540	.6889
#1	.0020	3.940	.0075	4.021	5.456	.0949	41.39	.1828	.0174
#2	.0019	4.086	.0092	4.018	5.420	.0949	41.62	.1829	.0176
#3	.0017	3.971	.0087	3.916	5.256	.0927	40.43	.1780	.0176
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	120.1	.0101	3.924	.1092	96.92	.0322	.0007	11.82	.0006
Stddev	4.6	.0001	.060	.0029	1.47	.0016	.0018	.18	.0005
%RSD	3.831	.6793	1.518	2.695	1.517	5.108	263.2	1.542	78.73
#1	122.0	.0101	3.862	.1063	95.43	.0339	.0019	11.94	.0011
#2	123.4	.0102	3.981	.1122	98.37	.0306	.0015	11.92	.0002
#3	114.9	.0101	3.927	.1090	96.96	.0321	-.0014	11.61	.0005
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-13-A Acquired: 12/5/2014 19:55:58 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2797	.0189	.0035	<.0000	.0091	.0029	4.128
Stddev	.0049	.0011	.0001	.0002	.0119	.0012	.064
%RSD	1.734	5.556	3.185	29.56	131.4	41.05	1.542
#1	.2832	.0194	.0034	-.0010	-.0029	.0020	4.066
#2	.2818	.0177	.0034	-.0006	.0210	.0024	4.193
#3	.2742	.0197	.0036	-.0008	.0091	.0042	4.126
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4003.7
Stddev	56.0
%RSD	1.3992
#1	4040.2
#2	3939.2
#3	4031.7

Sample Name: 160-9422-B-14-A Acquired: 12/5/2014 19:59:49 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0002	<.0000	.1496	.0044	<.0000	.0041	57.56	.0308
Stddev	.0010	.0108	.0006	.0016	.0002	.0000	.0008	.15	.0002
%RSD	244.0	5874.	12.51	1.038	4.945	317.0	19.24	.2592	.7265
#1	.0005	-.0079	-.0044	.1485	.0043	.0000	.0049	57.71	.0310
#2	-.0014	-.0040	-.0053	.1490	.0047	.0000	.0039	57.41	.0307
#3	-.0002	.0124	-.0042	.1514	.0044	.0000	.0034	57.56	.0306
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0021	2.934	.0044	.0073	5.146	.0900	40.17	.1144	.0176
Stddev	.0002	.022	.0001	.0017	.032	.0005	.20	.0002	.0002
%RSD	8.366	.7530	1.972	22.79	.6163	.5987	.4955	.1967	1.038
#1	.0023	2.960	.0044	.0055	5.161	.0900	40.23	.1143	.0174
#2	.0020	2.919	.0045	.0087	5.109	.0905	39.95	.1144	.0175
#3	.0020	2.925	.0043	.0079	5.166	.0895	40.33	.1147	.0178
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	115.5	.0083	2.106	.0031	92.66	.0245	.0005	11.38	<.0000
Stddev	1.4	.0003	.010	.0008	.42	.0025	.0035	.02	.0001
%RSD	1.217	3.160	.4613	26.07	.4580	10.05	754.6	.2172	28.40
#1	113.8	.0086	2.117	.0039	93.15	.0217	.0012	11.37	-.0004
#2	116.3	.0082	2.099	.0024	92.43	.0258	-.0034	11.37	-.0003
#3	116.2	.0081	2.102	.0028	92.40	.0260	.0035	11.41	-.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-14-A Acquired: 12/5/2014 19:59:49 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2586	.0129	.0023	<.0000	.0020	.0016	.9130
Stddev	.0010	.0018	.0004	.0014	.0073	.0020	.0033
%RSD	.4022	14.15	18.12	109.5	370.8	125.5	.3612
#1	.2584	.0112	.0028	-.0012	-.0049	.0038	.9165
#2	.2577	.0128	.0022	.0001	.0097	-.0002	.9099
#3	.2598	.0148	.0020	-.0026	.0011	.0013	.9127
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4077.2
Stddev	16.6
%RSD	.40791
#1	4067.0
#2	4096.4
#3	4068.3

Sample Name: 160-9422-B-15-A Acquired: 12/5/2014 20:03:39 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0921	<.0000	1.350	.0009	<.0000	.0161	17.86	.1869
Stddev	.0008	.0032	.0008	.014	.0002	.0000	.0032	.21	.0027
%RSD	2921.	3.461	4.353	1.065	21.29	27.64	19.85	1.191	1.435
#1	-.0010	.0928	-.0184	1.351	.0007	.0000	.0197	18.01	.1887
#2	.0007	.0949	-.0177	1.336	.0008	.0000	.0139	17.62	.1838
#3	.0001	.0886	-.0193	1.364	.0011	.0000	.0145	17.96	.1881
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0201	10.33	.0241	2.467	20.61	.0106	3.859	.2158	.0024
Stddev	.0002	.07	.0015	.032	.25	.0009	.041	.0028	.0002
%RSD	1.151	.6777	6.154	1.280	1.234	8.878	1.049	1.297	8.387
#1	.0204	10.27	.0255	2.478	20.76	.0108	3.856	.2180	.0021
#2	.0199	10.33	.0225	2.431	20.32	.0095	3.820	.2126	.0025
#3	.0201	10.41	.0243	2.492	20.77	.0114	3.901	.2168	.0025
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.769	.0574	47.42	.0447	4.781	.0848	<.0000	6.055	<.0000
Stddev	.095	.0007	.59	.0010	.051	.0029	.0018	.079	.0001
%RSD	1.399	1.139	1.252	2.250	1.067	3.372	2886.	1.301	159.1
#1	6.833	.0580	47.89	.0451	4.822	.0875	.0019	6.097	.0000
#2	6.660	.0567	46.75	.0435	4.724	.0818	-.0006	5.964	.0000
#3	6.814	.0575	47.61	.0454	4.798	.0851	-.0015	6.104	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-15-A Acquired: 12/5/2014 20:03:39 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0096	.0336	.0086	.0007	<.0000	.0102	3.459
Stddev	.0001	.0049	.0001	.0011	.0097	.0028	.038
%RSD	.7313	14.58	1.633	141.3	208.1	27.49	1.111
#1	.0097	.0350	.0086	.0013	.0063	.0120	3.491
#2	.0095	.0282	.0088	.0014	-.0080	.0117	3.417
#3	.0096	.0377	.0085	-.0005	-.0122	.0070	3.471
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4305.0
Stddev	25.9
%RSD	.60258
#1	4300.3
#2	4333.0
#3	4281.7

Sample Name: 160-9422-B-16-A Acquired: 12/5/2014 20:07:20 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	<.0000	<.0000	.3494	.0000	.0000	.0055	1.719	.0395
Stddev	.0012	.0087	.0012	.0065	.0001	.0000	.0022	.063	.0014
%RSD	335.9	212.0	23.05	1.847	357.0	17140.	39.85	3.666	3.571
#1	.0016	-.0097	-.0038	.3568	.0001	.0000	.0070	1.663	.0382
#2	.0000	-.0085	-.0060	.3449	.0000	.0000	.0030	1.707	.0393
#3	-.0006	.0059	-.0052	.3465	.0000	.0000	.0064	1.787	.0410
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0075	2.713	.0093	.0037	3.327	.0000	.4966	.0234	.0006
Stddev	.0003	.006	.0005	.0012	.051	.0005	.0209	.0005	.0001
%RSD	4.342	.2271	4.947	31.49	1.540	3351.	4.213	2.316	11.00
#1	.0072	2.720	.0095	.0050	3.372	.0005	.5200	.0240	.0005
#2	.0075	2.709	.0088	.0029	3.338	-.0004	.4902	.0230	.0007
#3	.0079	2.709	.0096	.0032	3.271	.0000	.4796	.0231	.0006
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.004	.0165	14.57	.0010	.9517	.0263	.0014	.6862	<.0000
Stddev	.032	.0006	.50	.0007	.0286	.0014	.0008	.0087	.0002
%RSD	3.151	3.620	3.398	65.99	3.005	5.194	54.09	1.274	156.6
#1	1.037	.0159	14.15	.0017	.9271	.0250	.0017	.6939	-.0004
#2	1.003	.0164	14.45	.0010	.9448	.0262	.0006	.6767	.0001
#3	.9734	.0171	15.11	.0004	.9831	.0277	.0020	.6879	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-16-A Acquired: 12/5/2014 20:07:20 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	.0081	.0002	.0010	<.0000	.0031	.1907
Stddev	.0001	.0027	.0010	.0011	.0140	.0042	.0067
%RSD	13.91	32.96	468.3	112.3	122.2	135.5	3.503
#1	.0005	.0112	.0008	.0019	-.0014	-.0016	.1851
#2	.0004	.0060	-.0009	-.0002	-.0275	.0064	.1889
#3	.0004	.0072	.0008	.0012	-.0055	.0045	.1981
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4271.0
Stddev	54.3
%RSD	1.2721
#1	4208.8
#2	4295.3
#3	4309.0

Sample Name: CCV Acquired: 12/5/2014 20:11:08 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.041**	**49.57**	**5.271**	**5.001**	**5.036**	**5.056**	**5.232**	**54.68**	**5.296**
Stddev	.020	1.31	.180	.120	.098	.177	.183	1.64	.174
%RSD	1.898	2.635	3.419	2.398	1.943	3.511	3.499	2.993	3.283
#1	1.058	50.56	5.433	5.089	5.062	5.199	5.397	56.18	5.455
#2	1.045	50.07	5.305	5.049	5.118	5.112	5.264	54.93	5.323
#3	1.019	48.09	5.077	4.864	4.928	4.857	5.035	52.94	5.110
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.390**	**5.420**	**5.266**	**51.18**	**51.37**	**5.027**	**51.55**	**5.102**	**1.072**
Stddev	.176	.091	.175	1.27	1.31	.129	1.35	.129	.036
%RSD	3.263	1.683	3.320	2.483	2.553	2.563	2.619	2.519	3.328
#1	5.550	5.509	5.426	52.17	52.34	5.123	52.59	5.198	1.104
#2	5.417	5.424	5.292	51.61	51.89	5.077	52.03	5.152	1.079
#3	5.202	5.327	5.079	49.74	49.88	4.881	50.02	4.956	1.034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**50.76**	**5.419**	**54.29**	**5.432**	**51.83**	**1.042**	**1.041**	**4.983**	**5.436**
Stddev	1.42	.172	1.82	.173	1.79	.035	.037	.130	.180
%RSD	2.808	3.173	3.351	3.189	3.454	3.399	3.592	2.611	3.315
#1	51.88	5.576	55.98	5.590	53.43	1.074	1.076	5.082	5.597
#2	51.24	5.447	54.53	5.460	52.16	1.046	1.046	5.031	5.469
#3	49.15	5.235	52.36	5.247	49.89	1.004	1.002	4.835	5.241
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: CCV Acquired: 12/5/2014 20:11:08 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.031**	**5.294**	**5.057**	**1.092**	**5.322**	**5.078**	**5.326**
Stddev	.153	.096	.131	.035	.097	.136	.178
%RSD	3.049	1.807	2.595	3.185	1.825	2.681	3.351
#1	5.172	5.373	5.159	1.124	5.426	5.176	5.489
#2	5.053	5.322	5.102	1.098	5.307	5.136	5.353
#3	4.868	5.188	4.909	1.055	5.234	4.923	5.135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**4002.9**
Stddev	84.5
%RSD	2.1098
#1	3938.3
#2	3972.0
#3	4098.5

Sample Name: CCB Acquired: 12/5/2014 20:14:56 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0002	.0003	.0137	.0007	.0004	<.0000	.0014	.0001
Stddev	.0003	.0020	.0028	.0033	.0001	.0001	.0015	.0002	.0002
%RSD	46.91	859.7	803.6	23.72	11.69	25.88	264.3	11.30	143.5
#1	-.0003	-.0016	.0035	.0100	.0007	.0004	.0002	.0015	.0000
#2	-.0008	.0000	-.0018	.0149	.0007	.0004	.0004	.0012	.0001
#3	-.0007	.0023	-.0007	.0162	.0006	.0003	-.0023	.0014	.0003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0015	.0006	.0028	.0538	.0002	.0050	.0002	<.0000
Stddev	.0002	.0003	.0015	.0009	.0147	.0009	.0055	.0002	.0002
%RSD	159.8	22.77	266.1	30.03	27.26	544.1	110.5	100.5	631.4
#1	-.0001	.0013	-.0007	.0034	.0403	.0012	.0113	.0000	.0001
#2	.0003	.0012	.0022	.0019	.0516	-.0005	.0009	.0004	.0000
#3	.0002	.0018	.0001	.0033	.0694	-.0002	.0028	.0002	-.0002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0005	.0017	.0011	.0079	.0005	.0004	.0039	.0002
Stddev	.0105	.0001	.0006	.0011	.0014	.0016	.0008	.0055	.0002
%RSD	11570.	24.55	36.33	102.6	17.89	326.9	201.9	141.8	95.97
#1	.0055	.0005	.0017	.0002	.0095	.0015	-.0003	-.0024	.0000
#2	.0065	.0006	.0023	.0007	.0070	-.0013	.0012	.0076	.0004
#3	-.0122	.0004	.0011	.0023	.0071	.0013	.0003	.0064	.0002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Sample Name: CCB Acquired: 12/5/2014 20:14:56 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	.0017	.0010	<.0000	<.0000	.0000	.0001
Stddev	.0001	.0004	.0003	.0008	.0043	.0039	.0000
%RSD	36.81	24.18	31.45	49.94	139.3	9129.	52.05
#1	.0004	.0017	.0007	-.0008	-.0079	-.0010	.0001
#2	.0003	.0021	.0010	-.0017	-.0013	.0043	.0001
#3	.0002	.0013	.0013	-.0024	.0000	-.0032	.0000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_3710
Units	Cts/S
Avg	4024.2
Stddev	16.0
%RSD	.39869
#1	4011.1
#2	4042.1
#3	4019.5

Sample Name: 160-9422-B-17-A Acquired: 12/5/2014 20:18:53 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0796	<.0000	.1099	.0007	.0000	.0071	4.640	.2740
Stddev	.0002	.0054	.0015	.0027	.0001	.0001	.0005	.059	.0038
%RSD	212.1	6.777	20.72	2.417	14.69	165.5	7.173	1.278	1.375
#1	.0002	.0830	-.0083	.1100	.0006	.0001	.0069	4.628	.2728
#2	.0002	.0734	-.0081	.1072	.0007	.0000	.0067	4.588	.2710
#3	-.0001	.0825	-.0056	.1125	.0008	.0000	.0077	4.705	.2782
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0067	3.739	.0123	1.858	2.793	.0031	1.746	.0653	.0006
Stddev	.0002	.046	.0019	.039	.079	.0000	.029	.0010	.0003
%RSD	3.013	1.234	15.22	2.087	2.834	.8885	1.645	1.513	44.48
#1	.0069	3.735	.0139	1.867	2.832	.0031	1.740	.0654	.0009
#2	.0066	3.696	.0103	1.816	2.702	.0031	1.722	.0643	.0005
#3	.0065	3.788	.0128	1.892	2.846	.0031	1.778	.0662	.0004
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.348	.0070	16.76	.0302	2.033	.0281	<.0000	.7972	<.0000
Stddev	.074	.0001	.18	.0006	.024	.0014	.0015	.0292	.0003
%RSD	2.212	1.314	1.100	2.129	1.158	4.943	743.3	3.658	250.6
#1	3.359	.0071	16.75	.0299	2.044	.0275	.0009	.8128	.0000
#2	3.270	.0069	16.57	.0298	2.006	.0271	.0004	.7636	-.0005
#3	3.417	.0071	16.94	.0309	2.049	.0297	-.0019	.8153	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-17-A Acquired: 12/5/2014 20:18:53 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0065	.0139	.0019	<.0000	<.0000	.0005	2.456
Stddev	.0001	.0034	.0005	.0006	.0042	.0028	.032
%RSD	1.875	24.21	28.29	56.62	130.4	600.1	1.289
#1	.0066	.0170	.0020	-.0012	-.0080	-.0025	2.450
#2	.0064	.0144	.0023	-.0003	-.0003	.0007	2.427
#3	.0066	.0103	.0013	-.0014	-.0014	.0032	2.490
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4163.5
Stddev	48.2
%RSD	1.1566
#1	4146.8
#2	4217.8
#3	4126.0

Sample Name: 160-9422-B-18-A Acquired: 12/5/2014 20:22:38 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0004**	**.0139**	**<.0000**	**.5739**	**.0005**	**.0000**	**.0148**	**25.80**	**.1387**
Stddev	.0002	.0001	.0008	.0053	.0000	.0000	.0005	.25	.0015
%RSD	38.10	.9651	4.229	.9174	2.971	345.3	3.511	.9722	1.056
#1	.0003	.0139	-.0181	.5742	.0004	.0000	.0151	26.09	.1404
#2	.0004	.0137	-.0196	.5684	.0005	.0000	.0142	25.64	.1376
#3	.0006	.0140	-.0183	.5789	.0004	.0000	.0151	25.67	.1382
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0283**	**10.02**	**.0273**	**.2668**	**16.16**	**.0219**	**12.22**	**.1358**	**.0030**
Stddev	.0006	.16	.0008	.0031	.20	.0014	.07	.0016	.0002
%RSD	2.009	1.583	2.749	1.180	1.208	6.272	.5819	1.164	5.463
#1	.0289	10.20	.0278	.2664	16.12	.0227	12.26	.1346	.0032
#2	.0282	9.946	.0277	.2639	15.99	.0203	12.14	.1353	.0029
#3	.0278	9.916	.0265	.2701	16.37	.0227	12.26	.1376	.0031
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**23.68**	**.0245**	**56.82**	**.0039**	**16.20**	**.0810**	**<.0000**	**7.508**	**<.0000**
Stddev	.22	.0004	.55	.0005	.15	.0008	.0006	.046	.0001
%RSD	.9416	1.572	.9707	13.19	.9551	.9804	33.62	.6151	18.92
#1	23.62	.0250	57.45	.0043	16.38	.0811	-.0019	7.489	-.0006
#2	23.50	.0242	56.44	.0033	16.09	.0817	-.0025	7.474	-.0004
#3	23.93	.0245	56.56	.0039	16.13	.0801	-.0012	7.561	-.0006
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-18-A Acquired: 12/5/2014 20:22:38 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0186	.0297	.0030	<.0000	.0016	.0042	1.148
Stddev	.0001	.0036	.0001	.0006	.0045	.0021	.011
%RSD	.7321	12.06	4.907	418.5	283.9	49.26	.9652
#1	.0186	.0307	.0030	-.0006	-.0024	.0038	1.160
#2	.0184	.0327	.0028	.0005	.0064	.0065	1.140
#3	.0187	.0257	.0031	-.0003	.0008	.0024	1.143
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4052.6
Stddev	40.4
%RSD	.99800
#1	4005.9
#2	4076.6
#3	4075.3

Sample Name: MB 160-160135/1-A Acquired: 12/5/2014 20:26:22 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	.0000	.0049	.0003	<.0000	.0005	.1702	.0001
Stddev	.0005	.0158	.0008	.0071	.0001	.0001	.0021	.0005	.0000
%RSD	131.7	1124.	44170.	143.6	26.71	577.2	473.0	.2947	58.88
#1	-.0010	-.0143	-.0003	.0092	.0004	-.0001	.0013	.1707	.0001
#2	-.0002	.0162	.0009	.0089	.0003	.0001	.0020	.1702	.0000
#3	.0000	-.0061	-.0006	-.0033	.0002	.0000	-.0020	.1697	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0020	<.0000	.0106	.0751	<.0000	.0063	.0003	.0009
Stddev	.0002	.0007	.0008	.0033	.0185	.0001	.0071	.0001	.0001
%RSD	206.1	37.13	196.9	31.12	24.70	13.35	112.0	40.99	17.02
#1	.0000	.0013	.0004	.0143	.0607	-.0009	.0017	.0002	.0010
#2	-.0004	.0020	-.0011	.0084	.0685	-.0008	.0145	.0003	.0007
#3	.0000	.0028	-.0005	.0089	.0960	-.0007	.0028	.0005	.0008
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0204	.0006	.0038	.0003	.0990	<.0000	.0009	.0530	.0008
Stddev	.0043	.0001	.0010	.0006	.0021	.0004	.0017	.0061	.0005
%RSD	21.21	11.97	26.72	186.8	2.166	45.26	185.0	11.50	57.08
#1	.0154	.0006	.0048	.0008	.0997	-.0004	.0008	.0484	.0012
#2	.0230	.0007	.0039	.0006	.0965	-.0010	-.0007	.0599	.0003
#3	.0228	.0006	.0027	-.0004	.1006	-.0011	.0027	.0507	.0009
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: MB 160-160135/1-A Acquired: 12/5/2014 20:26:22 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0013	<.0000	<.0000	<.0000	.0020	.0417
Stddev	.0001	.0014	.0006	.0004	.0113	.0028	.0004
%RSD	47.41	104.1	370.8	17.80	71.38	143.2	.8766
#1	.0001	.0013	-.0003	-.0019	-.0115	.0038	.0421
#2	.0002	.0028	-.0007	-.0017	-.0285	.0034	.0415
#3	.0001	.0000	.0005	-.0024	-.0072	-.0013	.0414
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3959.8
Stddev	14.0
%RSD	.35415
#1	3947.4
#2	3975.0
#3	3957.0

Sample Name: LCS 160-160135/2-A Acquired: 12/5/2014 20:30:16 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2083**	**10.21**	**1.099**	**2.013**	**1.041**	**1.048**	**1.064**	**12.37**	**1.104**
Stddev	.0021	.05	.012	.018	.005	.008	.012	.14	.011
%RSD	1.014	.4832	1.054	.8688	.4965	.7211	1.118	1.150	1.004
#1	.2059	10.19	1.091	2.002	1.039	1.044	1.055	12.24	1.094
#2	.2093	10.16	1.094	2.005	1.036	1.043	1.059	12.34	1.101
#3	.2098	10.26	1.112	2.034	1.046	1.056	1.077	12.52	1.116
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.219**	**1.158**	**1.145**	**10.69**	**10.42**	**1.044**	**10.34**	**1.058**	**.5536**
Stddev	.015	.009	.014	.06	.02	.004	.08	.004	.0056
%RSD	1.266	.8015	1.191	.5525	.1912	.3594	.7901	.3603	1.017
#1	1.205	1.147	1.133	10.65	10.42	1.044	10.28	1.057	.5491
#2	1.216	1.163	1.141	10.65	10.40	1.040	10.31	1.054	.5517
#3	1.236	1.164	1.160	10.75	10.43	1.047	10.44	1.062	.5599
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.34**	**1.186**	**1.186**	**1.201**	**10.35**	**.5268**	**.5543**	**.0315**	**1.123**
Stddev	.06	.013	.013	.014	.10	.0041	.0063	.0078	.013
%RSD	.6267	1.098	1.086	1.161	.9646	.7818	1.139	24.86	1.112
#1	10.34	1.175	1.178	1.188	10.27	.5229	.5528	.0279	1.112
#2	10.28	1.183	1.180	1.200	10.33	.5263	.5488	.0261	1.121
#3	10.41	1.201	1.201	1.216	10.46	.5311	.5612	.0405	1.137
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LCS 160-160135/2-A Acquired: 12/5/2014 20:30:16 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.068	1.122	.9893	.2441	1.188	1.037	1.137
Stddev	.007	.011	.0042	.0031	.011	.004	.013
%RSD	.6247	.9543	.4272	1.287	.9270	.3379	1.130
#1	1.065	1.110	.9869	.2420	1.183	1.041	1.127
#2	1.063	1.130	.9870	.2427	1.181	1.036	1.133
#3	1.075	1.125	.9942	.2477	1.201	1.034	1.152
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4041.4
Stddev	36.1
%RSD	.89391
#1	4070.2
#2	4053.3
#3	4000.9

Sample Name: LCSD 160-160135/3-A Acquired: 12/5/2014 20:33:41 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2009**	**9.437**	**1.030**	**1.907**	**.9564**	**.9700**	**1.014**	**11.65**	**1.035**
Stddev	.0047	.095	.016	.027	.0092	.0098	.012	.17	.013
%RSD	2.345	1.008	1.529	1.403	.9613	1.015	1.204	1.471	1.272
#1	.2061	9.461	1.045	1.920	.9571	.9753	1.027	11.82	1.048
#2	.1994	9.517	1.031	1.924	.9652	.9760	1.013	11.65	1.035
#3	.1971	9.332	1.014	1.876	.9468	.9586	1.003	11.48	1.022
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.134**	**1.056**	**1.061**	**9.868**	**9.636**	**.9656**	**9.778**	**.9839**	**.5119**
Stddev	.015	.027	.014	.108	.140	.0116	.152	.0112	.0075
%RSD	1.314	2.555	1.338	1.097	1.449	1.202	1.558	1.141	1.460
#1	1.150	1.087	1.074	9.953	9.675	.9606	9.912	.9916	.5194
#2	1.132	1.045	1.062	9.904	9.752	.9789	9.809	.9890	.5119
#3	1.120	1.037	1.046	9.746	9.481	.9573	9.612	.9710	.5045
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.682**	**1.101**	**1.115**	**1.125**	**9.853**	**.4935**	**.5178**	**.0333**	**1.054**
Stddev	.084	.016	.014	.015	.119	.0046	.0057	.0048	.015
%RSD	.8719	1.430	1.228	1.339	1.211	.9384	1.093	14.34	1.381
#1	9.674	1.117	1.128	1.141	9.977	.4975	.5236	.0357	1.069
#2	9.771	1.100	1.116	1.123	9.845	.4946	.5175	.0365	1.052
#3	9.603	1.085	1.101	1.111	9.738	.4884	.5123	.0278	1.040
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LCSD 160-160135/3-A Acquired: 12/5/2014 20:33:41 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9843	1.046	.9226	.2327	1.075	.9691	1.061
Stddev	.0097	.027	.0102	.0014	.038	.0088	.013
%RSD	.9873	2.607	1.106	.6113	3.510	.9091	1.175
#1	.9860	1.078	.9252	.2341	1.114	.9735	1.074
#2	.9931	1.034	.9312	.2328	1.074	.9749	1.060
#3	.9739	1.027	.9113	.2313	1.039	.9590	1.049
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4115.6
Stddev	76.9
%RSD	1.8680
#1	4031.9
#2	4131.9
#3	4183.1

Sample Name: 160-9422-B-16-H Acquired: 12/5/2014 20:37:07 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	<.0000	.4566	.0005	.0001	.0040	2.047	.0471
Stddev	.0002	.0029	.0007	.0023	.0002	.0000	.0003	.022	.0004
%RSD	34.15	271.0	11.27	.5024	40.46	49.34	6.578	1.087	.8798
#1	-.0004	-.0037	-.0057	.4589	.0004	.0001	.0037	2.023	.0467
#2	-.0003	.0021	-.0066	.4567	.0007	.0001	.0041	2.067	.0475
#3	-.0006	-.0017	-.0071	.4543	.0003	.0000	.0042	2.051	.0471
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0088	3.453	.0093	.0065	4.140	.0017	.6439	.0302	.0006
Stddev	.0001	.066	.0020	.0001	.088	.0011	.0265	.0003	.0001
%RSD	.9901	1.921	21.63	1.263	2.128	65.52	4.122	1.078	18.10
#1	.0089	3.382	.0106	.0066	4.053	.0020	.6245	.0299	.0007
#2	.0087	3.513	.0103	.0064	4.229	.0005	.6741	.0305	.0005
#3	.0088	3.464	.0070	.0064	4.139	.0027	.6330	.0303	.0007
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.246	.0196	17.34	.0010	1.128	.0276	.0011	.8856	.0001
Stddev	.011	.0004	.18	.0017	.009	.0014	.0007	.0092	.0003
%RSD	.8674	2.227	1.051	161.8	.8331	5.246	61.91	1.035	242.3
#1	1.240	.0192	17.14	.0016	1.118	.0260	.0017	.8755	.0003
#2	1.259	.0200	17.50	.0023	1.136	.0281	.0004	.8880	-.0003
#3	1.240	.0196	17.38	-.0009	1.129	.0288	.0012	.8933	.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-16-H Acquired: 12/5/2014 20:37:07 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0007	.0109	.0002	<.0000	<.0000	.0004	.2288
Stddev	.0000	.0024	.0005	.0013	.0107	.0015	.0021
%RSD	5.849	22.36	320.3	232.7	280.7	350.7	.9115
#1	.0006	.0093	.0008	-.0017	-.0116	-.0011	.2265
#2	.0007	.0098	-.0001	-.0008	-.0083	.0006	.2304
#3	.0007	.0138	-.0002	.0008	.0084	.0018	.2296
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3955.8
Stddev	63.8
%RSD	1.6123
#1	4027.3
#2	3904.6
#3	3935.5

Sample Name: 160-9422-B-16-H SD Acquired: 12/5/2014 20:40:53 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=50

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0009	<.0000	.0861	.0002	.0000	.0000	.3687	.0086
Stddev	.0005	.0096	.0007	.0040	.0001	.0000	.0012	.0020	.0001
%RSD	1557.	1120.	35.03	4.697	80.78	460.9	4827.	.5324	1.283
#1	.0005	.0049	-.0020	.0819	.0003	.0000	.0001	.3700	.0087
#2	-.0005	-.0101	-.0025	.0900	.0001	.0000	-.0012	.3696	.0085
#3	-.0001	.0078	-.0012	.0865	.0000	.0000	.0011	.3664	.0085
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0014	.6265	.0010	.0008	.8021	<.0000	.1141	.0054	.0001
Stddev	.0001	.0030	.0028	.0004	.0226	.0002	.0101	.0001	.0002
%RSD	5.252	.4845	283.0	50.08	2.816	46.57	8.809	1.898	150.0
#1	.0015	.6299	.0041	.0009	.7979	-.0002	.1057	.0054	.0003
#2	.0014	.6254	-.0012	.0010	.7818	-.0005	.1252	.0054	-.0001
#3	.0015	.6242	.0000	.0003	.8264	-.0007	.1114	.0056	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2330	.0036	3.140	.0015	.2055	.0050	.0020	.1574	.0001
Stddev	.0028	.0002	.014	.0010	.0027	.0011	.0006	.0071	.0003
%RSD	1.208	5.718	.4550	63.26	1.335	22.72	30.89	4.517	254.4
#1	.2298	.0038	3.156	.0004	.2069	.0060	.0023	.1635	.0005
#2	.2340	.0038	3.135	.0019	.2072	.0052	.0025	.1591	-.0001
#3	.2351	.0034	3.129	.0023	.2023	.0038	.0013	.1496	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-16-H SD Acquired: 12/5/2014 20:40:53 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=50

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0012	.0004	<.0000	<.0000	.0027	.0464
Stddev	.0000	.0026	.0009	.0009	.0139	.0006	.0003
%RSD	40.02	213.2	244.2	60.25	114.9	23.25	.7330
#1	.0001	.0042	.0014	-.0017	.0030	.0021	.0468
#2	.0001	-.0008	-.0002	-.0023	-.0151	.0025	.0465
#3	.0002	.0003	-.0001	-.0005	-.0242	.0034	.0461
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4160.3
Stddev	5.8
%RSD	.14031
#1	4154.7
#2	4159.8
#3	4166.4

Sample Name: 160-9422-B-16-H PDS Acquired: 12/5/2014 20:44:42 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1048**	**1.991**	**.0966**	**.9385**	**.4968**	**.0523**	**1.901**	**13.92**	**.0993**
Stddev	.0005	.008	.0004	.0073	.0035	.0005	.018	.11	.0007
%RSD	.5202	.4182	.4344	.7819	.7012	.8966	.9217	.7952	.7161
#1	.1042	1.982	.0965	.9306	.4929	.0518	1.885	13.83	.0985
#2	.1048	1.994	.0962	.9451	.4979	.0527	1.919	14.04	.0999
#3	.1053	1.998	.0971	.9398	.4996	.0525	1.898	13.89	.0994
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.5931**	**3.365**	**.2894**	**1.060**	**54.83**	**.5017**	**10.95**	**.1844**	**.4533**
Stddev	.0051	.032	.0038	.007	.33	.0039	.09	.0007	.0041
%RSD	.8589	.9355	1.312	.6198	.6058	.7803	.8207	.3814	.9068
#1	.5879	3.341	.2863	1.053	54.45	.4973	10.84	.1836	.4488
#2	.5981	3.401	.2936	1.065	54.97	.5030	10.99	.1845	.4568
#3	.5932	3.353	.2883	1.063	55.07	.5047	11.01	.1850	.4542
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**11.16**	**.4861**	**19.64**	**.1149**	**54.72**	**.1209**	**.1563**	**4.823**	**1.149**
Stddev	.08	.0042	.17	.0015	.57	.0019	.0024	.044	.012
%RSD	.7490	.8545	.8448	1.317	1.035	1.562	1.541	.9142	1.053
#1	11.07	.4818	19.49	.1139	54.13	.1193	.1536	4.773	1.138
#2	11.22	.4901	19.82	.1167	55.26	.1230	.1575	4.839	1.162
#3	11.21	.4863	19.62	.1143	54.76	.1204	.1579	4.857	1.149
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-16-H PDS Acquired: 12/5/2014 20:44:42 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0513	1.335	.2051	.2326	5.462	.4998	.4475
Stddev	.0004	.014	.0014	.0015	.065	.0044	.0035
%RSD	.6838	1.040	.6953	.6589	1.181	.8903	.7853
#1	.0509	1.324	.2039	.2316	5.424	.4947	.4444
#2	.0515	1.351	.2049	.2343	5.536	.5015	.4513
#3	.0515	1.331	.2067	.2318	5.425	.5031	.4468
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3944.0
Stddev	22.1
%RSD	.55940
#1	3967.3
#2	3923.4
#3	3941.4

Sample Name: 160-9422-B-19-E Acquired: 12/5/2014 20:48:13 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0197	<.0000	.0481	.0004	.0000	.0028	3.045	.1085
Stddev	.0002	.0076	.0013	.0045	.0002	.0001	.0024	.125	.0042
%RSD	40.35	38.37	31.36	9.248	41.06	1455.	85.75	4.115	3.827
#1	-.0002	.0253	-.0035	.0523	.0004	.0000	.0011	2.929	.1049
#2	-.0006	.0111	-.0035	.0434	.0002	.0001	.0055	3.027	.1075
#3	-.0004	.0227	-.0058	.0487	.0005	.0000	.0017	3.178	.1131
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0026	1.496	.0061	.8328	1.435	.0013	1.058	.0287	.0003
Stddev	.0003	.014	.0008	.0100	.031	.0005	.020	.0006	.0001
%RSD	12.83	.9227	12.71	1.203	2.172	40.23	1.921	2.049	45.00
#1	.0024	1.483	.0060	.8273	1.418	.0015	1.057	.0289	.0001
#2	.0024	1.495	.0070	.8268	1.416	.0007	1.039	.0280	.0004
#3	.0030	1.510	.0054	.8444	1.471	.0017	1.079	.0291	.0004
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.867	.0039	6.747	.0128	1.423	.0124	.0010	.6020	.0001
Stddev	.030	.0003	.278	.0003	.055	.0012	.0008	.0069	.0004
%RSD	1.604	8.538	4.117	2.025	3.834	9.695	85.95	1.154	383.9
#1	1.841	.0039	6.505	.0125	1.376	.0114	.0009	.5947	.0003
#2	1.862	.0036	6.687	.0131	1.410	.0121	.0002	.6085	.0003
#3	1.900	.0043	7.051	.0128	1.483	.0138	.0018	.6027	-.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-19-E Acquired: 12/5/2014 20:48:13 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0034	.0048	.0010	<.0000	<.0000	<.0000	.9979
Stddev	.0001	.0033	.0008	.0007	.0123	.0023	.0388
%RSD	3.164	68.68	81.05	355.7	148.1	887.8	3.891
#1	.0033	.0019	.0011	.0005	.0031	.0006	.9651
#2	.0034	.0042	.0001	-.0010	-.0214	.0015	.9877
#3	.0035	.0084	.0018	-.0002	-.0066	-.0029	1.041
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3976.6
Stddev	42.5
%RSD	1.0676
#1	3998.5
#2	4003.6
#3	3927.6

Sample Name: 160-9422-B-20-C Acquired: 12/5/2014 20:51:58 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	<.0000	.0233	.0003	<.0000	.0021	1.956	.0004
Stddev	.0009	.0044	.0003	.0014	.0000	.0000	.0029	.052	.0003
%RSD	275.7	40.72	44.85	6.045	12.41	315.9	136.7	2.687	68.53
#1	-.0003	-.0139	-.0003	.0239	.0003	.0000	.0055	1.909	.0001
#2	.0006	-.0058	-.0007	.0217	.0004	.0000	.0008	1.946	.0006
#3	-.0012	-.0129	-.0009	.0243	.0004	.0000	.0001	2.013	.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	.0536	.0003	.0030	.7678	.0006	.7131	.0050	<.0000
Stddev	.0003	.0003	.0026	.0019	.0321	.0005	.0257	.0002	.0002
%RSD	89.11	.4759	878.8	61.78	4.183	84.28	3.609	3.776	252.7
#1	.0004	.0533	.0027	.0048	.7324	.0002	.7233	.0050	.0002
#2	.0006	.0536	-.0025	.0032	.7760	.0004	.6838	.0048	-.0001
#3	.0000	.0539	.0006	.0011	.7951	.0011	.7322	.0052	-.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.218	.0011	.2690	.0002	.9879	.0012	.0024	.5108	<.0000
Stddev	.020	.0002	.0056	.0012	.0248	.0014	.0016	.0087	.0006
%RSD	1.622	13.92	2.067	569.4	2.511	120.9	67.81	1.707	1553.
#1	1.240	.0011	.2642	.0013	.9664	.0012	.0031	.5086	-.0001
#2	1.201	.0010	.2677	-.0010	.9822	-.0002	.0005	.5034	-.0006
#3	1.213	.0013	.2751	.0003	1.015	.0026	.0035	.5204	.0005
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-20-C Acquired: 12/5/2014 20:51:58 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0014	<.0000	.0000	<.0000	<.0000	.0005	.0402
Stddev	.0001	.0025	.0006	.0007	.0032	.0006	.0011
%RSD	4.527	170.0	2547.	35.04	23.70	112.0	2.628
#1	.0015	-.0041	.0004	-.0014	-.0122	.0011	.0392
#2	.0013	.0009	-.0007	-.0018	-.0170	.0003	.0401
#3	.0014	-.0012	.0004	-.0027	-.0110	.0001	.0413
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3946.0
Stddev	25.3
%RSD	.64149
#1	3930.2
#2	3975.2
#3	3932.5

Sample Name: CCV Acquired: 12/5/2014 20:55:52 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.063**	**49.41**	**5.355**	**5.032**	**4.880**	**5.011**	**5.294**	F **56.96**	**5.385**
Stddev	.005	.60	.052	.060	.092	.105	.049	.49	.048
%RSD	.5055	1.217	.9653	1.188	1.891	2.092	.9237	.8526	.8925
#1	1.064	49.01	5.388	4.983	4.775	4.903	5.324	57.16	5.417
#2	1.057	49.13	5.295	5.013	4.917	5.018	5.238	56.40	5.330
#3	1.068	50.10	5.381	5.099	4.948	5.112	5.321	57.30	5.409
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
Value								50.00	
Range								10.00%	

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F **5.519**	**5.454**	**5.325**	**50.66**	**50.91**	**4.995**	**52.16**	**5.100**	**1.074**
Stddev	.050	.029	.060	.64	.54	.056	.82	.072	.010
%RSD	.9136	.5330	1.126	1.261	1.057	1.126	1.566	1.409	.9696
#1	5.546	5.469	5.356	50.17	50.50	4.952	51.66	5.055	1.081
#2	5.461	5.421	5.256	50.43	50.71	4.974	51.73	5.062	1.062
#3	5.550	5.473	5.363	51.38	51.52	5.059	53.11	5.183	1.079
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	5.000								
Range	10.00%								

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**51.05**	F **5.533**	F **55.87**	F **5.512**	**52.33**	**1.056**	**1.057**	**5.002**	F **5.538**
Stddev	.45	.049	.51	.045	.50	.011	.013	.071	.049
%RSD	.8903	.8855	.9057	.8193	.9506	.9970	1.251	1.413	.8865
#1	50.65	5.560	56.17	5.534	52.70	1.065	1.067	4.952	5.561
#2	50.95	5.476	55.29	5.460	51.76	1.045	1.042	4.971	5.482
#3	51.54	5.562	56.16	5.542	52.52	1.059	1.062	5.083	5.572
Check ?	Chk Pass	Chk Fail	Chk Fail	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
Value		5.000	50.00	5.000					5.000
Range		10.00%	10.00%	10.00%					10.00%

Sample Name: CCV Acquired: 12/5/2014 20:55:52 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.035	5.430	5.018	F 1.118	5.310	5.105	5.426
Stddev	.076	.041	.060	.010	.043	.072	.046
%RSD	1.515	.7590	1.201	.8807	.8000	1.420	.8449
#1	5.022	5.470	4.968	1.123	5.334	5.066	5.452
#2	4.967	5.388	5.001	1.107	5.261	5.060	5.373
#3	5.117	5.433	5.085	1.125	5.335	5.189	5.452
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value				1.000			
Range				10.00%			

Int. Std.	Y_3710
Units	Cts/S
Avg	3932.6
Stddev	44.3
%RSD	1.1261
#1	3941.9
#2	3971.5
#3	3884.4

Sample Name: CCB Acquired: 12/5/2014 20:59:40 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	.0012	.0180	.0008	.0003	.0011	.0010	.0002
Stddev	.0008	.0024	.0005	.0019	.0002	.0000	.0018	.0005	.0002
%RSD	268.4	41.50	41.23	10.55	25.53	10.25	165.5	54.96	80.14
#1	.0006	-.0030	.0017	.0194	.0007	.0004	.0020	.0012	.0000
#2	-.0006	-.0072	.0007	.0188	.0008	.0003	.0023	.0014	.0003
#3	-.0010	-.0071	.0014	.0158	.0011	.0003	-.0010	.0004	.0002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0011	.0003	.0027	.0752	<.0000	.0057	.0002	.0001
Stddev	.0001	.0013	.0016	.0029	.0161	.0005	.0100	.0002	.0002
%RSD	80.78	118.8	463.4	106.0	21.42	191.9	176.4	86.65	259.1
#1	.0001	.0025	.0015	.0053	.0590	-.0005	.0162	.0000	.0001
#2	.0002	.0004	-.0015	.0031	.0912	-.0006	.0044	.0003	.0003
#3	.0000	.0003	.0010	-.0003	.0753	.0003	-.0037	.0004	-.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0003	.0024	.0008	.0052	<.0000	.0011	.0016	.0003
Stddev	.0058	.0002	.0011	.0002	.0029	.0009	.0006	.0078	.0004
%RSD	127.5	54.23	46.59	27.81	56.76	128.1	58.55	485.9	134.7
#1	.0008	.0005	.0012	.0009	.0084	-.0013	.0015	.0018	.0007
#2	-.0038	.0003	.0027	.0009	.0027	.0003	.0015	.0093	.0000
#3	-.0106	.0002	.0034	.0005	.0044	-.0011	.0004	-.0063	.0002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Sample Name: CCB Acquired: 12/5/2014 20:59:40 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	<.0000	.0003	<.0000	<.0000	.0015	.0002
Stddev	.0001	.0015	.0010	.0006	.0079	.0032	.0001
%RSD	19.80	93.73	296.9	32.84	50.70	214.9	65.45
#1	.0004	-.0026	.0014	-.0016	-.0247	.0027	.0004
#2	.0004	-.0023	.0001	-.0015	-.0103	-.0021	.0002
#3	.0003	.0001	-.0005	-.0026	-.0118	.0039	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_3710
Units	Cts/S
Avg	3979.9
Stddev	27.9
%RSD	.70148
#1	3950.9
#2	3982.1
#3	4006.6

Sample Name: 160-9422-B-21-C Acquired: 12/5/2014 21:03:38 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000**	**<.0000**	**<.0000**	**.1056**	**.0003**	**.0000**	**.0093**	**.5719**	**.0020**
Stddev	.0011	.0054	.0015	.0054	.0001	.0000	.0017	.0282	.0001
%RSD	4997.	86.83	10.43	5.080	14.94	81.06	18.63	4.939	4.060
#1	.0001	-.0046	-.0131	.1015	.0003	.0000	.0088	.5441	.0021
#2	.0011	-.0019	-.0145	.1116	.0004	.0000	.0112	.5710	.0019
#3	-.0011	-.0124	-.0162	.1036	.0004	.0001	.0078	.6005	.0019
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0099**	**7.077**	**.0174**	**.0140**	**13.81**	**.0150**	**.1149**	**.0018**	**.0027**
Stddev	.0005	.047	.0014	.0018	.05	.0007	.0079	.0002	.0002
%RSD	4.782	.6628	8.203	13.15	.3729	4.955	6.859	12.24	7.290
#1	.0094	7.028	.0166	.0161	13.75	.0142	.1169	.0018	.0025
#2	.0098	7.121	.0167	.0133	13.85	.0155	.1062	.0016	.0028
#3	.0104	7.083	.0191	.0126	13.83	.0155	.1215	.0021	.0029
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**60.44**	**.0024**	**33.32**	**.0027**	**9.432**	**.0692**	**<.0000**	**.2849**	**<.0000**
Stddev	.43	.0002	1.85	.0007	.527	.0071	.0012	.0043	.0002
%RSD	.7141	8.287	5.536	25.39	5.589	10.19	225.4	1.497	23.09
#1	60.03	.0022	31.54	.0034	8.910	.0619	-.0008	.2800	-.0006
#2	60.42	.0024	33.21	.0020	9.422	.0697	-.0017	.2878	-.0008
#3	60.89	.0026	35.22	.0028	9.964	.0760	.0008	.2869	-.0009
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-21-C Acquired: 12/5/2014 21:03:38 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	.0234	.0017	.0003	<.0000	.0004	.0304
Stddev	.0001	.0025	.0008	.0003	.0126	.0020	.0016
%RSD	15.22	10.88	45.77	95.30	460.7	497.6	5.128
#1	.0004	.0224	.0025	.0007	.0081	.0024	.0288
#2	.0004	.0263	.0009	.0001	.0002	-.0016	.0304
#3	.0005	.0216	.0017	.0003	-.0165	.0004	.0320
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3908.3
Stddev	27.9
%RSD	.71360
#1	3894.8
#2	3889.6
#3	3940.3

Sample Name: 160-9422-B-22-C Acquired: 12/5/2014 21:07:26 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	<.0000	<.0000	.1240	.0002	.0000	.0129	.4860	.0017
Stddev	.0005	.0078	.0009	.0049	.0001	.0000	.0006	.0087	.0001
%RSD	585.1	73.38	5.543	3.974	33.55	32.45	4.927	1.784	6.663
#1	.0000	-.0039	-.0168	.1296	.0001	.0001	.0126	.4760	.0017
#2	-.0004	-.0193	-.0153	.1218	.0002	.0000	.0125	.4916	.0015
#3	.0005	-.0088	-.0152	.1205	.0003	.0000	.0136	.4905	.0018
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0113	8.446	.0161	.0029	16.75	.0191	.1100	.0017	.0031
Stddev	.0001	.130	.0015	.0025	.28	.0010	.0027	.0003	.0001
%RSD	.5756	1.536	9.124	85.69	1.663	5.298	2.422	15.68	4.466
#1	.0113	8.422	.0167	.0045	16.61	.0202	.1088	.0014	.0031
#2	.0113	8.586	.0144	.0000	17.07	.0185	.1081	.0019	.0030
#3	.0114	8.330	.0172	.0041	16.57	.0184	.1130	.0019	.0033
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	74.71	.0024	37.62	.0024	10.47	.0766	<.0000	.3377	<.0000
Stddev	.99	.0001	.59	.0013	.17	.0013	.0012	.0081	.0005
%RSD	1.326	4.462	1.565	56.52	1.583	1.680	83.71	2.405	261.0
#1	74.19	.0024	36.94	.0035	10.29	.0758	-.0015	.3471	-.0007
#2	75.85	.0023	38.05	.0009	10.60	.0761	-.0002	.3339	-.0001
#3	74.09	.0025	37.86	.0027	10.52	.0781	-.0025	.3323	.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-22-C Acquired: 12/5/2014 21:07:26 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	.0241	.0016	.0008	<.0000	.0016	.0246
Stddev	.0000	.0011	.0002	.0003	.0040	.0023	.0004
%RSD	11.65	4.429	11.85	33.88	9.694	145.5	1.639
#1	.0003	.0231	.0014	.0006	-.0458	.0036	.0241
#2	.0002	.0240	.0018	.0012	-.0405	.0020	.0249
#3	.0003	.0252	.0016	.0007	-.0379	-.0009	.0248
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3957.0
Stddev	69.8
%RSD	1.7638
#1	3964.5
#2	3883.8
#3	4022.7

Sample Name: MB Acquired: 12/5/2014 21:11:13 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	.0002	.0021	.0002	<.0000	.0009	<.0000	<.0000
Stddev	.0003	.0040	.0005	.0016	.0001	.0000	.0024	.0008	.0001
%RSD	81.95	62.71	248.1	74.82	36.54	45.93	264.7	63.61	277.8
#1	-.0003	-.0023	.0004	.0030	.0003	.0000	.0031	-.0004	-.0002
#2	-.0006	-.0103	.0005	.0003	.0002	.0000	.0012	-.0013	.0000
#3	-.0001	-.0067	-.0003	.0031	.0001	.0000	-.0016	-.0019	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0023	<.0000	.0003	.0764	<.0000	<.0000	.0000	<.0000
Stddev	.0002	.0003	.0012	.0020	.0121	.0005	.0064	.0005	.0002
%RSD	62.32	14.00	257.6	676.7	15.83	77.87	32.38	858600.	177.6
#1	-.0002	.0027	-.0013	.0025	.0696	-.0006	-.0143	-.0005	-.0002
#2	-.0005	.0020	.0009	-.0002	.0904	-.0011	-.0269	.0001	.0001
#3	-.0002	.0023	-.0010	-.0014	.0693	-.0002	-.0184	.0004	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0106	.0002	.0017	3.321	.0045	<.0000	.0001	.0015	.0005
Stddev	.0044	.0002	.0016	.009	.0016	.0003	.0015	.0040	.0005
%RSD	41.51	101.8	97.45	.2699	34.91	27.76	1963.	265.1	103.7
#1	.0131	.0000	.0021	3.314	.0032	-.0006	-.0015	.0060	.0008
#2	.0131	.0003	.0030	3.331	.0040	-.0011	.0014	-.0013	-.0001
#3	.0055	.0002	-.0001	3.317	.0063	-.0010	.0003	-.0002	.0008
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: MB Acquired: 12/5/2014 21:11:13 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	.0000	.0001	<.0000	.0013	.0027
Stddev	.0001	.0040	.0009	.0003	.0074	.0033	.0000
%RSD	404.7	488.5	2641.	220.0	29.43	265.0	1.483
#1	-.0001	.0032	-.0003	.0002	-.0322	.0051	.0027
#2	.0000	-.0008	-.0006	-.0002	-.0263	-.0010	.0027
#3	.0000	-.0049	.0010	.0003	-.0174	-.0003	.0027
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3985.9
Stddev	10.0
%RSD	.25104
#1	3986.4
#2	3975.7
#3	3995.7

Sample Name: LCS Acquired: 12/5/2014 21:15:06 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	.0000	.0058	.0002	<.0000	.0023	<.0000	<.0000
Stddev	.0002	.0060	.0016	.0029	.0000	.0001	.0022	.0007	.0001
%RSD	348.8	52.35	5990.	49.47	10.91	1201.	92.29	53.11	55.15
#1	-.0001	-.0181	.0008	.0054	.0003	.0001	.0034	-.0022	-.0002
#2	-.0002	-.0095	.0010	.0031	.0002	.0000	-.0001	-.0009	-.0002
#3	.0002	-.0066	-.0018	.0088	.0002	-.0001	.0038	-.0009	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0006	.0029	.0031	.0750	<.0000	.0018	.0001	<.0000
Stddev	.0001	.0011	.0004	.0007	.0113	.0007	.0143	.0002	.0002
%RSD	701.3	174.5	13.09	22.92	15.00	56.09	781.1	234.9	413.4
#1	.0001	-.0003	.0029	.0038	.0770	-.0021	-.0147	.0004	.0001
#2	-.0001	.0003	.0025	.0031	.0629	-.0009	.0102	-.0001	.0000
#3	-.0001	.0019	.0033	.0024	.0851	-.0008	.0100	.0000	-.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0040	.0001	.0006	3.297	.0019	<.0000	<.0000	.0017	.0002
Stddev	.0109	.0002	.0002	.010	.0021	.0010	.0005	.0050	.0004
%RSD	272.1	195.3	35.20	.3050	110.2	63.91	139.2	300.8	177.1
#1	.0166	.0004	.0007	3.305	.0038	-.0019	-.0001	.0040	-.0002
#2	-.0020	.0001	.0007	3.300	.0021	-.0023	-.0009	-.0041	.0007
#3	-.0026	-.0001	.0003	3.286	-.0003	-.0004	.0000	.0051	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LCS Acquired: 12/5/2014 21:15:06 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	<.0000	<.0000	<.0000	<.0000	.0021	.0024
Stddev	.0000	.0012	.0004	.0014	.0179	.0023	.0000
%RSD	85.65	50.17	101.9	94.42	136.1	107.9	1.744
#1	.0000	-.0036	-.0001	-.0027	.0066	.0032	.0024
#2	.0000	-.0021	-.0002	.0000	-.0282	.0036	.0023
#3	.0000	-.0013	-.0009	-.0018	-.0177	-.0005	.0024
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3993.4
Stddev	11.0
%RSD	.27435
#1	3990.1
#2	3984.5
#3	4005.6

Sample Name: LCSD Acquired: 12/5/2014 21:18:58 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	<.0000	<.0000	.0000	.0000	<.0000	<.0000	<.0000
Stddev	.0003	.0035	.0007	.0004	.0002	.0000	.0004	.0002	.0000
%RSD	70.72	53.42	203.5	81.28	1328.	1301.	34.81	16.84	65.40
#1	-.0002	-.0065	.0003	-.0002	.0000	.0000	-.0015	-.0016	-.0001
#2	-.0004	-.0099	-.0011	-.0008	-.0001	.0001	-.0007	-.0016	.0000
#3	-.0008	-.0030	-.0002	-.0003	.0002	.0000	-.0014	-.0012	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0006	.0016	.0025	.0469	.0001	<.0000	<.0000	<.0000
Stddev	.0001	.0008	.0011	.0020	.0163	.0002	.0047	.0002	.0002
%RSD	41.37	123.9	70.79	77.48	34.75	386.8	54.27	131.9	135.2
#1	-.0002	-.0001	.0006	.0021	.0281	-.0002	-.0137	-.0004	.0001
#2	-.0004	.0014	.0028	.0047	.0548	.0001	-.0045	-.0001	-.0002
#3	-.0002	.0006	.0014	.0008	.0576	.0003	-.0075	.0000	-.0004
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0031	<.0000	<.0000	3.141	.0014	.0004	<.0000	.0028	.0001
Stddev	.0079	.0002	.0003	.024	.0021	.0007	.0021	.0048	.0005
%RSD	249.6	698.4	444.0	.7769	155.3	152.4	262.3	170.3	405.2
#1	-.0038	.0001	.0002	3.162	.0024	.0009	-.0032	.0067	-.0002
#2	.0117	-.0003	.0000	3.147	.0028	.0007	.0006	-.0025	-.0001
#3	.0016	.0000	-.0004	3.114	-.0011	-.0003	.0002	.0042	.0006
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LCSD Acquired: 12/5/2014 21:18:58 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	.0001	.0002	<.0000	.0025	.0024
Stddev	.0001	.0026	.0006	.0006	.0085	.0042	.0001
%RSD	148.3	242.3	451.6	382.1	50.72	164.6	3.843
#1	-.0001	.0011	.0006	.0003	-.0263	-.0002	.0025
#2	-.0001	-.0003	-.0006	.0007	-.0143	.0005	.0023
#3	.0000	-.0039	.0004	-.0005	-.0098	.0073	.0024
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4120.2
Stddev	26.6
%RSD	.64580
#1	4097.0
#2	4114.4
#3	4149.3

Sample Name: 9216-A-1 Acquired: 12/5/2014 21:22:53 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	<.0000	.0021	.0001	<.0000	.0018	.0019	.0001
Stddev	.0005	.0065	.0007	.0016	.0001	.0000	.0002	.0005	.0001
%RSD	144.5	63.25	305.3	77.98	125.4	66.37	8.687	28.66	111.2
#1	-.0008	-.0116	-.0006	.0035	.0002	.0000	.0019	.0014	.0001
#2	.0002	-.0161	.0006	.0003	-.0001	.0000	.0016	.0018	.0000
#3	-.0004	-.0032	-.0007	.0024	.0002	.0000	.0019	.0024	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0008	.0028	<.0000	.0675	<.0000	.0105	<.0000	<.0000
Stddev	.0002	.0006	.0014	.0021	.0257	.0015	.0018	.0003	.0000
%RSD	235.6	70.68	51.85	314.2	38.08	158.5	17.08	114.0	32.80
#1	.0000	.0014	.0043	-.0003	.0614	-.0027	.0084	.0000	-.0001
#2	.0001	.0007	.0015	.0012	.0454	-.0004	.0115	-.0006	-.0001
#3	-.0003	.0003	.0026	-.0029	.0957	.0002	.0115	-.0002	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0036	.0002	<.0000	2.921	.0028	<.0000	<.0000	.0085	.0004
Stddev	.0126	.0000	.0003	.063	.0010	.0003	.0014	.0051	.0004
%RSD	349.7	29.94	78.02	2.144	34.95	35.74	125.3	60.37	86.06
#1	-.0094	.0002	-.0002	2.993	.0018	-.0007	-.0014	.0031	.0000
#2	.0045	.0001	-.0003	2.890	.0030	-.0011	.0004	.0134	.0006
#3	.0158	.0001	-.0008	2.879	.0037	-.0006	-.0023	.0090	.0006
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 9216-A-1 Acquired: 12/5/2014 21:22:53 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	<.0000	<.0000	<.0000	<.0000	.0020	.0023
Stddev	.0000	.0003	.0004	.0007	.0162	.0014	.0001
%RSD	12.55	27.15	78.90	269.1	231.1	71.26	5.901
#1	.0003	-.0012	.0000	.0005	-.0074	.0017	.0025
#2	.0004	-.0007	-.0006	-.0007	-.0230	.0007	.0023
#3	.0003	-.0009	-.0007	-.0005	.0093	.0035	.0022
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4109.3
Stddev	80.2
%RSD	1.9505
#1	4017.6
#2	4166.1
#3	4144.2

Sample Name: 9216-A-2 Acquired: 12/5/2014 21:26:48 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	<.0000	.0008	.0002	<.0000	<.0000	.0014	.0000
Stddev	.0009	.0055	.0005	.0042	.0001	.0000	.0025	.0002	.0001
%RSD	167.5	90.59	57.97	515.7	81.30	184.1	14050.	12.78	323.8
#1	.0005	.0003	-.0003	-.0040	.0000	.0000	.0010	.0016	.0000
#2	-.0010	-.0088	-.0013	.0037	.0001	.0000	-.0029	.0015	.0001
#3	-.0011	-.0096	-.0009	.0027	.0003	-.0001	.0018	.0012	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0010	.0025	.0018	.0661	<.0000	<.0000	<.0000	<.0000
Stddev	.0002	.0006	.0013	.0011	.0211	.0007	.0113	.0003	.0001
%RSD	111.8	63.72	53.70	59.01	31.98	36.87	492.2	268.9	60.65
#1	-.0004	.0017	.0037	.0025	.0891	-.0015	-.0141	.0001	-.0001
#2	.0000	.0004	.0027	.0024	.0617	-.0015	-.0012	.0001	-.0001
#3	-.0002	.0009	.0011	.0006	.0475	-.0027	.0084	-.0005	-.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0084	.0001	.0004	3.322	.0038	<.0000	.0002	.0359	.0002
Stddev	.0060	.0001	.0004	.025	.0035	.0013	.0016	.0102	.0004
%RSD	71.57	84.24	107.0	.7616	91.50	158.0	743.0	28.49	179.2
#1	.0100	.0001	.0008	3.299	.0076	-.0001	.0019	.0261	.0003
#2	.0018	.0000	.0000	3.349	.0031	.0000	-.0012	.0350	-.0002
#3	.0135	.0001	.0003	3.317	.0007	-.0023	-.0001	.0465	.0005
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 9216-A-2 Acquired: 12/5/2014 21:26:48 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0001	.0001	<.0000	<.0000	<.0000	.0024
Stddev	.0001	.0024	.0002	.0008	.0141	.0041	.0001
%RSD	43.80	3075.	424.9	65.98	86.32	380.3	5.178
#1	.0002	.0028	.0003	-.0021	-.0084	.0030	.0023
#2	.0001	-.0008	-.0001	-.0007	-.0327	-.0053	.0024
#3	.0001	-.0018	.0000	-.0007	-.0080	-.0010	.0025
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3947.8
Stddev	18.0
%RSD	.45504
#1	3965.7
#2	3929.7
#3	3948.0

Sample Name: 9216-A-3 Acquired: 12/5/2014 21:30:43 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0007	.0004	.0006	.0001	<.0000	.0019	<.0000	<.0000
Stddev	.0005	.0064	.0005	.0019	.0001	.0000	.0007	.0004	.0000
%RSD	97.44	934.5	135.1	315.3	171.3	1420.	35.05	73.11	67.92
#1	.0000	.0071	.0009	.0026	.0001	.0000	.0023	-.0009	.0000
#2	-.0009	-.0058	-.0002	.0004	.0000	.0000	.0023	-.0003	-.0001
#3	-.0006	.0007	.0005	-.0012	.0002	.0000	.0011	-.0003	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0001	.0023	.0000	.0546	<.0000	<.0000	<.0000	.0000
Stddev	.0002	.0007	.0008	.0011	.0032	.0003	.0100	.0001	.0002
%RSD	123.8	774.0	33.14	5467.	5.790	21.55	155.1	202.1	394.1
#1	-.0003	.0004	.0032	.0004	.0513	-.0012	.0021	-.0002	-.0001
#2	.0001	-.0007	.0017	.0009	.0576	-.0014	-.0175	.0000	.0001
#3	-.0002	.0006	.0021	-.0013	.0548	-.0018	-.0041	.0000	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0001	.0001	3.378	.0050	.0018	.0013	.0106	.0004
Stddev	.0095	.0003	.0011	.028	.0019	.0014	.0014	.0027	.0004
%RSD	173.3	277.7	1148.	.8197	38.34	80.53	113.7	25.29	102.7
#1	.0005	.0001	.0012	3.356	.0054	.0024	.0024	.0137	-.0001
#2	-.0164	-.0002	-.0001	3.409	.0030	.0001	-.0004	.0089	.0007
#3	-.0005	.0004	-.0009	3.369	.0068	.0028	.0018	.0092	.0005
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 9216-A-3 Acquired: 12/5/2014 21:30:43 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0002	.0006	.0001	<.0000	.0016	.0026
Stddev	.0000	.0019	.0008	.0004	.0066	.0038	.0002
%RSD	407.0	1242.	136.4	609.2	53.25	245.8	6.339
#1	.0001	-.0008	.0015	-.0003	-.0171	.0000	.0024
#2	.0000	-.0011	.0004	.0004	-.0049	.0059	.0026
#3	.0000	.0024	-.0001	.0001	-.0154	-.0013	.0028
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4037.9
Stddev	20.5
%RSD	.50887
#1	4055.5
#2	4015.3
#3	4043.0

Sample Name: MB257FE Acquired: 12/5/2014 21:34:37 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	<.0000	.0021	.0015	<.0000	.0003	.0009	.0000
Stddev	.0001	.0061	.0008	.0032	.0001	.0001	.0020	.0003	.0001
%RSD	64.15	118.8	108.8	153.0	3.471	414.8	570.3	37.24	7081.
#1	-.0002	-.0105	-.0014	.0056	.0015	-.0001	-.0008	.0012	.0001
#2	-.0004	.0015	-.0008	.0015	.0014	.0000	.0026	.0005	.0001
#3	-.0001	-.0062	.0001	-.0008	.0015	.0000	-.0008	.0010	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0010	.0009	1.882	.0355	<.0000	.0046	.0001	<.0000
Stddev	.0001	.0004	.0008	.009	.0115	.0016	.0049	.0002	.0001
%RSD	260.1	40.47	84.41	.4642	32.39	157.3	106.5	170.0	79.57
#1	-.0002	.0005	.0018	1.890	.0454	-.0002	.0090	.0003	-.0001
#2	.0000	.0011	.0003	1.884	.0229	-.0028	-.0008	.0003	-.0001
#3	.0001	.0012	.0007	1.873	.0383	.0000	.0057	-.0001	-.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0061	.0003	.0012	.0016	.0068	<.0000	<.0000	.0040	.0001
Stddev	.0023	.0001	.0005	.0007	.0017	.0012	.0003	.0032	.0002
%RSD	37.82	46.97	41.77	45.93	24.69	3244.	45.93	81.69	201.8
#1	.0085	.0004	.0013	.0020	.0068	.0004	-.0006	.0002	.0000
#2	.0057	.0003	.0007	.0021	.0051	-.0014	-.0004	.0057	.0003
#3	.0040	.0001	.0017	.0008	.0085	.0009	-.0011	.0060	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: MB257FE Acquired: 12/5/2014 21:34:37 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	<.0000	.0024	<.0000	<.0000	.0004	.0025
Stddev	.0001	.0031	.0007	.0013	.0101	.0006	.0002
%RSD	224.8	181.2	29.24	184.1	40.46	145.8	6.508
#1	.0000	-.0053	.0026	.0008	-.0134	.0011	.0023
#2	.0000	.0006	.0016	-.0014	-.0322	.0003	.0025
#3	.0002	-.0005	.0030	-.0015	-.0294	-.0001	.0026
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3997.2
Stddev	21.8
%RSD	.54616
#1	3982.3
#2	3987.1
#3	4022.3

Sample Name: LCS257FE Acquired: 12/5/2014 21:38:32 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	.0002	<.0000	.0002	.0000	<.0000	.0001	<.0000
Stddev	.0007	.0094	.0006	.0012	.0002	.0000	.0025	.0003	.0001
%RSD	345.0	916.7	267.3	93.55	144.6	152.1	428.0	224.5	191.2
#1	-.0010	.0084	-.0004	-.0025	.0000	.0000	-.0018	.0003	.0001
#2	.0004	-.0104	.0007	-.0013	.0004	.0000	.0023	.0004	-.0001
#3	.0000	-.0010	.0004	-.0001	.0000	.0000	-.0023	-.0002	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0017	.0012	1.950	.0318	<.0000	<.0000	.0002	<.0000
Stddev	.0002	.0011	.0008	.017	.0132	.0004	.0026	.0003	.0001
%RSD	227.0	62.78	62.52	.8833	41.64	148.8	42.36	132.5	404.8
#1	-.0003	.0028	.0010	1.946	.0185	.0001	-.0035	.0003	.0000
#2	-.0002	.0007	.0006	1.968	.0320	-.0002	-.0087	-.0001	-.0001
#3	.0001	.0015	.0021	1.934	.0449	-.0007	-.0061	.0004	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0003	<.0000	.0012	.0016	.0015	.0005	.0049	<.0000
Stddev	.0032	.0002	.0004	.0011	.0009	.0007	.0017	.0068	.0003
%RSD	124.4	69.31	358.1	93.17	59.09	45.02	354.6	139.8	1493.
#1	-.0005	.0002	.0001	.0002	.0005	.0019	-.0009	.0049	.0003
#2	-.0010	.0003	.0002	.0024	.0022	.0007	.0023	-.0020	.0000
#3	-.0063	.0006	-.0006	.0010	.0020	.0018	.0000	.0117	-.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LCS257FE Acquired: 12/5/2014 21:38:32 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0011	.0017	.0007	.0025	.0029	.0025
Stddev	.0001	.0021	.0004	.0010	.0176	.0024	.0001
%RSD	252.5	185.9	24.38	131.6	712.2	83.41	3.312
#1	.0000	-.0013	.0022	.0019	.0105	.0056	.0024
#2	.0000	.0027	.0015	.0001	-.0177	.0017	.0026
#3	-.0001	.0020	.0014	.0002	.0146	.0013	.0024
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4138.5
Stddev	27.0
%RSD	.65314
#1	4113.5
#2	4134.9
#3	4167.2

Sample Name: CCV Acquired: 12/5/2014 21:42:28 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.072**	**49.95**	F **5.552**	**5.109**	**5.030**	**5.155**	**5.493**	F **59.18**	F **5.571**
Stddev	.009	.45	.051	.047	.026	.057	.057	.54	.055
%RSD	.8209	.8974	.9196	.9225	.5254	1.110	1.037	.9119	.9839
#1	1.064	49.82	5.496	5.104	5.000	5.089	5.432	58.59	5.510
#2	1.082	50.45	5.597	5.158	5.045	5.185	5.545	59.66	5.618
#3	1.070	49.58	5.563	5.064	5.046	5.191	5.503	59.29	5.584
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Fail
Value			5.000					50.00	5.000
Range			10.00%					10.00%	10.00%

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F **5.721**	**5.463**	F **5.515**	**51.18**	**51.33**	**5.033**	**53.55**	**5.181**	F **1.106**
Stddev	.056	.043	.050	.50	.50	.049	.39	.044	.012
%RSD	.9706	.7801	.9095	.9825	.9678	.9676	.7365	.8524	1.089
#1	5.660	5.415	5.461	50.96	51.27	5.038	53.19	5.162	1.093
#2	5.769	5.498	5.560	51.75	51.86	5.079	53.98	5.231	1.116
#3	5.734	5.476	5.522	50.82	50.87	4.982	53.49	5.149	1.110
Check ?	Chk Fail	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
Value	5.000		5.000						1.000
Range	10.00%		10.00%						10.00%

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**51.86**	F **5.723**	F **58.11**	F **5.691**	**54.18**	**1.100**	**1.095**	**5.088**	F **5.723**
Stddev	.59	.056	.56	.055	.51	.009	.010	.053	.062
%RSD	1.129	.9802	.9567	.9724	.9449	.8534	.8766	1.038	1.077
#1	51.90	5.662	57.51	5.632	53.62	1.089	1.085	5.061	5.656
#2	52.43	5.772	58.60	5.741	54.62	1.103	1.104	5.149	5.777
#3	51.26	5.736	58.21	5.700	54.29	1.107	1.096	5.053	5.737
Check ?	Chk Pass	Chk Fail	Chk Fail	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
Value		5.000	50.00	5.000					5.000
Range		10.00%	10.00%	10.00%					10.00%

Sample Name: CCV Acquired: 12/5/2014 21:42:28 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.094	5.479	5.080	F 1.156	5.326	5.198	F 5.625
Stddev	.118	.030	.049	.009	.042	.043	.057
%RSD	2.317	.5489	.9583	.7716	.7891	.8230	1.017
#1	4.969	5.446	5.065	1.146	5.278	5.165	5.563
#2	5.204	5.506	5.134	1.164	5.346	5.246	5.676
#3	5.107	5.485	5.041	1.159	5.355	5.183	5.637
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Fail
Value				1.000			5.000
Range				10.00%			10.00%

Int. Std.	Y_3710
Units	Cts/S
Avg	3838.8
Stddev	42.2
%RSD	1.0985
#1	3887.2
#2	3809.6
#3	3819.7

Sample Name: CCB Acquired: 12/5/2014 21:46:16 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0006**	**<.0000**	**<.0000**	**.0136**	**.0004**	**.0004**	**.0004**	**<.0000**	**.0001**
Stddev	.0004	.0010	.0006	.0039	.0001	.0000	.0016	.0008	.0002
%RSD	63.80	123.4	634.5	29.03	22.81	5.638	457.1	73.68	143.4
#1	.0003	-.0006	-.0003	.0176	.0004	.0004	.0022	-.0002	.0003
#2	.0005	.0001	.0006	.0134	.0005	.0004	-.0009	-.0013	.0000
#3	.0010	-.0020	-.0005	.0097	.0003	.0004	-.0002	-.0018	.0000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**<.0000**	**.0012**	**.0003**	**.0033**	**.0654**	**<.0000**	**<.0000**	**.0003**	**.0001**
Stddev	.0001	.0008	.0018	.0004	.0237	.0007	.0102	.0001	.0002
%RSD	407.6	66.66	646.3	12.28	36.16	105.0	860.6	42.73	189.2
#1	-.0001	.0014	.0015	.0037	.0771	-.0014	.0067	.0002	.0003
#2	.0001	.0019	.0012	.0029	.0809	-.0007	-.0127	.0004	-.0001
#3	-.0001	.0003	-.0018	.0032	.0382	.0000	.0024	.0004	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**<.0000**	**.0005**	**.0019**	**.0012**	**.0038**	**.0001**	**<.0000**	**.0023**	**.0004**
Stddev	.0064	.0002	.0016	.0006	.0021	.0005	.0027	.0047	.0003
%RSD	571.2	46.92	82.61	47.69	56.49	943.6	198.6	202.6	81.29
#1	.0054	.0007	.0036	.0017	.0053	.0005	.0004	.0050	.0007
#2	-.0013	.0004	.0018	.0015	.0046	-.0005	-.0044	-.0031	.0001
#3	-.0074	.0003	.0004	.0006	.0013	.0002	.0000	.0051	.0004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Sample Name: CCB Acquired: 12/5/2014 21:46:16 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	<.0000	.0002	<.0000	<.0000	.0012	.0003
Stddev	.0001	.0016	.0002	.0008	.0106	.0015	.0001
%RSD	15.06	139.1	140.9	61.22	57.04	121.3	41.50
#1	.0004	-.0020	.0001	-.0008	-.0111	.0029	.0004
#2	.0004	-.0022	.0000	-.0022	-.0140	.0009	.0003
#3	.0003	.0007	.0004	-.0008	-.0308	.0000	.0002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_3710
Units	Cts/S
Avg	3967.8
Stddev	5.0
%RSD	.12598
#1	3973.5
#2	3965.7
#3	3964.3

Sample Name: LCSD257FE Acquired: 12/5/2014 21:50:12 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	<.0000	<.0000	.0038	.0003	.0001	.0004	.0005	.0000
Stddev	.0004	.0093	.0009	.0016	.0002	.0000	.0011	.0004	.0001
%RSD	718.0	218.9	216.8	43.07	56.20	10.47	244.3	96.71	1152.
#1	.0001	.0063	.0002	.0050	.0005	.0001	.0014	.0005	.0000
#2	-.0004	-.0110	-.0015	.0044	.0004	.0001	.0006	.0009	.0001
#3	.0005	-.0080	.0000	.0019	.0001	.0001	-.0007	.0000	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0014	.0003	1.841	.0526	<.0000	.0024	<.0000	<.0000
Stddev	.0001	.0006	.0011	.012	.0136	.0021	.0099	.0003	.0001
%RSD	37.93	47.22	396.5	.6238	25.86	398.7	410.3	580.8	165.6
#1	-.0003	.0020	.0014	1.828	.0543	-.0014	.0123	-.0003	.0000
#2	-.0002	.0008	-.0007	1.848	.0383	.0019	-.0076	-.0001	-.0001
#3	-.0001	.0012	.0001	1.848	.0653	-.0021	.0025	.0003	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0002	.0008	.0009	.0039	.0009	<.0000	.0052	.0003
Stddev	.0086	.0001	.0006	.0007	.0019	.0008	.0012	.0017	.0002
%RSD	77.19	39.66	79.21	86.22	49.93	83.85	52.97	33.51	85.23
#1	-.0151	.0002	.0008	.0001	.0058	.0000	-.0014	.0071	.0003
#2	-.0013	.0002	.0001	.0009	.0039	.0012	-.0037	.0044	.0001
#3	-.0170	.0003	.0014	.0016	.0019	.0015	-.0018	.0040	.0005
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LCSD257FE Acquired: 12/5/2014 21:50:12 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0029	.0015	<.0000	<.0000	.0024	.0024
Stddev	.0000	.0022	.0007	.0004	.0077	.0017	.0002
%RSD	220.4	76.17	45.75	42.31	49.61	72.75	8.432
#1	.0000	.0049	.0023	-.0006	-.0236	.0028	.0023
#2	.0001	.0006	.0011	-.0013	-.0150	.0039	.0023
#3	.0000	.0032	.0011	-.0007	-.0082	.0005	.0027
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3898.0
Stddev	45.4
%RSD	1.1638
#1	3935.6
#2	3910.7
#3	3847.6

Sample Name: 9275-A-2FE Acquired: 12/5/2014 21:54:07 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**.0010**	**<.0000**	**.0049**	**.0000**	**<.0000**	**.0019**	**<.0000**	**.0000**
Stddev	.0001	.0002	.0005	.0025	.0002	.0000	.0016	.0004	.0001
%RSD	67.42	21.72	173.4	50.54	436.7	21.44	86.72	27.71	296.8
#1	.0002	.0011	.0003	.0021	.0001	.0000	.0029	-.0016	-.0001
#2	.0001	.0007	-.0006	.0057	-.0002	.0000	.0027	-.0009	.0001
#3	.0001	.0011	-.0006	.0069	.0002	.0000	.0000	-.0013	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**<.0000**	**.0013**	**.0006**	**.3777**	**.0403**	**.0002**	**<.0000**	**<.0000**	**.0002**
Stddev	.0001	.0009	.0024	.0031	.0374	.0011	.0049	.0002	.0001
%RSD	110.1	64.93	391.4	.8144	92.63	483.5	161.5	182.4	49.80
#1	-.0002	.0004	.0032	.3804	.0459	.0011	.0026	.0000	.0001
#2	-.0001	.0021	.0004	.3783	.0747	.0005	-.0060	.0000	.0002
#3	.0000	.0015	-.0017	.3744	.0005	-.0010	-.0057	-.0004	.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**<.0000**	**.0003**	**.0010**	**.0010**	**.0076**	**.0002**	**.0010**	**.0032**	**.0006**
Stddev	.0060	.0001	.0005	.0007	.0024	.0018	.0003	.0064	.0003
%RSD	252.7	41.27	52.80	72.43	31.92	812.4	32.87	204.2	56.98
#1	.0044	.0002	.0015	.0019	.0075	-.0001	.0010	.0087	.0008
#2	-.0044	.0004	.0010	.0005	.0100	-.0014	.0013	-.0039	.0007
#3	-.0071	.0003	.0005	.0007	.0052	.0022	.0007	.0047	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 9275-A-2FE Acquired: 12/5/2014 21:54:07 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0015	.0031	<.0000	<.0000	.0026	.0025
Stddev	.0000	.0021	.0003	.0010	.0125	.0002	.0002
%RSD	249.6	138.1	10.92	291.0	266.3	5.918	6.498
#1	.0000	.0008	.0031	-.0002	-.0116	.0025	.0023
#2	.0000	.0039	.0027	-.0014	-.0123	.0025	.0025
#3	.0000	-.0001	.0034	.0005	.0098	.0027	.0026
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4106.3
Stddev	22.1
%RSD	.53906
#1	4128.0
#2	4107.2
#3	4083.8

Sample Name: 9275-A-3FE Acquired: 12/5/2014 21:58:03 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	.0004	.0009	.0002	<.0000	.0006	.0001	<.0000
Stddev	.0004	.0091	.0006	.0013	.0001	.0001	.0025	.0006	.0000
%RSD	63.85	149.0	156.8	146.1	53.52	386.1	447.5	568.5	224.7
#1	-.0009	-.0035	.0010	.0018	.0004	-.0001	.0004	-.0004	.0000
#2	-.0008	-.0162	-.0003	-.0006	.0001	.0000	-.0019	-.0001	.0000
#3	-.0002	.0014	.0005	.0015	.0002	.0000	.0032	.0008	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0012	.0007	2.169	.0479	<.0000	<.0000	.0003	<.0000
Stddev	.0003	.0005	.0009	.006	.0179	.0006	.0026	.0002	.0002
%RSD	137.2	40.38	122.0	.2692	37.36	31.83	34.79	68.41	221.7
#1	-.0004	.0010	.0017	2.164	.0504	-.0026	-.0106	.0003	.0001
#2	.0001	.0018	.0001	2.168	.0288	-.0015	-.0063	.0001	-.0003
#3	-.0002	.0009	.0004	2.176	.0643	-.0017	-.0059	.0005	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0003	.0003	.0002	.0028	.0000	<.0000	<.0000	.0000
Stddev	.0035	.0001	.0005	.0005	.0018	.0007	.0011	.0051	.0002
%RSD	99.79	41.19	199.6	194.6	63.55	1805.	475.1	685.9	768.1
#1	-.0072	.0002	.0007	.0004	.0048	.0005	.0009	-.0064	.0000
#2	-.0002	.0004	.0004	.0007	.0020	-.0007	-.0003	.0032	.0002
#3	-.0033	.0002	-.0003	-.0003	.0015	.0004	-.0014	.0010	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 9275-A-3FE Acquired: 12/5/2014 21:58:03 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0013	.0099	.0002	<.0000	.0017	.0025
Stddev	.0001	.0010	.0010	.0009	.0078	.0027	.0001
%RSD	300.2	75.18	9.820	377.6	87.71	158.3	3.747
#1	-.0002	.0002	.0101	.0012	-.0179	.0007	.0026
#2	.0000	.0016	.0089	.0000	-.0056	.0048	.0025
#3	.0001	.0021	.0108	-.0005	-.0033	-.0003	.0024
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3995.3
Stddev	26.8
%RSD	.67135
#1	3965.1
#2	4004.3
#3	4016.4

Sample Name: MB258NI Acquired: 12/5/2014 22:01:57 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000**	**<.0000**	**.0003**	**.0011**	**.0002**	**<.0000**	**.0014**	**<.0000**	**<.0000**
Stddev	.0003	.0069	.0008	.0027	.0001	.0000	.0002	.0002	.0001
%RSD	545.8	878.0	312.5	251.3	29.92	199.7	16.01	30.95	51.81
#1	.0001	.0066	.0012	-.0018	.0003	-.0001	.0012	-.0007	-.0003
#2	.0003	-.0018	-.0001	.0036	.0002	.0000	.0016	-.0011	-.0003
#3	-.0002	-.0071	-.0003	.0015	.0002	.0000	.0015	-.0006	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**<.0000**	**.0010**	**.0049**	**.0008**	**.0491**	**<.0000**	**.0013**	**<.0000**	**<.0000**
Stddev	.0002	.0009	.0003	.0010	.0330	.0012	.0060	.0003	.0003
%RSD	116.9	90.92	5.429	125.1	67.18	148.2	443.2	105.1	136.5
#1	.0001	.0017	.0047	.0017	.0871	-.0007	.0067	.0001	.0001
#2	-.0003	.0012	.0052	.0010	.0274	.0003	.0024	-.0005	-.0005
#3	-.0003	.0000	.0049	-.0003	.0329	-.0020	-.0051	-.0004	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**<.0000**	**.2718**	**.0035**	**.0004**	**.0022**	**.0012**	**<.0000**	**.0018**	**.0005**
Stddev	.0060	.0018	.0005	.0006	.0023	.0023	.0024	.0033	.0001
%RSD	148.1	.6709	13.34	173.1	106.2	191.5	179.7	184.1	25.05
#1	-.0110	.2721	.0040	.0004	.0022	.0039	-.0003	.0056	.0005
#2	-.0004	.2735	.0034	-.0003	.0045	-.0002	-.0042	.0001	.0006
#3	-.0008	.2699	.0031	.0010	-.0001	.0000	.0004	-.0003	.0004
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: MB258NI Acquired: 12/5/2014 22:01:57 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0002	.0002	<.0000	<.0000	.0020	.0045
Stddev	.0000	.0020	.0008	.0012	.0182	.0014	.0002
%RSD	102.3	908.3	387.1	222.9	67.74	68.31	3.735
#1	.0000	-.0015	-.0003	.0005	-.0435	.0017	.0047
#2	-.0001	-.0002	.0012	-.0003	-.0074	.0008	.0044
#3	.0000	.0023	-.0002	-.0019	-.0298	.0035	.0045
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3852.3
Stddev	31.1
%RSD	.80791
#1	3847.7
#2	3823.7
#3	3885.4

Sample Name: LCS258NI Acquired: 12/5/2014 22:05:51 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	<.0000	.0036	.0002	<.0000	.0016	.0036	<.0000
Stddev	.0004	.0069	.0005	.0030	.0002	.0001	.0016	.0010	.0001
%RSD	239.4	373.5	1237.	83.80	85.82	156.0	100.6	26.43	125.9
#1	.0003	-.0090	-.0004	.0001	.0004	.0000	.0019	.0047	-.0001
#2	-.0003	-.0013	.0005	.0051	.0001	-.0001	.0029	.0028	-.0003
#3	-.0005	.0048	-.0002	.0057	.0001	.0000	-.0002	.0035	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0011	.0044	.0054	.0379	<.0000	<.0000	<.0000	<.0000
Stddev	.0001	.0010	.0020	.0020	.0143	.0006	.0069	.0001	.0003
%RSD	65.67	89.47	46.11	37.61	37.72	40.78	472.9	170.6	322.3
#1	-.0001	.0016	.0048	.0078	.0390	-.0020	-.0088	.0000	-.0003
#2	.0000	.0017	.0063	.0042	.0230	-.0015	.0048	.0000	-.0003
#3	-.0002	.0000	.0022	.0043	.0515	-.0008	-.0003	-.0001	.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.2584	.0036	.0006	.0018	.0010	.0004	<.0000	<.0000
Stddev	.0075	.0024	.0008	.0002	.0004	.0003	.0013	.0056	.0001
%RSD	53.95	.9104	21.89	35.60	21.39	25.27	291.8	213.3	282.6
#1	-.0220	.2605	.0036	.0004	.0017	.0013	.0014	-.0034	.0001
#2	-.0072	.2559	.0028	.0007	.0015	.0010	.0010	.0033	-.0002
#3	-.0126	.2588	.0044	.0008	.0022	.0008	-.0010	-.0079	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LCS258NI Acquired: 12/5/2014 22:05:51 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0001	.0003	.0002	<.0000	.0004	.0043
Stddev	.0000	.0042	.0012	.0011	.0106	.0057	.0001
%RSD	174.0	5100.	399.2	552.4	480.5	1535.	1.768
#1	-.0001	.0011	.0008	-.0009	-.0132	.0061	.0043
#2	.0000	.0037	-.0010	.0013	-.0013	.0002	.0043
#3	.0000	-.0045	.0011	.0002	.0079	-.0052	.0044
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3934.0
Stddev	14.1
%RSD	.35965
#1	3917.7
#2	3942.1
#3	3942.3

Sample Name: LCSD258NI Acquired: 12/5/2014 22:09:46 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0026	<.0000	.0007	.0002	<.0000	<.0000	<.0000	<.0000
Stddev	.0004	.0064	.0009	.0026	.0001	.0000	.0025	.0005	.0001
%RSD	71.09	247.2	104.5	384.2	23.84	207.6	132.3	35.95	48.51
#1	-.0011	-.0048	-.0016	-.0019	.0002	.0000	-.0032	-.0015	-.0001
#2	-.0004	.0059	-.0013	.0033	.0003	.0000	.0010	-.0020	-.0004
#3	-.0003	.0066	.0002	.0006	.0002	-.0001	-.0035	-.0009	-.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	.0001	<.0000	.0469	<.0000	<.0000	<.0000	<.0000
Stddev	.0002	.0008	.0011	.0023	.0099	.0005	.0174	.0002	.0001
%RSD	315.3	22680.	794.5	176.8	21.13	66.51	236.5	63.34	376.7
#1	.0001	.0005	.0005	-.0040	.0360	-.0002	.0111	-.0005	.0001
#2	-.0001	-.0009	.0010	-.0006	.0494	-.0009	-.0235	-.0001	.0000
#3	-.0002	.0004	-.0011	.0006	.0554	-.0013	-.0096	-.0002	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0044	.2480	.0039	.0002	.0012	.0003	.0001	.0030	.0003
Stddev	.0082	.0010	.0005	.0002	.0006	.0006	.0022	.0021	.0001
%RSD	186.5	.3938	13.20	65.57	49.19	191.4	1959.	67.48	44.88
#1	.0023	.2474	.0037	.0001	.0012	-.0003	.0015	.0008	.0003
#2	.0134	.2475	.0046	.0002	.0007	.0008	-.0024	.0036	.0002
#3	-.0026	.2491	.0036	.0004	.0019	.0004	.0012	.0048	.0004
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LCSD258NI Acquired: 12/5/2014 22:09:46 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	<.0000	.0004	<.0000	.0025	.0039
Stddev	.0001	.0039	.0001	.0003	.0167	.0022	.0001
%RSD	540.3	113.1	29.29	77.34	120.1	89.72	3.665
#1	.0001	.0005	-.0001	.0006	-.0318	.0039	.0040
#2	-.0001	-.0074	-.0002	.0004	.0014	.0037	.0039
#3	-.0001	-.0035	-.0002	.0001	-.0114	-.0001	.0038
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4039.3
Stddev	29.1
%RSD	.72137
#1	4066.5
#2	4043.0
#3	4008.6

Sample Name: 9275-A-2NI Acquired: 12/5/2014 22:13:40 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0002**	**<.0000**	**<.0000**	**<.0000**	**.0004**	**.0000**	**.0029**	**.0005**	**.0001**
Stddev	.0005	.0043	.0008	.0024	.0001	.0000	.0032	.0004	.0001
%RSD	257.8	165.0	90.01	2524.	20.25	115.4	108.9	68.31	68.28
#1	.0007	-.0069	-.0008	-.0024	.0004	.0001	.0066	.0009	.0002
#2	-.0002	-.0024	-.0002	.0024	.0003	.0000	.0009	.0005	.0001
#3	.0001	.0016	-.0018	-.0003	.0005	.0000	.0012	.0002	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**<.0000**	**.0023**	**.0029**	**.0079**	**.0414**	**<.0000**	**<.0000**	**<.0000**	**.0000**
Stddev	.0001	.0004	.0019	.0006	.0082	.0007	.0033	.0004	.0001
%RSD	67.40	16.63	64.37	7.459	19.77	53.00	40.40	355.1	2346.
#1	-.0001	.0019	.0048	.0079	.0416	-.0017	-.0058	-.0005	-.0001
#2	-.0001	.0024	.0010	.0085	.0331	-.0019	-.0119	.0003	.0000
#3	-.0003	.0026	.0029	.0074	.0494	-.0006	-.0067	-.0001	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**<.0000**	**.0104**	**<.0000**	**.0000**	**<.0000**	**<.0000**	**<.0000**	**.0001**	**.0002**
Stddev	.0093	.0001	.0009	.0003	.0039	.0002	.0007	.0042	.0000
%RSD	188.5	.6578	504.4	760.9	269.6	93.83	316.1	7799.	9.704
#1	.0018	.0103	.0001	.0003	-.0031	.0000	.0005	.0037	.0002
#2	-.0010	.0105	.0006	-.0003	.0030	-.0002	-.0008	-.0045	.0002
#3	-.0156	.0105	-.0013	.0002	-.0042	-.0003	-.0004	.0010	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 9275-A-2NI Acquired: 12/5/2014 22:13:40 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0050	.0000	<.0000	<.0000	.0022	.0027
Stddev	.0001	.0022	.0004	.0014	.0077	.0012	.0000
%RSD	726.2	44.16	1124.	48.93	39.88	56.04	.8025
#1	.0001	.0025	-.0004	-.0020	-.0106	.0033	.0027
#2	-.0001	.0062	.0001	-.0020	-.0227	.0009	.0027
#3	.0001	.0064	.0004	-.0044	-.0250	.0023	.0028
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3979.2
Stddev	31.1
%RSD	.78031
#1	4014.7
#2	3965.7
#3	3957.2

Sample Name: 9275-A-3NI Acquired: 12/5/2014 22:17:34 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	<.0000	.0059	.0002	<.0000	<.0000	<.0000	<.0000
Stddev	.0004	.0027	.0014	.0023	.0001	.0000	.0015	.0006	.0001
%RSD	152.4	104.8	247.4	38.47	46.76	48.15	77.19	69.58	45.46
#1	-.0005	-.0049	-.0005	.0033	.0001	.0000	-.0004	-.0005	-.0002
#2	-.0005	-.0032	-.0020	.0073	.0002	.0000	-.0020	-.0005	-.0002
#3	.0002	.0004	.0008	.0072	.0003	.0000	-.0034	-.0015	-.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0012	.0067	.0004	.0544	<.0000	<.0000	<.0000	<.0000
Stddev	.0001	.0006	.0012	.0006	.0095	.0003	.0152	.0002	.0003
%RSD	88.36	49.21	18.06	140.7	17.44	21.69	97.16	110.7	123.4
#1	-.0003	.0011	.0081	.0011	.0603	-.0017	-.0210	.0001	-.0001
#2	-.0001	.0018	.0058	.0001	.0593	-.0016	.0015	-.0004	-.0005
#3	-.0001	.0007	.0063	.0000	.0434	-.0011	-.0273	-.0003	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.2578	.0029	.0013	<.0000	<.0000	.0000	<.0000	.0004
Stddev	.0027	.0033	.0008	.0003	.0009	.0005	.0005	.0016	.0005
%RSD	41.66	1.265	29.16	25.91	223.3	120.4	1159.	228.6	143.8
#1	-.0059	.2559	.0024	.0013	.0006	-.0010	.0006	-.0009	-.0003
#2	-.0096	.2559	.0039	.0017	-.0007	-.0004	-.0005	.0010	.0007
#3	-.0042	.2615	.0024	.0010	-.0011	.0001	.0001	-.0023	.0007
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 9275-A-3NI Acquired: 12/5/2014 22:17:34 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	.0000	<.0000	<.0000	.0014	.0041
Stddev	.0001	.0026	.0005	.0011	.0100	.0021	.0001
%RSD	100.9	359.9	2884.	49.56	63.60	152.9	2.465
#1	-.0001	.0021	-.0004	-.0031	-.0118	.0034	.0039
#2	-.0001	-.0029	.0006	-.0026	-.0082	-.0007	.0041
#3	.0000	-.0014	-.0001	-.0010	-.0270	.0014	.0041
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3927.4
Stddev	44.4
%RSD	1.1315
#1	3955.2
#2	3950.8
#3	3876.1

Sample Name: CCV Acquired: 12/5/2014 22:21:30 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.081	50.34	F 5.607	5.131	5.057	5.194	F 5.560	F 59.22	F 5.643
Stddev	.006	.13	.036	.027	.077	.069	.041	.26	.035
%RSD	.5759	.2582	.6413	.5180	1.526	1.318	.7322	.4339	.6293
#1	1.081	50.24	5.566	5.104	5.005	5.144	5.513	58.94	5.602
#2	1.087	50.49	5.633	5.157	5.021	5.272	5.586	59.44	5.670
#3	1.074	50.30	5.621	5.131	5.146	5.166	5.581	59.27	5.655
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Fail	Chk Fail
Value			5.000				5.000	50.00	5.000
Range			10.00%				10.00%	10.00%	10.00%

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 5.762	F 5.534	F 5.597	51.65	51.81	5.072	53.39	5.200	F 1.127
Stddev	.031	.029	.035	.16	.12	.016	.17	.016	.006
%RSD	.5357	.5233	.6162	.3158	.2270	.3098	.3178	.2975	.5688
#1	5.728	5.553	5.559	51.50	51.68	5.054	53.30	5.189	1.121
#2	5.788	5.549	5.627	51.82	51.86	5.080	53.58	5.217	1.134
#3	5.768	5.501	5.603	51.61	51.90	5.083	53.28	5.193	1.127
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
Value	5.000	5.000	5.000						1.000
Range	10.00%	10.00%	10.00%						10.00%

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	51.97	F 5.770	F 58.42	F 5.741	54.85	F 1.111	F 1.111	5.086	F 5.776
Stddev	.22	.032	.37	.030	.41	.009	.004	.019	.027
%RSD	.4328	.5506	.6268	.5294	.7528	.8408	.3960	.3775	.4687
#1	51.72	5.736	58.00	5.711	54.37	1.100	1.106	5.065	5.749
#2	52.02	5.799	58.69	5.772	55.14	1.114	1.113	5.089	5.803
#3	52.17	5.776	58.56	5.739	55.02	1.118	1.113	5.103	5.777
Check ?	Chk Pass	Chk Fail	Chk Fail	Chk Fail	Chk Pass	Chk Fail	Chk Fail	Chk Pass	Chk Fail
Value		5.000	50.00	5.000		1.000	1.000		5.000
Range		10.00%	10.00%	10.00%		10.00%	10.00%		10.00%

Sample Name: CCV Acquired: 12/5/2014 22:21:30 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.137	F 5.521	5.114	F 1.165	5.420	5.206	F 5.684
Stddev	.072	.043	.015	.008	.066	.032	.035
%RSD	1.406	.7820	.2879	.7098	1.215	.6205	.6177
#1	5.059	5.529	5.097	1.156	5.436	5.182	5.645
#2	5.201	5.560	5.125	1.171	5.476	5.243	5.714
#3	5.151	5.475	5.119	1.168	5.348	5.194	5.691
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Fail
Value		5.000		1.000			5.000
Range		10.00%		10.00%			10.00%

Int. Std.	Y_3710
Units	Cts/S
Avg	3783.1
Stddev	21.9
%RSD	.57998
#1	3786.8
#2	3759.5
#3	3802.9

Sample Name: CCB Acquired: 12/5/2014 22:25:17 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**<.0000**	**.0007**	**.0111**	**.0005**	**.0004**	**.0007**	**<.0000**	**.0001**
Stddev	.0008	.0042	.0016	.0039	.0002	.0000	.0022	.0011	.0001
%RSD	616.0	401.4	227.8	35.29	45.31	9.337	310.5	217.8	50.00
#1	-.0008	.0022	.0006	.0132	.0007	.0004	-.0002	.0003	.0002
#2	.0006	-.0058	-.0008	.0066	.0002	.0004	-.0009	-.0001	.0001
#3	.0006	.0005	.0024	.0136	.0005	.0004	.0032	-.0018	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000**	**.0013**	**.0027**	**.0022**	**.0652**	**<.0000**	**<.0000**	**.0003**	**<.0000**
Stddev	.0003	.0006	.0013	.0037	.0121	.0005	.0153	.0004	.0001
%RSD	738.3	44.57	46.44	171.4	18.58	35.90	286.4	104.2	93.08
#1	.0001	.0011	.0036	.0047	.0632	-.0008	-.0059	.0002	.0000
#2	.0003	.0008	.0013	.0040	.0541	-.0018	-.0203	.0001	-.0001
#3	-.0002	.0020	.0032	-.0021	.0781	-.0016	.0103	.0007	-.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**<.0000**	**.0005**	**.0031**	**.0013**	**.0013**	**.0010**	**<.0000**	**.0000**	**.0003**
Stddev	.0059	.0000	.0007	.0009	.0026	.0013	.0014	.0047	.0001
%RSD	34.35	9.448	22.07	73.59	193.1	129.7	731.4	14150.	47.99
#1	-.0229	.0005	.0031	.0013	.0042	.0021	-.0018	.0055	.0002
#2	-.0179	.0005	.0038	.0003	-.0007	.0012	.0006	-.0029	.0002
#3	-.0111	.0004	.0024	.0022	.0005	-.0004	.0006	-.0026	.0005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Sample Name: CCB Acquired: 12/5/2014 22:25:17 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	.0012	.0006	<.0000	<.0000	.0010	.0001
Stddev	.0001	.0010	.0002	.0019	.0061	.0018	.0001
%RSD	15.98	80.90	37.83	189.5	53.42	182.8	107.5
#1	.0004	.0002	.0006	-.0015	-.0052	-.0002	.0003
#2	.0003	.0022	.0003	.0011	-.0175	.0030	.0000
#3	.0004	.0012	.0008	-.0026	-.0116	.0001	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_3710
Units	Cts/S
Avg	3986.3
Stddev	13.0
%RSD	.32678
#1	3998.4
#2	3972.5
#3	3988.1

fc
12/10/14

ABATCH: 162455

Fig. 121014C1

	Pos ID	Rack	Row	Col	Type	Samplename	Comment	Custom ID1	Custom ID2	Custom ID3
1	1001	3	1	1	Unk	160-9281-A-14-A				
2	1002	3	1	2	Unk	160-9281-B-15-A				
3	1003	3	1	3	Unk	LB 160-157719/1-C				
4	1004	3	1	4	Unk	LCS 160-161405/2-				
5	1005	3	1	5	Unk	160-9438-G-1-G	DF=10			
6	1006	3	1	6	Unk	160-9438-G-2-J	DF=10			
7	1007	3	1	7	Unk	160-9438-G-2-J SD	DF=50			
8	1008	3	1	8	Unk	160-9438-G-2-G MS	DF=10			
9	1009	3	1	9	Unk	160-9438-G-2-H MS	DF=10			
10	1010	3	1	10	Unk	MB 160-161880/1-A				
11	1011	3	1	11	Unk	LCSSRM 160-16188	DF=2			
12	1012	3	1	12	Unk	160-9735-B-5-D	DF=5			
13	1013	3	1	13	Unk	160-9735-B-5-D SD	DF=25			
14	1014	3	1	14	Unk	160-9735-B-5-E MS	DF=5			
15	1015	3	1	15	Unk	160-9735-B-5-F MS	DF=5			
16	1016	3	2	1	Unk	160-9735-A-11-A	DF=5			
17	1017	3	2	2	Unk	160-9735-B-15-B	DF=5			
18	1018	3	2	3	Unk	160-9735-B-20-B	DF=5			
19	1019	3	2	4	Unk	160-9682-A-5-G	DF=5			
20	1020	3	2	5	Unk	160-9682-B-9-D	DF=5			
21	1021	3	2	6	Unk	160-9682-B-13-D	DF=5			
22	1022	3	2	7	Unk	160-9682-B-17-D	DF=5			
23	1023	3	2	8	Unk	160-9682-A-22-C	DF=5			
24	1024	3	2	9	Unk	160-9682-A-23-C	DF=5			
25	1025	3	2	10	Unk	160-9682-A-27-C	DF=5			
26	1026	3	2	11	Unk	TEST 9182				
27	1027	3	2	12	Unk	LB 160-159198/1-D				
28	1028	3	2	13	Unk	LCS 160-161024/2-				
29	1029	3	2	14	Unk	160-9182-A-12-H	DF=2			
30	1030	3	2	15	Unk	160-9182-A-12-H S	DF=10			
31	1031	3	3	1	Unk	~~160-9182-A-12-H D~~	~~DF=2~~			

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	12/10/2014 8:53:49	12/10/2014 8:53:49	Linear	1/Conc	0.000194	1.796395	0.000000	1.000000
Al 396.152 { 85}	12/10/2014 8:53:50	12/10/2014 8:53:50	Linear	1/Conc	-0.001261	0.202620	0.000000	1.000000
As 189.042 {478}	12/10/2014 8:53:50	12/10/2014 8:53:50	Linear	1/Conc	-0.000210	0.122808	0.000000	1.000000
B 249.678 {135}	12/10/2014 8:53:50	12/10/2014 8:53:50	Linear	1/Conc	0.001299	0.174936	0.000000	1.000000
Ba 455.403 { 74}	12/10/2014 8:53:50	12/10/2014 8:53:50	Linear	1/Conc	0.022627	13.592560	0.000000	1.000000
Be 313.042 {108}	12/10/2014 8:53:50	12/10/2014 8:53:50	Linear	1/Conc	0.000936	18.422331	0.000000	1.000000
Bi 223.061 {451}	12/10/2014 8:53:50	12/10/2014 8:53:50	Linear	1/Conc	0.000478	0.108901	0.000000	1.000000
Ca 184.006 {483}	12/10/2014 8:53:50	12/10/2014 8:53:50	Linear	1/Conc	-0.003473	0.258203	0.000000	1.000000
Cd 228.802 {447}	12/10/2014 8:53:50	12/10/2014 8:53:50	Linear	1/Conc	0.000016	1.805231	0.000000	1.000000
Co 228.616 {448}	12/10/2014 8:53:50	12/10/2014 8:53:50	Linear	1/Conc	-0.000173	0.769624	0.000000	1.000000
Cr 283.563 {119}	12/10/2014 8:53:50	12/10/2014 8:53:50	Linear	1/Conc	0.001582	0.255595	0.000000	1.000000
Cu 217.894 {455}	12/10/2014 8:53:50	12/10/2014 8:53:50	Linear	1/Conc	0.000356	0.145712	0.000000	1.000000
Fe 259.940 {130}	12/10/2014 8:53:50	12/10/2014 8:53:50	Linear	1/Conc	-0.000030	0.305677	0.000000	1.000000
K 766.490 { 44}	12/10/2014 8:53:50	12/10/2014 8:53:50	Linear	1/Conc	0.006591	0.134089	0.000000	1.000000
Li 670.784 { 50}	12/10/2014 8:53:50	12/10/2014 8:53:50	Linear	1/Conc	-0.009970	3.627573	0.000000	1.000000
Mg 279.806 {121}	12/10/2014 8:53:50	12/10/2014 8:53:50	Linear	1/Conc	-0.002144	0.060277	0.000000	1.000000
Mn 257.610 {131}	12/10/2014 8:53:50	12/10/2014 8:53:50	Linear	1/Conc	0.000147	2.078908	0.000000	1.000000
Mo 202.030 {467}	12/10/2014 8:53:50	12/10/2014 8:53:50	Linear	1/Conc	-0.000003	0.826577	0.000000	1.000000
Na 589.592 { 57}	12/10/2014 8:53:50	12/10/2014 8:53:50	Linear	1/Conc	-0.042993	0.481487	0.000000	1.000000
Ni 221.647 {452}	12/10/2014 8:53:50	12/10/2014 8:53:50	Linear	1/Conc	0.000721	1.173795	0.000000	1.000000
P 177.495 {490}	12/10/2014 8:53:50	12/10/2014 8:53:50	Linear	1/Conc	0.000139	0.148141	0.000000	1.000000
Pb 220.353 {453}	12/10/2014 8:53:50	12/10/2014 8:53:50	Linear	1/Conc	-0.000400	0.207628	0.000000	1.000000
S 182.034 {485}	12/10/2014 8:53:50	12/10/2014 8:53:50	Linear	1/Conc	-0.000156	0.060358	0.000000	1.000000
Sb 206.833 {463}	12/10/2014 8:53:50	12/10/2014 8:53:50	Linear	1/Conc	-0.000326	0.134815	0.000000	1.000000
Se 196.090 {472}	12/10/2014 8:53:50	12/10/2014 8:53:50	Linear	1/Conc	0.000158	0.082335	0.000000	1.000000
Si 251.611 {134}	12/10/2014 8:53:50	12/10/2014 8:53:50	Linear	1/Conc	0.003736	0.098659	0.000000	1.000000
Sn 189.989 {478}	12/10/2014 8:53:50	12/10/2014 8:53:50	Linear	1/Conc	0.000172	0.278076	0.000000	1.000000
Sr 407.771 { 83}	12/10/2014 8:53:50	12/10/2014 8:53:50	Linear	1/Conc	-0.006127	21.883133	0.000000	1.000000
Th 283.231 {119}	12/10/2014 8:53:50	12/10/2014 8:53:50	Linear	1/Conc	0.003109	0.174318	0.000000	1.000000
Ti 334.941 {101}	12/10/2014 8:53:50	12/10/2014 8:53:50	Linear	1/Conc	0.004451	1.438578	0.000000	1.000000
Tl 190.856 {477}	12/10/2014 8:53:50	12/10/2014 8:53:50	Linear	1/Conc	-0.000997	0.175022	0.000000	1.000000
U 367.007 { 92}	12/10/2014 8:53:50	12/10/2014 8:53:50	Linear	1/Conc	0.041791	0.097601	0.000000	1.000000
V 290.882 {116}	12/10/2014 8:53:50	12/10/2014 8:53:50	Linear	1/Conc	-0.001296	0.332258	0.000000	1.000000
Y 371.030 { 91}*	12/10/2014 8:53:50	12/10/2014 8:53:50	Linear	1/Conc	1.000000	0.000000	0.000000	1.000000
Zn 213.856 {458}	12/10/2014 8:53:50	12/10/2014 8:53:50	Linear	1/Conc	0.000737	1.075901	0.000000	1.000000

Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.999940	0.000151	0.000557	0.001856	OK.	1.000000	0.000000	1	0
Al 396.152 { 85}	0.999989	0.000235	0.007884	0.026281	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999918	0.000027	0.000970	0.003234	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999076	0.000411	0.002721	0.009071	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999886	0.007944	0.000158	0.000527	OK.	1.000000	0.000000	1	0
Be 313.042 {108}	0.999719	0.005348	0.000039	0.000129	OK.	1.000000	0.000000	1	0
Bi 223.061 {451}	0.999871	0.000136	0.001870	0.006234	OK.	1.000000	0.000000	1	0
Ca 184.006 {483}	0.999615	0.003937	0.000449	0.001495	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.999867	0.000363	0.000109	0.000365	OK.	1.000000	0.000000	1	0
Co 228.616 {448}	0.999740	0.000682	0.000201	0.000670	OK.	1.000000	0.000000	1	0
Cr 283.563 {119}	0.999718	0.000106	0.000771	0.002569	OK.	1.000000	0.000000	1	0
Cu 217.894 {455}	0.999880	0.000062	0.001278	0.004261	OK.	1.000000	0.000000	1	0
Fe 259.940 {130}	0.999761	0.001157	0.001548	0.005161	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999961	0.001478	0.025386	0.084621	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999916	0.001829	0.000965	0.003217	OK.	1.000000	0.000000	1	0
Mg 279.806 {121}	0.999955	0.000313	0.009082	0.030273	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999848	0.000769	0.000241	0.000802	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999841	0.000230	0.000174	0.000580	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999910	0.003543	0.007332	0.024442	OK.	1.000000	0.000000	1	0
Ni 221.647 {452}	0.999694	0.001007	0.000187	0.000622	OK.	1.000000	0.000000	1	0
P 177.495 {490}	0.999573	0.001186	0.000750	0.002501	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.999728	0.000084	0.000880	0.002932	OK.	1.000000	0.000000	1	0
S 182.034 {485}	0.999967	0.000608	0.001807	0.006023	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999862	0.000018	0.001347	0.004491	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.999952	0.000008	0.001648	0.005492	OK.	1.000000	0.000000	1	0
Si 251.611 {134}	0.999966	0.000090	0.004939	0.016463	OK.	1.000000	0.000000	1	0
Sn 189.989 {478}	0.999768	0.000329	0.000371	0.001237	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999765	0.005808	0.000062	0.000207	OK.	1.000000	0.000000	1	0
Th 283.231 {119}	0.999824	0.000255	0.002649	0.008829	OK.	1.000000	0.000000	1	0
Ti 334.941 {101}	0.999912	0.000469	0.000656	0.002186	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999486	0.000061	0.000794	0.002646	OK.	1.000000	0.000000	1	0
U 367.007 { 92}	0.999853	0.000246	0.011747	0.039157	OK.	1.000000	0.000000	1	0
V 290.882 {116}	0.999840	0.000231	0.002350	0.007833	OK.	1.000000	0.000000	1	0
Y 371.030 { 91}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 213.856 {458}	0.999786	0.000547	0.000110	0.000366	OK.	1.000000	0.000000	1	0

Sample Name: CALBLK1 Acquired: 12/10/2014 8:38:32 Type: Cal
Method: 2014v4(v15) Mode: IR Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.0002	-.0013	-.0002	.0013	.0226	.0009	.0005	-.0035	.0000
Stddev	.0013	.0023	.0001	.0002	.0030	.0004	.0001	.0002	.0003
%RSD	654.8	185.7	71.33	17.19	13.37	44.93	21.85	4.946	1719.
#1	.0011	.0005	-.0003	.0011	.0233	.0005	.0006	-.0033	.0002
#2	.0008	-.0039	-.0002	.0014	.0253	.0012	.0005	-.0036	-.0003
#3	-.0013	-.0004	.0000	.0015	.0193	.0011	.0004	-.0036	.0001

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.0002	.0016	.0004	.0000	.0066	-.0100	-.0021	.0001	.0000
Stddev	.0000	.0004	.0002	.000	.0026	.0060	.0003	.0004	.000
%RSD	10.28	22.50	56.09	128.2	38.86	60.59	14.46	288.7	2166.
#1	-.0002	.0019	.0005	-.0001	.0060	-.0154	-.0023	.0000	.0000
#2	-.0002	.0016	.0005	.0000	.0044	-.0035	-.0023	.0006	-.0001
#3	-.0002	.0012	.0001	.0000	.0094	-.0111	-.0018	-.0002	.0001

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.0430	.0007	.0001	-.0004	-.0002	-.0003	.0002	.0037	.0002
Stddev	.0027	.0002	.0001	.0001	.0001	.0003	.0001	.0002	.0000
%RSD	6.369	27.64	45.83	23.27	38.58	90.24	76.67	5.942	10.75
#1	-.0443	.0006	.0002	-.0003	-.0001	-.0001	.0002	.0039	.0002
#2	-.0449	.0006	.0001	-.0004	-.0002	-.0002	.0000	.0039	.0002
#3	-.0398	.0009	.0002	-.0005	-.0002	-.0007	.0003	.0035	.0002

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.0061	.0031	.0045	-.0010	.0418	-.0013	.0007
Stddev	.0017	.0004	.0009	.0000	.0015	.0013	.0001
%RSD	28.26	14.17	19.92	2.353	3.594	103.4	17.13
#1	-.0046	.0027	.0043	-.0010	.0425	-.0027	.0009
#2	-.0058	.0036	.0036	-.0010	.0428	-.0010	.0007
#3	-.0080	.0031	.0054	-.0010	.0401	-.0001	.0006

Sample Name: CALBLK1 Acquired: 12/10/2014 8:38:32 Type: Cal
Method: 2014v4(v15) Mode: IR Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_3710
Units	Cts/S
Avg	4251.9
Stddev	39.4
%RSD	.92668
#1	4267.1
#2	4207.1
#3	4281.4

Sample Name: CAL 1 Acquired: 12/10/2014 8:42:27 Type: Cal
Method: 2014v4(v15) Mode: IR Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.0174**	**.0395**	**.0012**	**.0103**	**.7098**	**.0968**	**.0223**	**.2806**	**.0089**
Stddev	.0003	.0025	.0001	.0003	.0160	.0022	.0005	.0065	.0000
%RSD	1.618	6.309	5.797	3.322	2.250	2.234	2.129	2.323	.5267
#1	.0174	.0422	.0011	.0099	.7271	.0992	.0227	.2870	.0089
#2	.0171	.0390	.0012	.0104	.7065	.0952	.0218	.2740	.0089
#3	.0176	.0372	.0012	.0105	.6957	.0958	.0223	.2807	.0090

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.0412**	**.0033**	**.0041**	**.0330**	**.6573**	**.1793**	**.0581**	**.0321**	**.0342**
Stddev	.0009	.0002	.0001	.0009	.0164	.0017	.0017	.0002	.0010
%RSD	2.237	6.291	2.318	2.621	2.495	.9391	2.927	.6950	2.824
#1	.0421	.0035	.0040	.0340	.6757	.1812	.0601	.0323	.0351
#2	.0402	.0031	.0042	.0323	.6520	.1787	.0571	.0321	.0331
#3	.0412	.0033	.0042	.0328	.6442	.1780	.0572	.0319	.0343

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.4328**	**.0511**	**.0373**	**.0019**	**.3033**	**.0007**	**.0013**	**.0423**	**.0289**
Stddev	.0089	.0011	.0010	.0000	.0074	.0001	.0001	.0016	.0006
%RSD	2.054	2.205	2.773	2.535	2.426	8.859	11.15	3.670	1.963
#1	.4430	.0522	.0384	.0019	.3108	.0007	.0015	.0440	.0294
#2	.4290	.0499	.0364	.0018	.2961	.0008	.0012	.0421	.0283
#3	.4265	.0512	.0372	.0018	.3030	.0007	.0013	.0409	.0289

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.1086**	**.0374**	**.0321**	**.0030**	**.0920**	**.0153**	**.0231**
Stddev	.0004	.0008	.0014	.0002	.0028	.0003	.0005
%RSD	.3967	2.193	4.234	5.693	3.092	1.880	1.988
#1	.1091	.0379	.0337	.0032	.0953	.0151	.0235
#2	.1085	.0364	.0314	.0029	.0899	.0156	.0226
#3	.1083	.0378	.0312	.0030	.0909	.0150	.0232

Sample Name: CAL 1 Acquired: 12/10/2014 8:42:27 Type: Cal
Method: 2014v4(v15) Mode: IR Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_3710
Units	Cts/S
Avg	4393.3
Stddev	92.9
%RSD	2.1156
#1	4303.3
#2	4489.0
#3	4387.5

Sample Name: Cal 2 Acquired: 12/10/2014 8:46:20 Type: Cal
Method: 2014v4(v15) Mode: IR Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1.808**	**10.20**	**.6241**	**.8926**	**69.43**	**95.23**	**.5574**	**13.38**	**9.312**
Stddev	.054	.29	.0172	.0217	1.79	4.23	.0139	.35	.238
%RSD	2.964	2.808	2.761	2.427	2.585	4.444	2.499	2.602	2.555
#1	1.811	10.34	.6327	.9019	69.95	98.18	.5648	13.56	9.428
#2	1.753	9.868	.6042	.8678	67.44	90.38	.5413	12.98	9.038
#3	1.860	10.39	.6353	.9080	70.91	97.14	.5661	13.61	9.470

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3.978**	**1.328**	**.7447**	**15.75**	**6.785**	**18.45**	**3.052**	**10.65**	**.8467**
Stddev	.103	.037	.0180	.44	.179	.49	.089	.31	.0233
%RSD	2.599	2.798	2.418	2.807	2.635	2.644	2.918	2.915	2.748
#1	4.030	1.327	.7532	15.99	6.875	18.70	3.090	10.78	.8588
#2	3.859	1.292	.7240	15.24	6.580	17.89	2.950	10.30	.8199
#3	4.045	1.366	.7569	16.02	6.902	18.77	3.116	10.88	.8614

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**24.49**	**6.072**	**7.713**	**1.073**	**3.052**	**.1411**	**.0833**	**.5025**	**1.432**
Stddev	.65	.154	.206	.027	.081	.0036	.0021	.0140	.038
%RSD	2.644	2.534	2.669	2.482	2.644	2.569	2.484	2.791	2.655
#1	24.82	6.149	7.807	1.087	3.092	.1430	.0842	.5101	1.452
#2	23.74	5.895	7.477	1.042	2.959	.1369	.0809	.4864	1.389
#3	24.90	6.171	7.856	1.090	3.105	.1433	.0847	.5112	1.457

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**112.8**	**.8981**	**7.332**	**.1788**	**.6343**	**1.702**	**5.557**
Stddev	3.9	.0218	.207	.0043	.0177	.051	.144
%RSD	3.428	2.425	2.820	2.403	2.797	3.002	2.599
#1	114.6	.8990	7.421	.1809	.6382	1.727	5.626
#2	108.3	.8758	7.096	.1738	.6149	1.643	5.391
#3	115.3	.9194	7.480	.1816	.6497	1.736	5.655

Sample Name: Cal 2 Acquired: 12/10/2014 8:46:20 Type: Cal
Method: 2014v4(v15) Mode: IR Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_3710
Units	Cts/S
Avg	4060.2
Stddev	111.3
%RSD	2.7404
#1	4039.0
#2	4180.6
#3	3961.1

Sample Name: Cal 3 Acquired: 12/10/2014 8:50:09 Type: Cal
Method: 2014v4(v15) Mode: IR Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3.534**	**20.19**	**1.216**	**1.726**	**134.5**	**181.2**	**1.077**	**25.31**	**18.00**
Stddev	.029	.07	.011	.002	1.7	1.0	.010	.25	.16
%RSD	.8118	.3250	.9150	.1095	1.300	.5597	.9343	1.006	.9161
#1	3.510	20.27	1.206	1.727	136.5	182.1	1.067	25.10	17.85
#2	3.525	20.17	1.215	1.724	133.2	181.4	1.077	25.25	17.97
#3	3.565	20.14	1.228	1.727	133.8	180.1	1.087	25.59	18.17

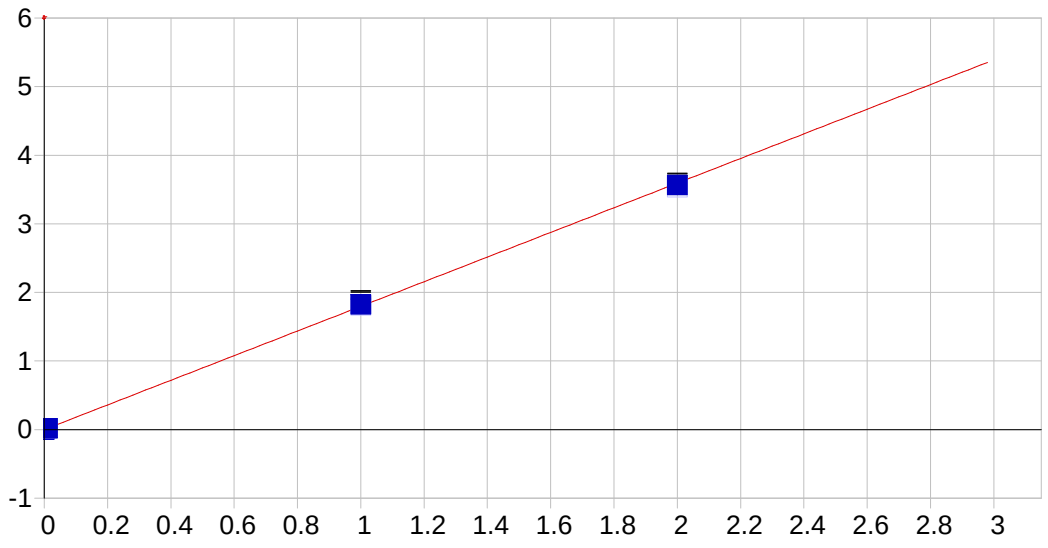
Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**7.589**	**2.527**	**1.442**	**30.10**	**13.36**	**35.93**	**5.985**	**20.53**	**1.632**
Stddev	.065	.025	.014	.06	.04	.10	.004	.04	.016
%RSD	.8500	.9963	.9995	.2096	.3164	.2865	.0632	.2156	.9765
#1	7.528	2.503	1.427	30.03	13.41	36.05	5.988	20.58	1.618
#2	7.584	2.525	1.441	30.10	13.35	35.89	5.987	20.51	1.629
#3	7.656	2.553	1.456	30.16	13.32	35.86	5.981	20.50	1.649

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**47.65**	**11.53**	**14.51**	**2.044**	**6.000**	**.2763**	**.1633**	**.9857**	**2.738**
Stddev	.05	.11	.13	.020	.053	.0027	.0015	.0012	.026
%RSD	.0983	.9425	.9097	.9750	.8809	.9906	.9229	.1220	.9352
#1	47.67	11.44	14.38	2.026	5.953	.2735	.1619	.9843	2.714
#2	47.60	11.51	14.50	2.040	5.990	.2764	.1633	.9866	2.736
#3	47.69	11.65	14.64	2.065	6.057	.2789	.1649	.9862	2.765

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**215.5**	**1.724**	**14.26**	**.3371**	**1.186**	**3.279**	**10.64**
Stddev	2.1	.020	.03	.0029	.007	.011	.09
%RSD	.9682	1.134	.2322	.8725	.5614	.3299	.8706
#1	217.8	1.703	14.29	.3342	1.181	3.292	10.55
#2	213.9	1.725	14.26	.3369	1.182	3.271	10.63
#3	214.7	1.742	14.22	.3401	1.193	3.275	10.74

Sample Name: Cal 3 Acquired: 12/10/2014 8:50:09 Type: Cal
Method: 2014v4(v15) Mode: IR Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_3710
Units	Cts/S
Avg	4110.8
Stddev	36.9
%RSD	.89647
#1	4146.0
#2	4113.8
#3	4072.5

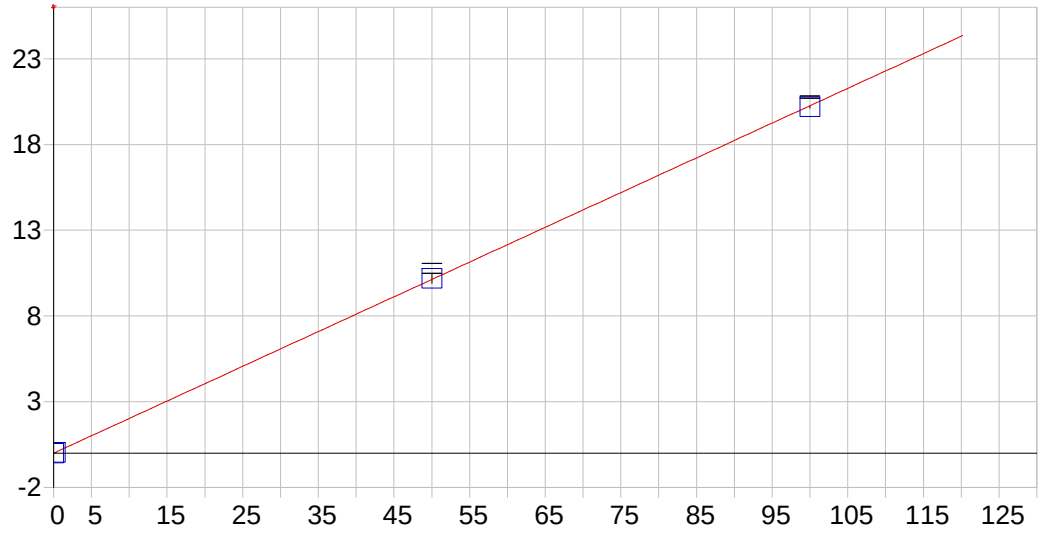


Ag 328.068 {103}

Date of Fit:	12/10/2014 8:53:49	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000194	Re-Slope:	1.000000
A1 (Gain):	1.796395	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999940	Status:	OK.
Std Error of Est:	0.000151		
Predicted MDL:	0.000557		
Predicted MQL:	0.001856		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00019	.001	1
CAL 1	.01000	.00992	.000	-.788	.01738	.000	1
Cal 2	1.0000	1.0153	.015	1.53	1.8081	.054	1
Cal 3	2.0000	1.9847	-.015	-.763	3.5335	.029	1



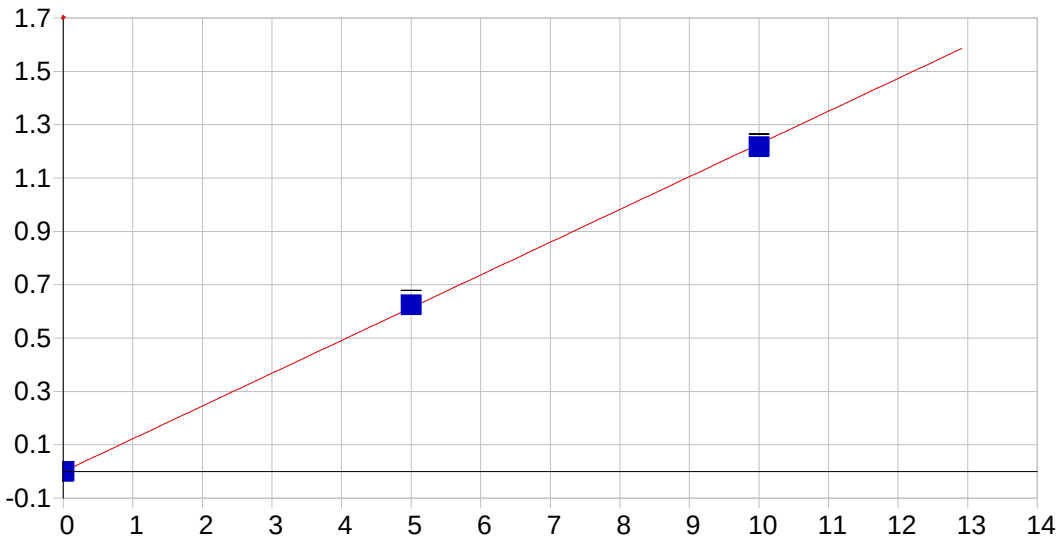
Al 396.152 { 85}

Date of Fit:	12/10/2014 8:53:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.001261	Re-Slope:	1.000000

A1 (Gain):	0.202620	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999989	Status:	OK.
Std Error of Est:	0.000235		
Predicted MDL:	0.007884		
Predicted MQL:	0.026281		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	-.00126	.002	1
CAL 1	.20000	.20101	.001	.505	.03947	.002	1
Cal 2	50.000	50.335	.335	.670	10.198	.286	1
Cal 3	100.00	99.664	-.336	-.336	20.193	.066	1

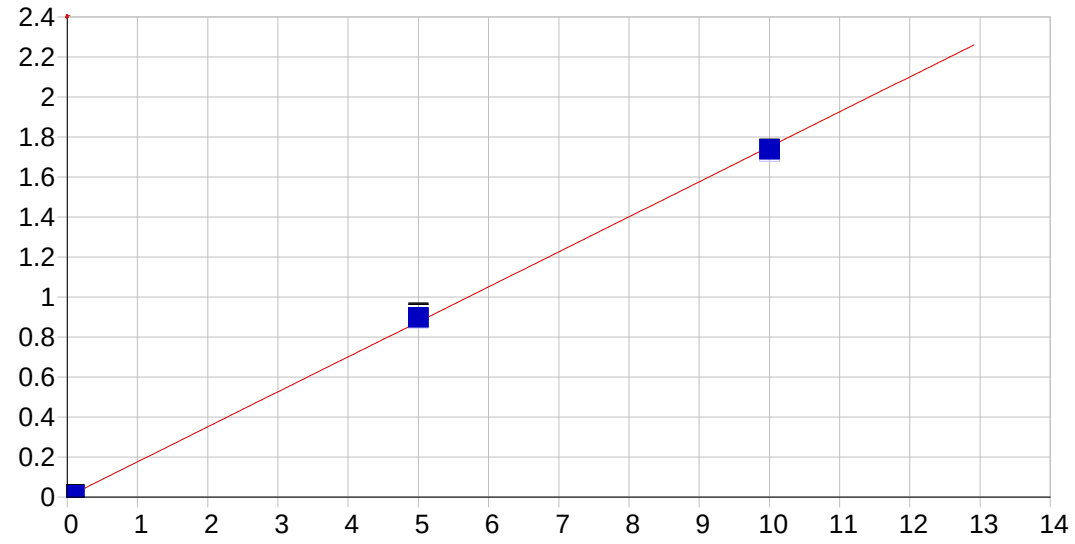


As 189.042 {478}

Date of Fit:	12/10/2014 8:53:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000210	Re-Slope:	1.000000
A1 (Gain):	0.122808	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999918	Status:	OK.
Std Error of Est:	0.000027		
Predicted MDL:	0.000970		
Predicted MQL:	0.003234		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	-.00021	.000	1
CAL 1	.01000	.01134	.001	13.4	.00118	.000	1
Cal 2	5.0000	5.0867	.087	1.73	.62409	.017	1
Cal 3	10.000	9.9120	-.088	-.880	1.2163	.011	1

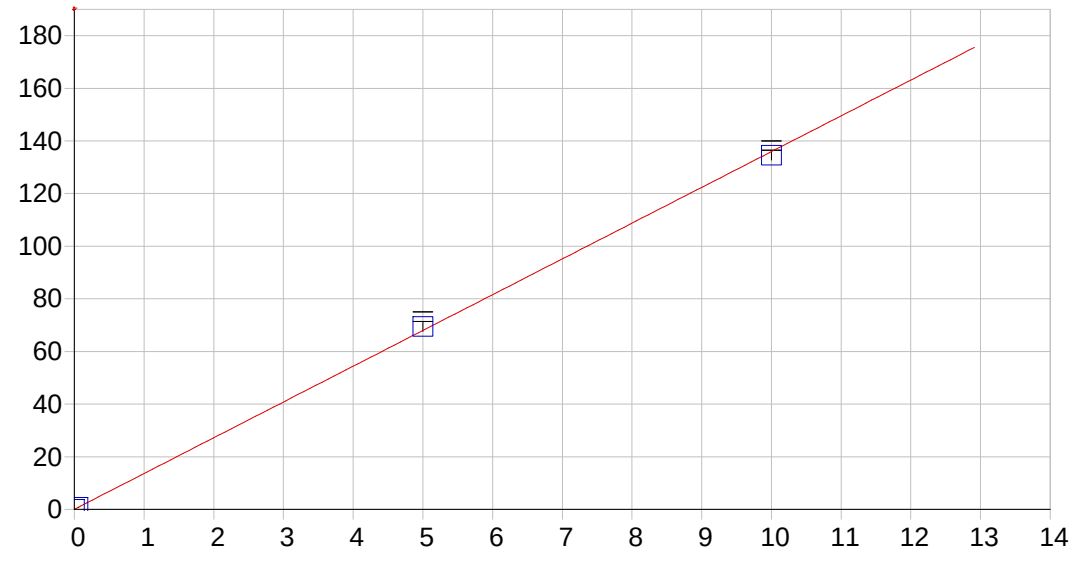


B 249.678 {135}

Date of Fit:	12/10/2014 8:53:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.001299	Re-Slope:	1.000000
A1 (Gain):	0.174936	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999076	Status:	OK.
Std Error of Est:	0.000411		
Predicted MDL:	0.002721		
Predicted MQL:	0.009071		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00005	.000	.000	.00131	.000	1
CAL 1	.10000	.05125	-.049	-48.8	.01027	.000	1
Cal 2	5.0000	5.1265	.127	2.53	.89255	.022	1
Cal 3	10.000	9.9225	-.077	-.775	1.7260	.002	1



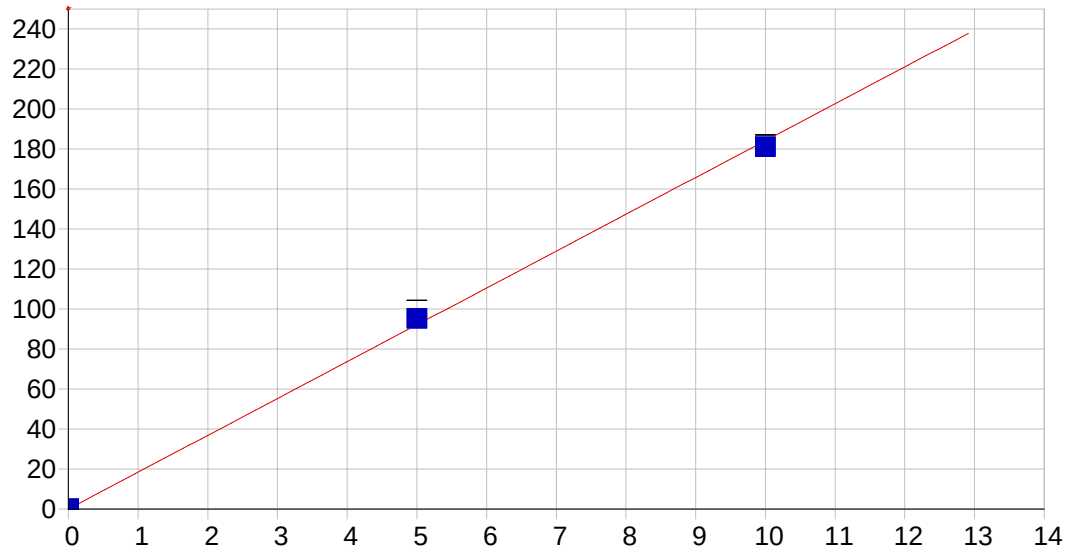
Ba 455.403 { 74}

Date of Fit:	12/10/2014 8:53:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.022627	Re-Slope:	1.000000
A1 (Gain):	13.592560	Y-int:	0.000000

A2 (Curvature):		0.000000					
n (Exponent):		1.000000					
Correlation:		0.999886		Status:	OK.		
Std Error of Est:		0.007944					
Predicted MDL:		0.000158					
Predicted MQL:		0.000527					

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.02261	.003	1
CAL 1	.05000	.05055	.001	1.10	.70976	.016	1
Cal 2	5.0000	5.1065	.106	2.13	69.433	1.79	1
Cal 3	10.000	9.8930	-.107	-1.07	134.49	1.75	1

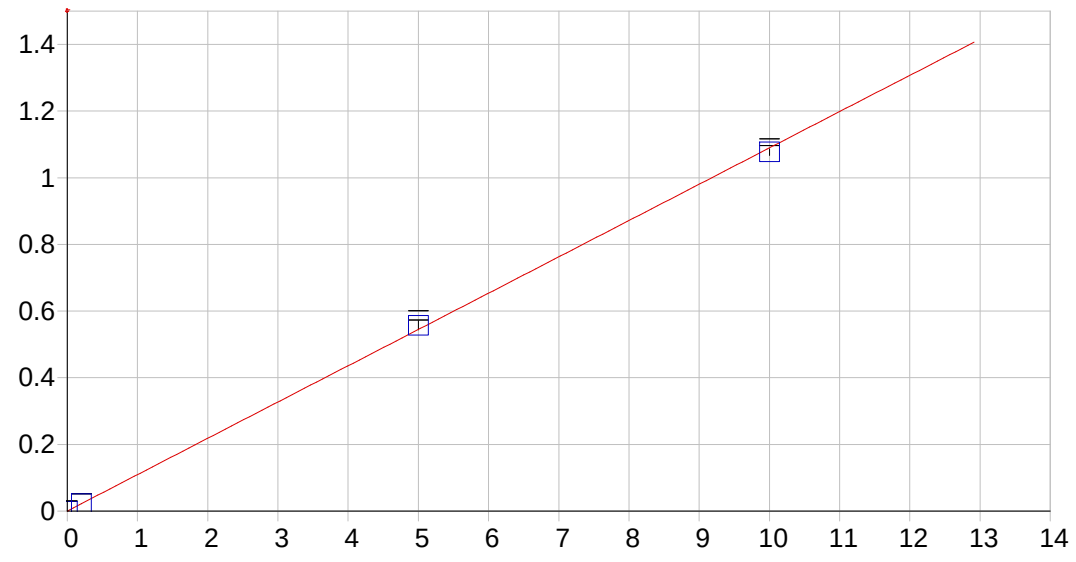


Be 313.042 {108}

Date of Fit:	12/10/2014 8:53:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000936	Re-Slope:	1.000000
A1 (Gain):	18.422331	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999719	Status:	OK.
Std Error of Est:	0.005348		
Predicted MDL:	0.000039		
Predicted MQL:	0.000129		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00093	.000	1
CAL 1	.00500	.00518	.000	3.65	.09675	.002	1
Cal 2	5.0000	5.1676	.168	3.35	95.234	4.23	1
Cal 3	10.000	9.8322	-.168	-1.68	181.20	1.01	1

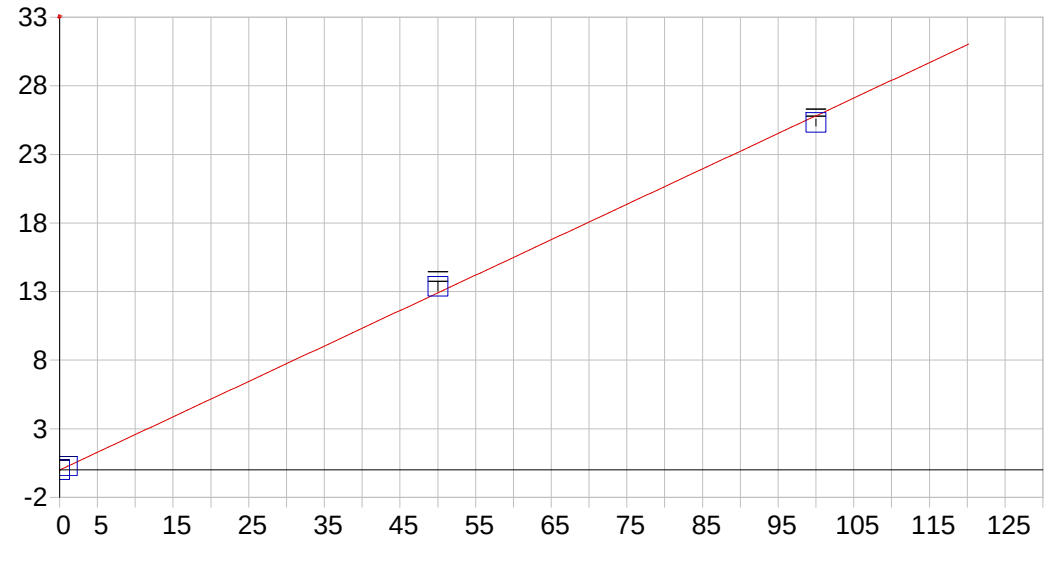


Bi 223.061 {451}

Date of Fit:	12/10/2014 8:53:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000478	Re-Slope:	1.000000
A1 (Gain):	0.108901	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999871	Status:	OK.
Std Error of Est:	0.000136		
Predicted MDL:	0.001870		
Predicted MQL:	0.006234		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00048	.000	1
CAL 1	.20000	.19997	.000	-.013	.02226	.000	1
Cal 2	5.0000	5.1141	.114	2.28	.55741	.014	1
Cal 3	10.000	9.8859	-.114	-1.14	1.0771	.010	1



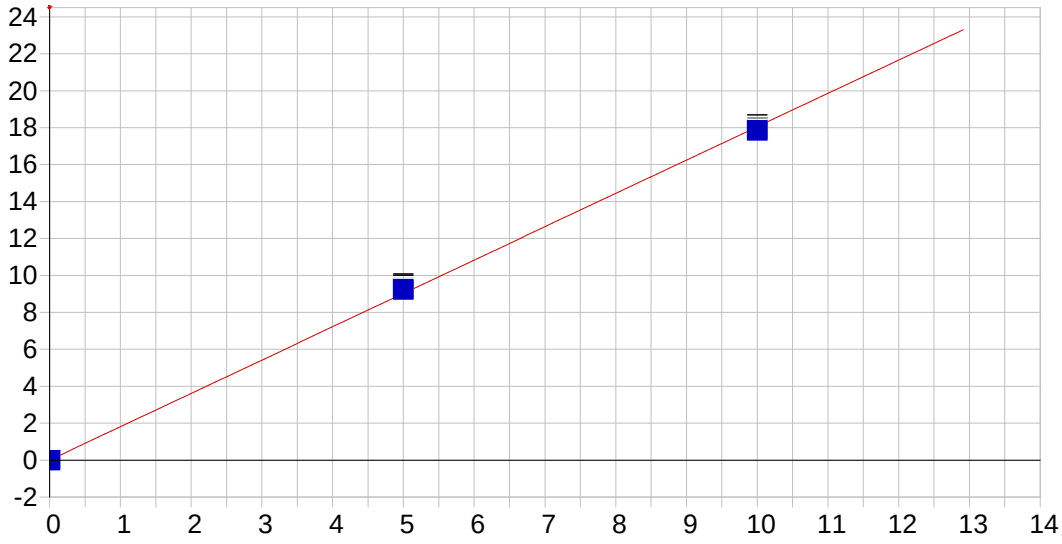
Ca 184.006 {483}

Date of Fit:	12/10/2014 8:53:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.003473	Re-Slope:	1.000000
A1 (Gain):	0.258203	Y-int:	0.000000

A2 (Curvature):		0.000000					
n (Exponent):		1.000000					
Correlation:		0.999615		Status:	OK.		
Std Error of Est:		0.003937					
Predicted MDL:		0.000449					
Predicted MQL:		0.001495					

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	-.00012	.000	.000	-.00350	.000	1
CAL 1	1.0000	1.1000	.100	10.0	.28056	.007	1
Cal 2	50.000	51.849	1.85	3.70	13.384	.348	1
Cal 3	100.00	98.051	-1.95	-1.95	25.314	.255	1

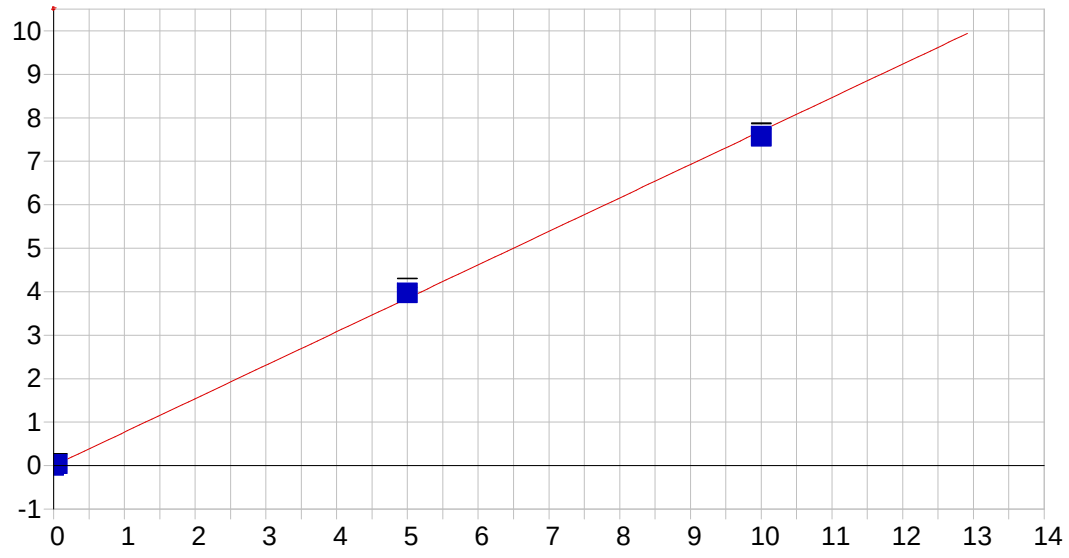


Cd 228.802 {447}

Date of Fit:	12/10/2014 8:53:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000016	Re-Slope:	1.000000
A1 (Gain):	1.805231	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999867	Status:	OK.
Std Error of Est:	0.000363		
Predicted MDL:	0.000109		
Predicted MQL:	0.000365		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00002	.000	1
CAL 1	.00500	.00491	.000	-1.85	.00894	.000	1
Cal 2	5.0000	5.1161	.116	2.32	9.3119	.238	1
Cal 3	10.000	9.8840	-.116	-1.16	17.995	.165	1

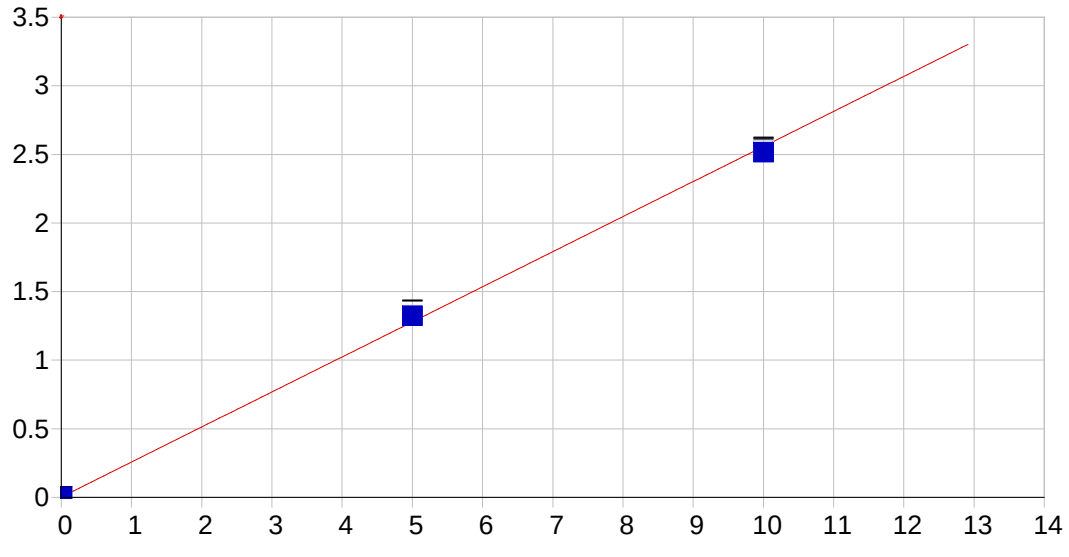


Co 228.616 {448}

Date of Fit:	12/10/2014 8:53:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000173	Re-Slope:	1.000000
A1 (Gain):	0.769624	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999740	Status:	OK.
Std Error of Est:	0.000682		
Predicted MDL:	0.000201		
Predicted MQL:	0.000670		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	-.00018	.000	1
CAL 1	.05000	.05368	.004	7.37	.04118	.001	1
Cal 2	5.0000	5.1579	.158	3.16	3.9782	.103	1
Cal 3	10.000	9.8385	-.162	-1.62	7.5893	.065	1



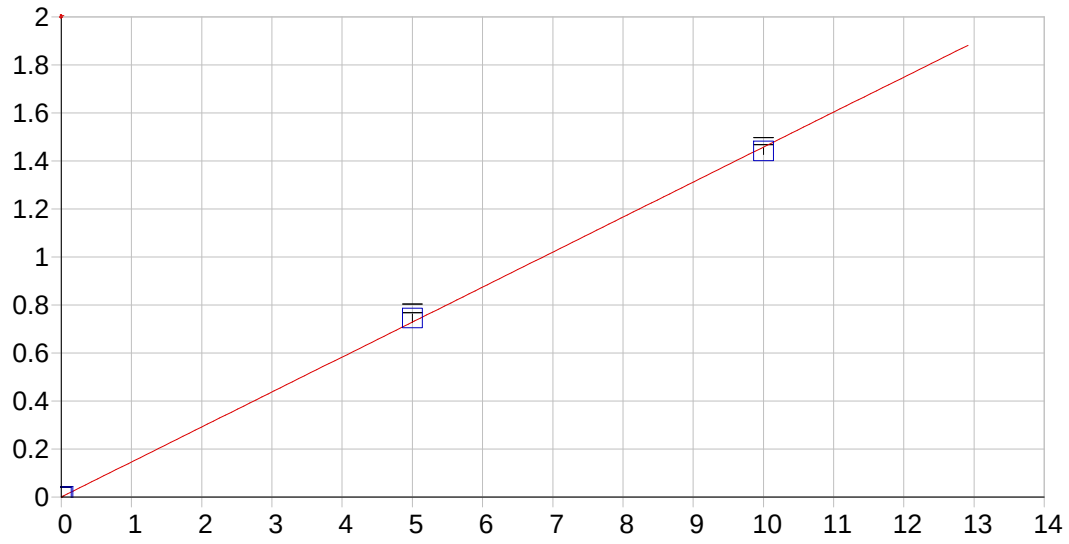
Cr 283.563 {119}

Date of Fit:	12/10/2014 8:53:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.001582	Re-Slope:	1.000000
A1 (Gain):	0.255595	Y-int:	0.000000

A2 (Curvature):		0.000000					
n (Exponent):		1.000000					
Correlation:		0.999718		Status:	OK.		
Std Error of Est:		0.000106					
Predicted MDL:		0.000771					
Predicted MQL:		0.002569					

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00158	.000	1
CAL 1	.01000	.00858	-.001	-14.2	.00330	.000	1
Cal 2	5.0000	5.1672	.167	3.34	1.3283	.037	1
Cal 3	10.000	9.8340	-.166	-1.66	2.5270	.025	1

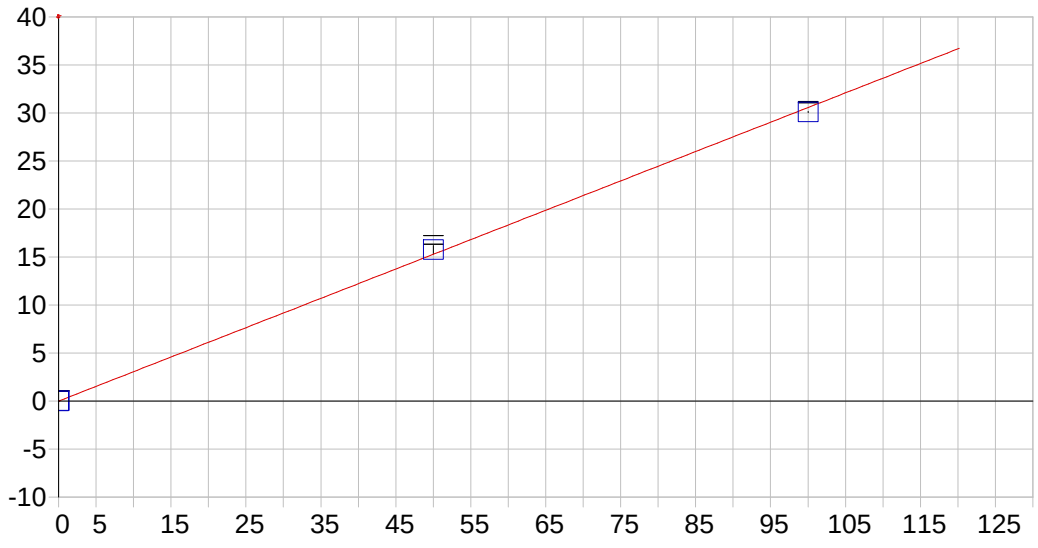


Cu 217.894 {455}

Date of Fit:	12/10/2014 8:53:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000356	Re-Slope:	1.000000
A1 (Gain):	0.145712	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999880	Status:	OK.
Std Error of Est:	0.000062		
Predicted MDL:	0.001278		
Predicted MQL:	0.004261		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00036	.000	1
CAL 1	.02500	.02602	.001	4.07	.00415	.000	1
Cal 2	5.0000	5.1085	.108	2.17	.74472	.018	1
Cal 3	10.000	9.8905	-.109	-1.09	1.4415	.014	1

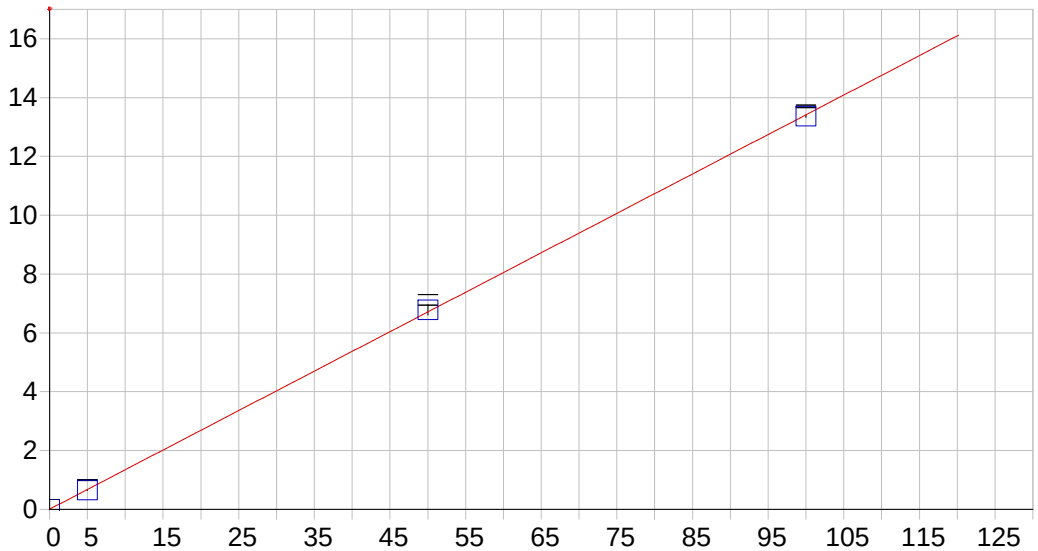


Fe 259.940 {130}

Date of Fit:	12/10/2014 8:53:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000030	Re-Slope:	1.000000
A1 (Gain):	0.305677	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999761	Status:	OK.
Std Error of Est:	0.001157		
Predicted MDL:	0.001548		
Predicted MQL:	0.005161		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	-.00001	.000	.000	-.00003	.000	1
CAL 1	.10000	.10819	.008	8.19	.03304	.001	1
Cal 2	50.000	51.536	1.54	3.07	15.753	.442	1
Cal 3	100.00	98.456	-1.54	-1.54	30.096	.063	1



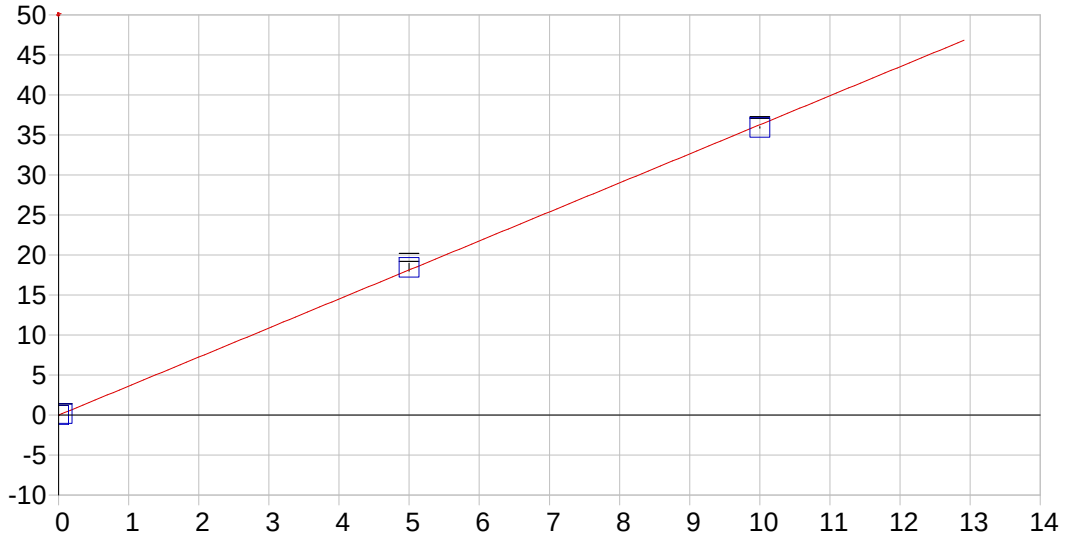
K 766.490 { 44}

Date of Fit:	12/10/2014 8:53:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.006591	Re-Slope:	1.000000
A1 (Gain):	0.134089	Y-int:	0.000000

A2 (Curvature):		0.000000					
n (Exponent):		1.000000					
Correlation:		0.999961		Status:	OK.		
Std Error of Est:		0.001478					
Predicted MDL:		0.025386					
Predicted MQL:		0.084621					

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00011	.000	.000	.00661	.003	1
CAL 1	5.0000	4.8529	-.147	-2.94	.65731	.016	1
Cal 2	50.000	50.555	.555	1.11	6.7855	.179	1
Cal 3	100.00	99.592	-.408	-.408	13.361	.042	1

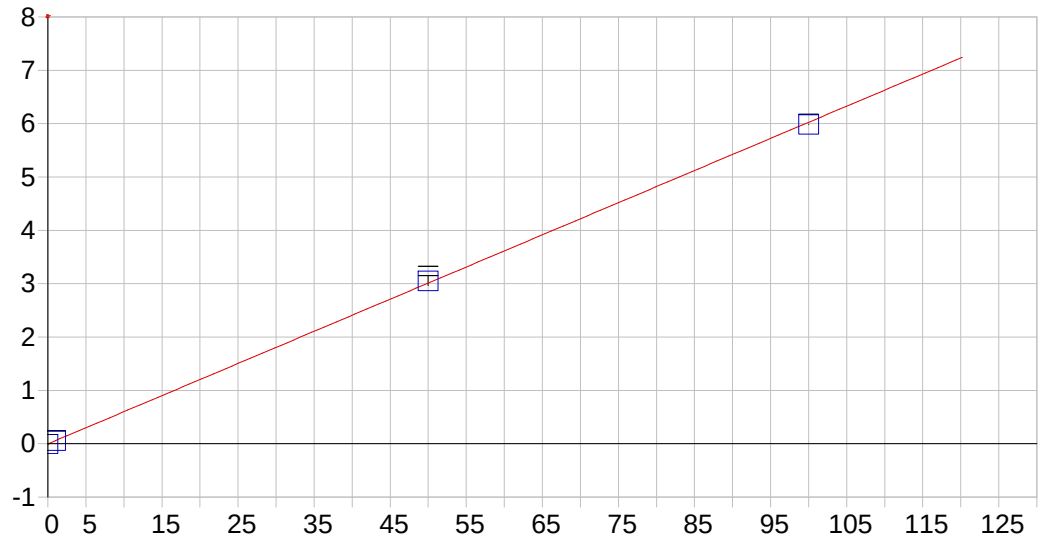


Li 670.784 { 50}

Date of Fit:	12/10/2014 8:53:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.009970	Re-Slope:	1.000000
A1 (Gain):	3.627573	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999916	Status:	OK.
Std Error of Est:	0.001829		
Predicted MDL:	0.000965		
Predicted MQL:	0.003217		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	-.00998	.006	1
CAL 1	.05000	.05217	.002	4.34	.17928	.002	1
Cal 2	5.0000	5.0896	.090	1.79	18.453	.488	1
Cal 3	10.000	9.9082	-.092	-.918	35.933	.103	1

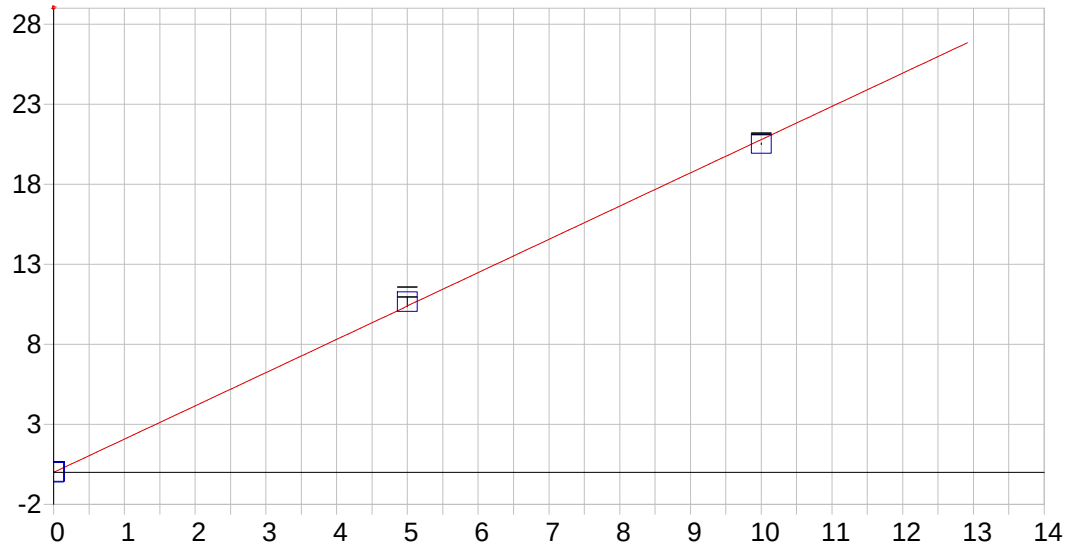


Mg 279.806 {121}

Date of Fit:	12/10/2014 8:53:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.002144	Re-Slope:	1.000000
A1 (Gain):	0.060277	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999955	Status:	OK.
Std Error of Est:	0.000313		
Predicted MDL:	0.009082		
Predicted MQL:	0.030273		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	-.00001	.000	.000	-.00214	.000	1
CAL 1	1.0000	.99996	.000	-.004	.05813	.002	1
Cal 2	50.000	50.670	.670	1.34	3.0521	.089	1
Cal 3	100.00	99.330	-.670	-.670	5.9852	.004	1



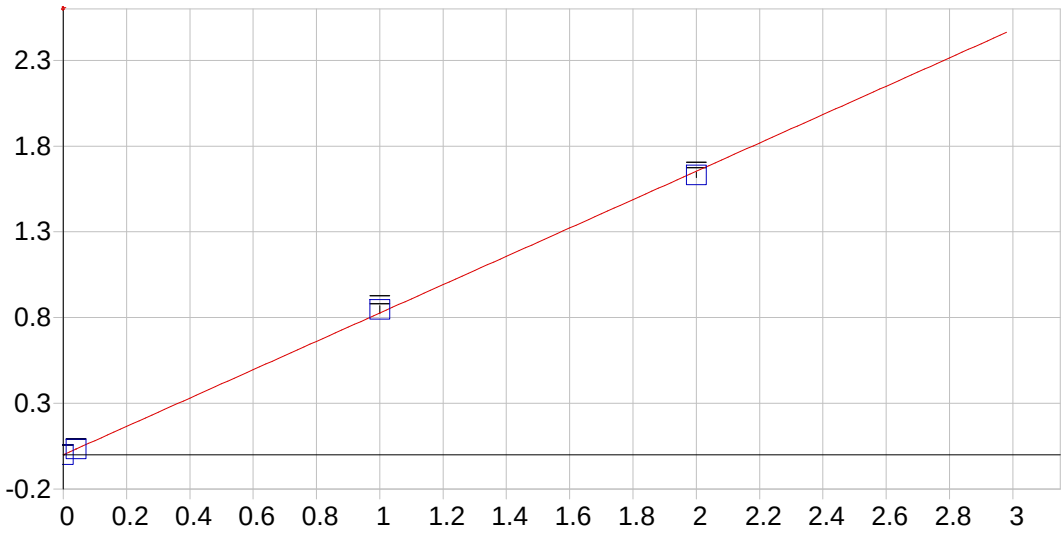
Mn 257.610 {131}

Date of Fit:	12/10/2014 8:53:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000147	Re-Slope:	1.000000
A1 (Gain):	2.078908	Y-int:	0.000000

A2 (Curvature):		0.000000					
n (Exponent):		1.000000					
Correlation:		0.999848		Status:	OK.		
Std Error of Est:		0.000769					
Predicted MDL:		0.000241					
Predicted MQL:		0.000802					

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00015	.000	1
CAL 1	.01500	.01538	.000	2.53	.03212	.000	1
Cal 2	5.0000	5.1232	.123	2.46	10.651	.310	1
Cal 3	10.000	9.8764	-.124	-1.24	20.532	.044	1

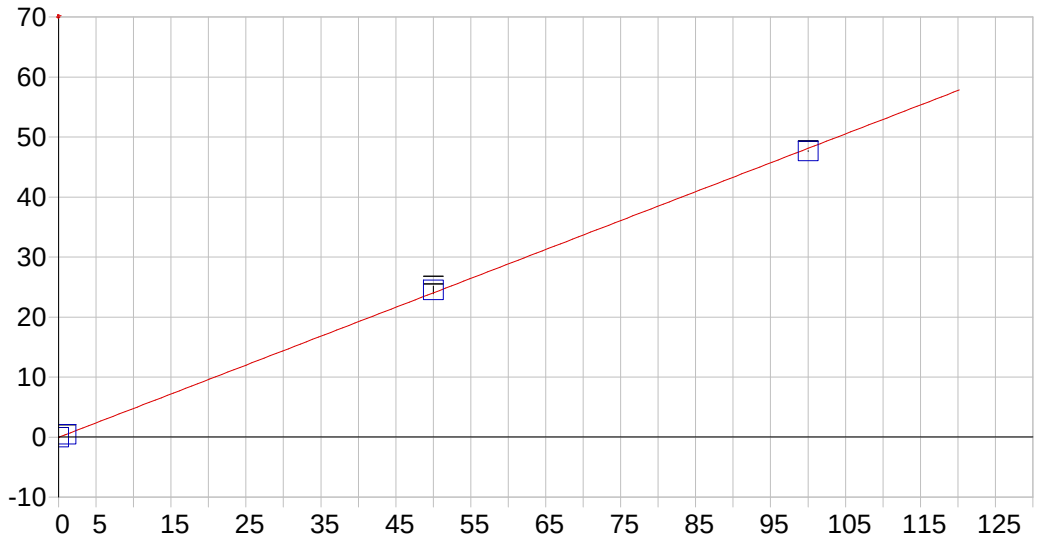


Mo 202.030 {467}

Date of Fit:	12/10/2014 8:53:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000003	Re-Slope:	1.000000
A1 (Gain):	0.826577	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999841	Status:	OK.
Std Error of Est:	0.000230		
Predicted MDL:	0.000174		
Predicted MQL:	0.000580		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00000	.000	1
CAL 1	.04000	.04133	.001	3.32	.03416	.001	1
Cal 2	1.0000	1.0243	.024	2.43	.84669	.023	1
Cal 3	2.0000	1.9743	-.026	-1.28	1.6319	.016	1

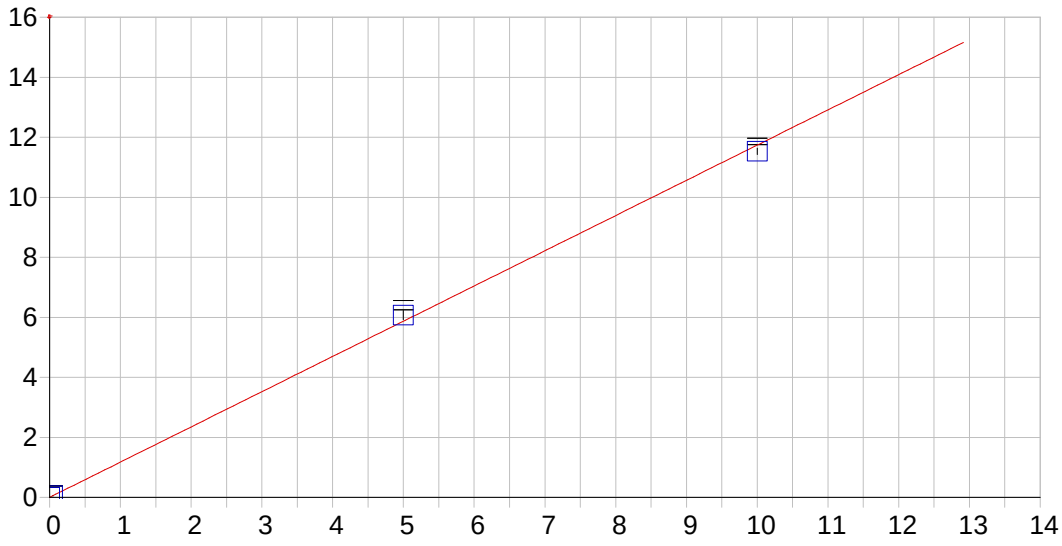


Na 589.592 { 57}

Date of Fit:	12/10/2014 8:53:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.042993	Re-Slope:	1.000000
A1 (Gain):	0.481487	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999910	Status:	OK.
Std Error of Est:	0.003543		
Predicted MDL:	0.007332		
Predicted MQL:	0.024442		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	-.04299	.003	1
CAL 1	1.0000	.98824	-.012	-1.18	.43283	.009	1
Cal 2	50.000	50.952	.952	1.90	24.490	.647	1
Cal 3	100.00	99.060	-.940	-.940	47.653	.047	1



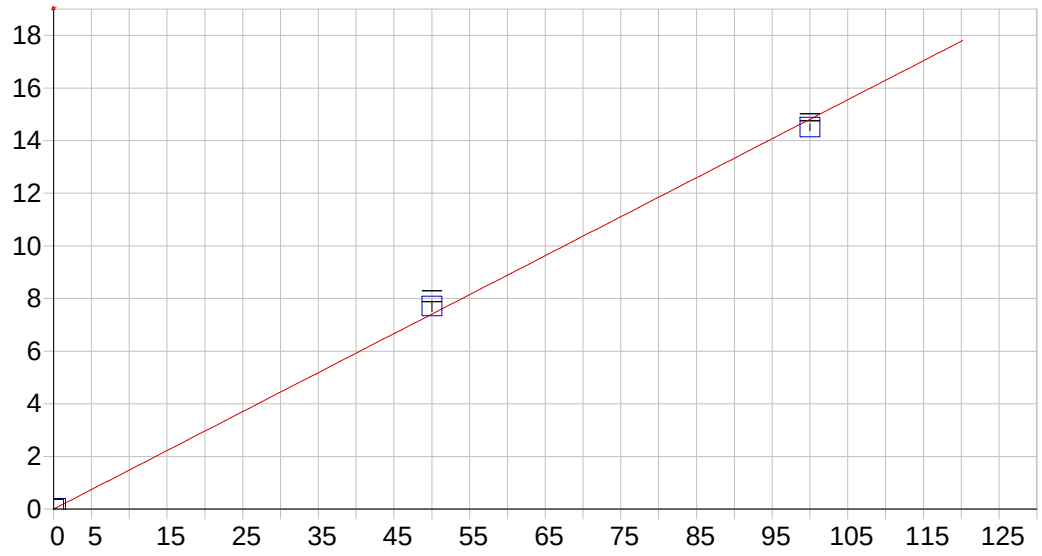
Ni 221.647 {452}

Date of Fit:	12/10/2014 8:53:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000721	Re-Slope:	1.000000
A1 (Gain):	1.173795	Y-int:	0.000000

A2 (Curvature):	0.000000					
n (Exponent):	1.000000					
Correlation:	0.999694		Status:	OK.		
Std Error of Est:	0.001007					
Predicted MDL:	0.000187					
Predicted MQL:	0.000622					

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00072	.000	1
CAL 1	.04000	.04293	.003	7.33	.05111	.001	1
Cal 2	5.0000	5.1721	.172	3.44	6.0717	.154	1
Cal 3	10.000	9.8249	-.175	-1.75	11.533	.109	1

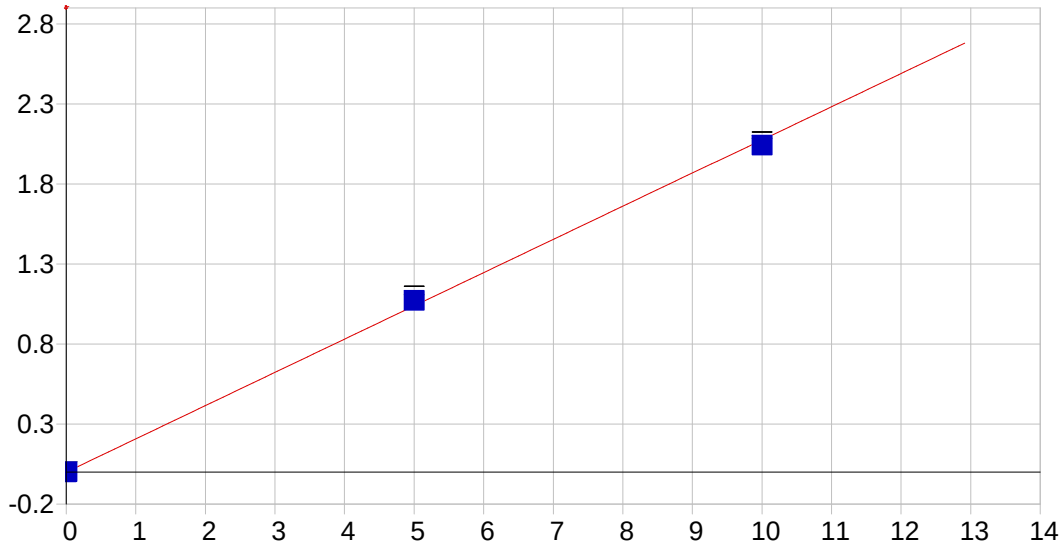


P 177.495 {490}

Date of Fit:	12/10/2014 8:53:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000139	Re-Slope:	1.000000
A1 (Gain):	0.148141	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999573	Status:	OK.
Std Error of Est:	0.001186		
Predicted MDL:	0.000750		
Predicted MQL:	0.002501		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	-.00001	.000	.000	.00014	.000	1
CAL 1	.25000	.25112	.001	.450	.03734	.001	1
Cal 2	50.000	52.067	2.07	4.13	7.7135	.206	1
Cal 3	100.00	97.931	-2.07	-2.07	14.508	.132	1

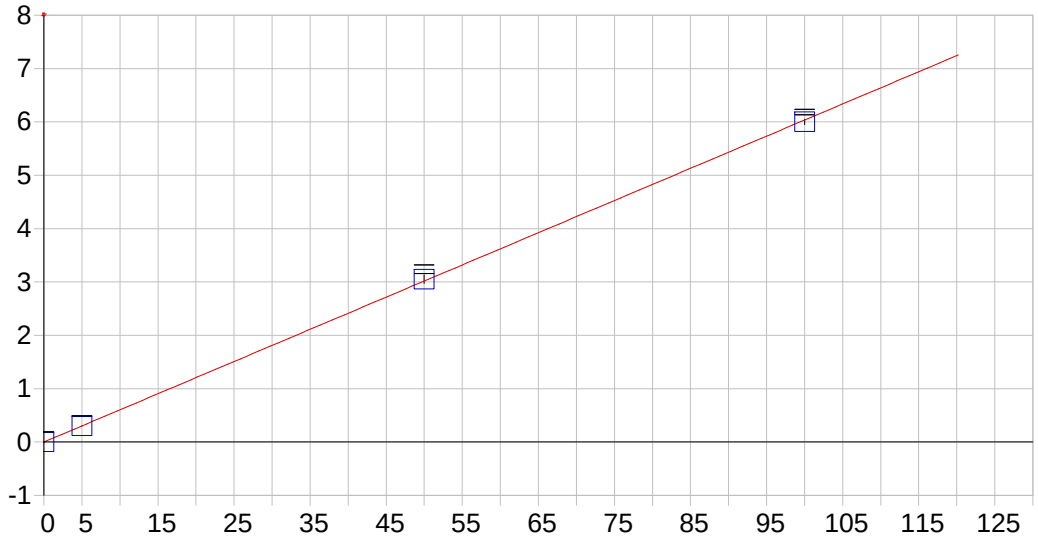


Pb 220.353 {453}

Date of Fit:	12/10/2014 8:53:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000400	Re-Slope:	1.000000
A1 (Gain):	0.207628	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999728	Status:	OK.
Std Error of Est:	0.000084		
Predicted MDL:	0.000880		
Predicted MQL:	0.002932		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	-.00040	.000	1
CAL 1	.01000	.01031	.000	3.11	.00186	.000	1
Cal 2	5.0000	5.1649	.165	3.30	1.0731	.027	1
Cal 3	10.000	9.8347	-.165	-1.65	2.0439	.020	1



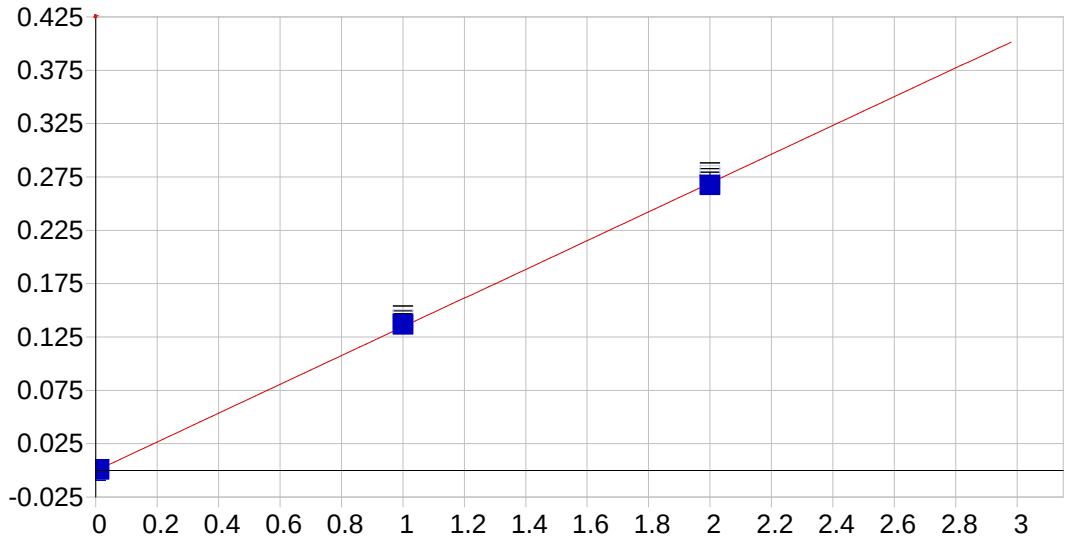
S 182.034 {485}

Date of Fit:	12/10/2014 8:53:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000156	Re-Slope:	1.000000
A1 (Gain):	0.060358	Y-int:	0.000000

A2 (Curvature):	0.000000					
n (Exponent):	1.000000					
Correlation:	0.999967		Status:	OK.		
Std Error of Est:	0.000608					
Predicted MDL:	0.001807					
Predicted MQL:	0.006023					

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	-.00005	.000	.000	-.00016	.000	1
CAL 1	5.0000	5.0271	.027	.542	.30327	.007	1
Cal 2	50.000	50.568	.568	1.14	3.0520	.081	1
Cal 3	100.00	99.405	-.595	-.595	5.9997	.053	1

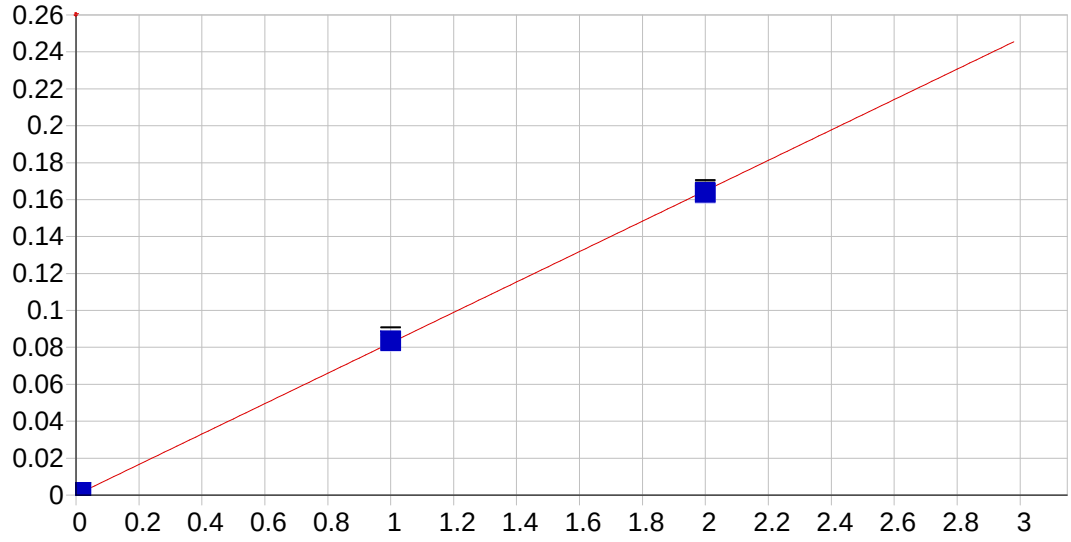


Sb 206.833 {463}

Date of Fit:	12/10/2014 8:53:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000326	Re-Slope:	1.000000
A1 (Gain):	0.134815	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999862	Status:	OK.
Std Error of Est:	0.000018		
Predicted MDL:	0.001347		
Predicted MQL:	0.004491		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	-.00033	.000	1
CAL 1	.01000	.00770	-.002	-23.0	.00071	.000	1
Cal 2	1.0000	1.0161	.016	1.61	.14109	.004	1
Cal 3	2.0000	1.9861	-.014	-.696	.27628	.003	1

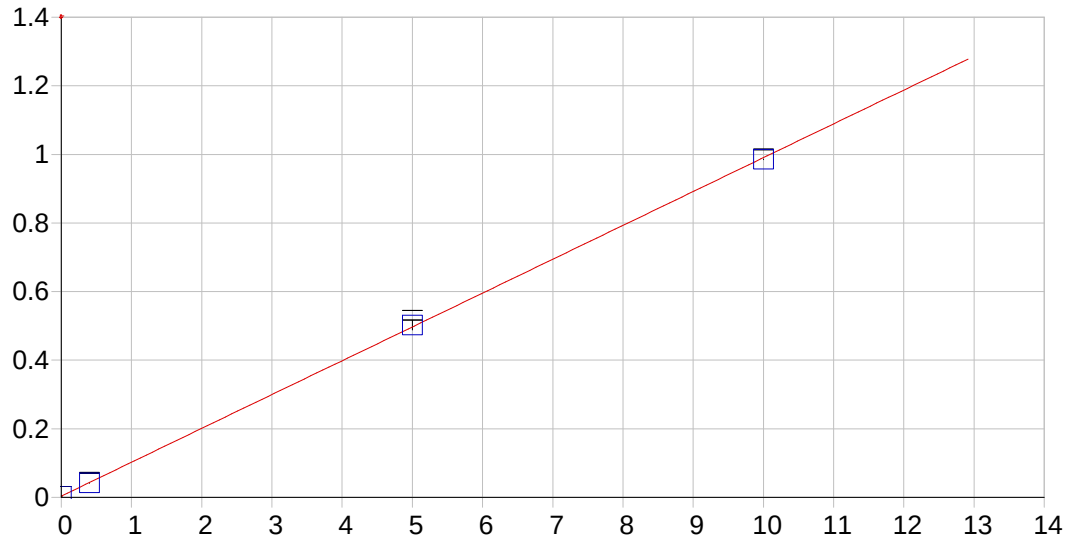


Se 196.090 {472}

Date of Fit:	12/10/2014 8:53:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000158	Re-Slope:	1.000000
A1 (Gain):	0.082335	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999952	Status:	OK.
Std Error of Est:	0.000008		
Predicted MDL:	0.001648		
Predicted MQL:	0.005492		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00016	.000	1
CAL 1	.01500	.01406	-.001	-6.25	.00132	.000	1
Cal 2	1.0000	1.0127	.013	1.27	.08328	.002	1
Cal 3	2.0000	1.9883	-.012	-.586	.16335	.002	1



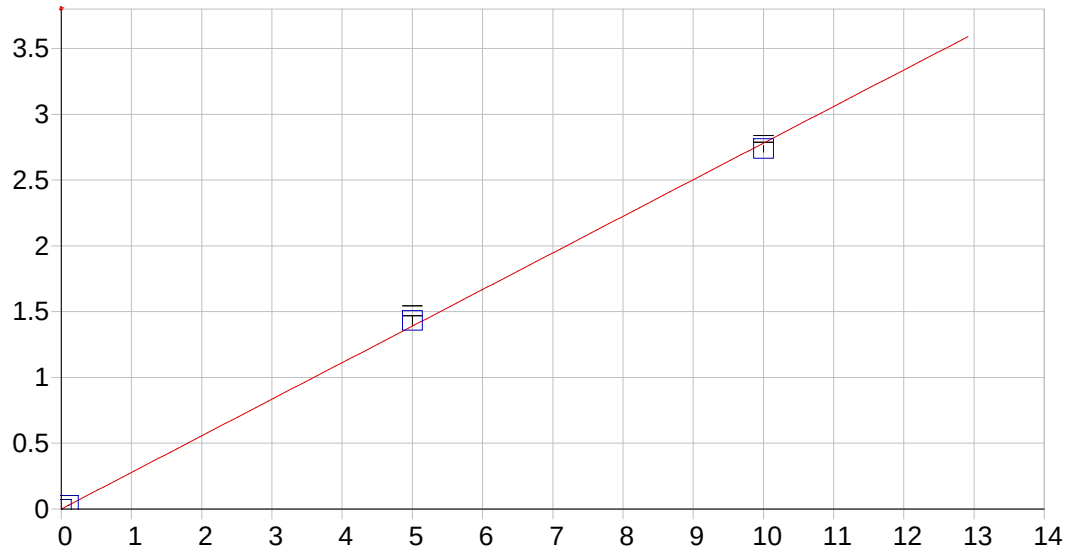
Si 251.611 {134}

Date of Fit:	12/10/2014 8:53:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.003736	Re-Slope:	1.000000
A1 (Gain):	0.098659	Y-int:	0.000000

A2 (Curvature):		0.000000					
n (Exponent):		1.000000					
Correlation:		0.999966		Status:	OK.		
Std Error of Est:		0.000090					
Predicted MDL:		0.004939					
Predicted MQL:		0.016463					

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00001	.000	.000	.00374	.000	1
CAL 1	.40000	.39097	-.009	-2.26	.04231	.002	1
Cal 2	5.0000	5.0558	.056	1.12	.50254	.014	1
Cal 3	10.000	9.9532	-.047	-.468	.98571	.001	1

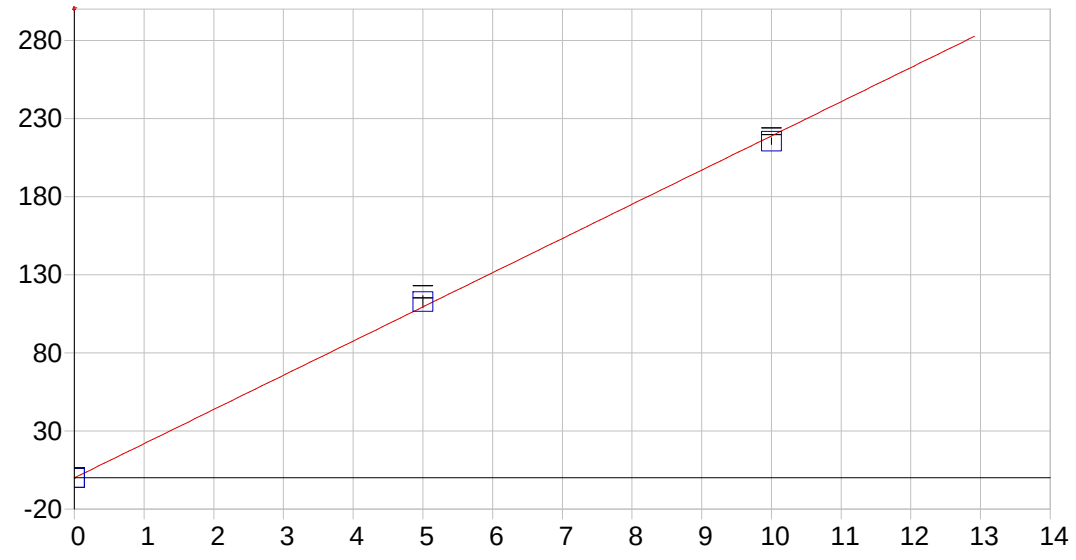


Sn 189.989 {478}

Date of Fit:	12/10/2014 8:53:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000172	Re-Slope:	1.000000
A1 (Gain):	0.278076	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999768	Status:	OK.
Std Error of Est:	0.000329		
Predicted MDL:	0.000371		
Predicted MQL:	0.001237		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00017	.000	1
CAL 1	.10000	.10323	.003	3.23	.02888	.001	1
Cal 2	5.0000	5.1506	.151	3.01	1.4324	.038	1
Cal 3	10.000	9.8461	-.154	-1.54	2.7381	.026	1

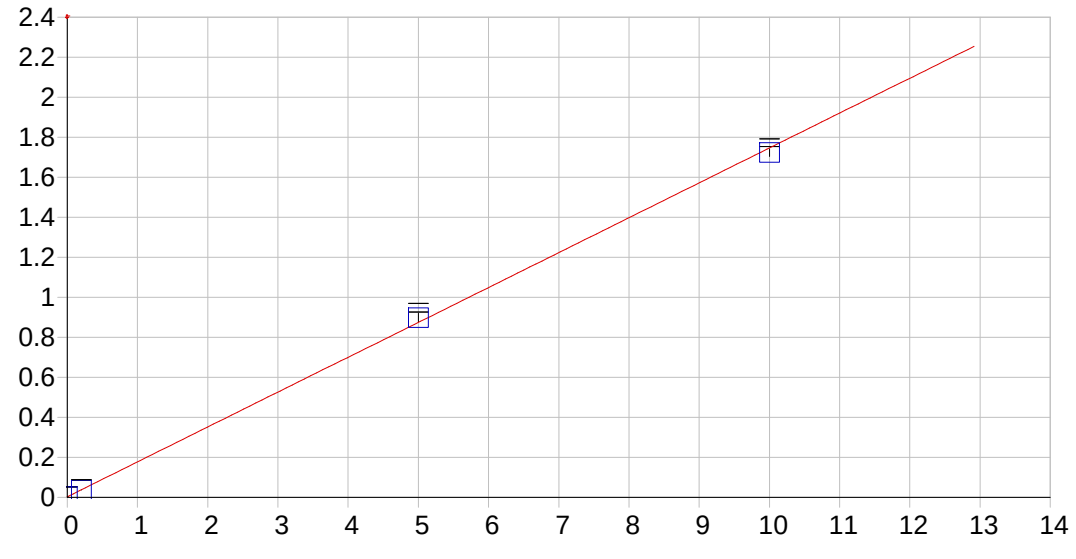


Sr 407.771 { 83}

Date of Fit:	12/10/2014 8:53:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.006127	Re-Slope:	1.000000
A1 (Gain):	21.883133	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999765	Status:	OK.
Std Error of Est:	0.005808		
Predicted MDL:	0.000062		
Predicted MQL:	0.000207		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	-.00613	.002	1
CAL 1	.00500	.00524	.000	4.88	.10863	.000	1
Cal 2	5.0000	5.1531	.153	3.06	112.76	3.87	1
Cal 3	10.000	9.8467	-.153	-1.53	215.47	2.09	1



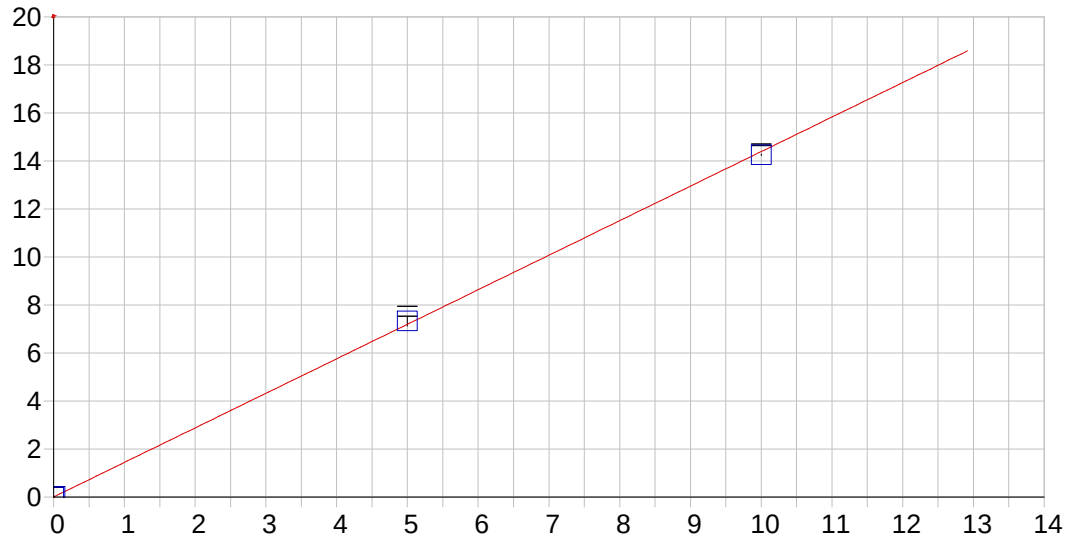
Th 283.231 {119}

Date of Fit:	12/10/2014 8:53:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.003109	Re-Slope:	1.000000
A1 (Gain):	0.174318	Y-int:	0.000000

A2 (Curvature):		0.000000					
n (Exponent):		1.000000					
Correlation:		0.999824		Status:	OK.		
Std Error of Est:		0.000255					
Predicted MDL:		0.002649					
Predicted MQL:		0.008829					

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00311	.000	1
CAL 1	.20000	.19656	-.003	-1.72	.03737	.001	1
Cal 2	5.0000	5.1341	.134	2.68	.89807	.022	1
Cal 3	10.000	9.8694	-.131	-1.31	1.7235	.020	1

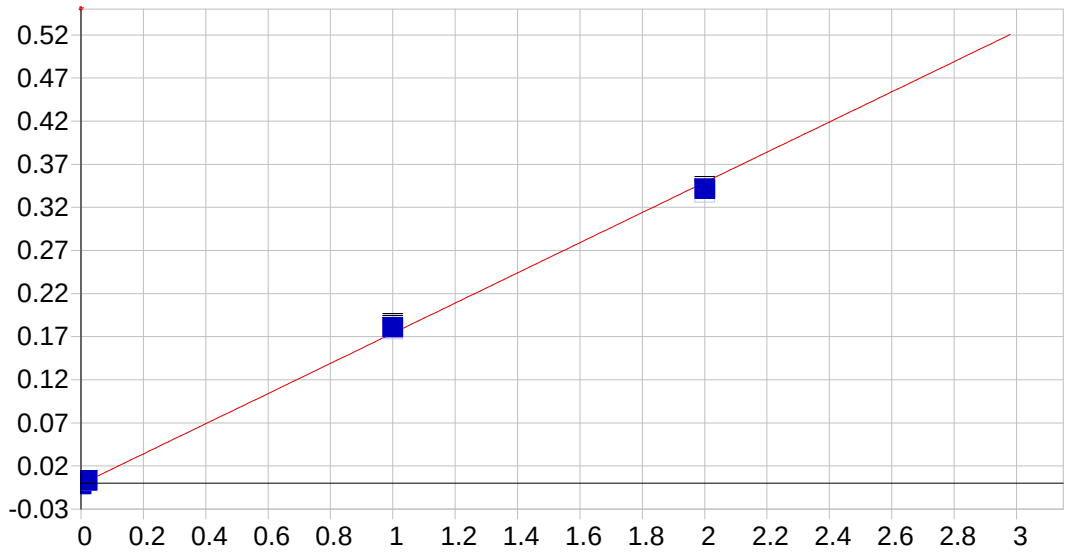


Ti 334.941 {101}

Date of Fit:	12/10/2014 8:53:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.004451	Re-Slope:	1.000000
A1 (Gain):	1.438578	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999912	Status:	OK.
Std Error of Est:	0.000469		
Predicted MDL:	0.000656		
Predicted MQL:	0.002186		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00445	.001	1
CAL 1	.02000	.01924	-.001	-3.82	.03212	.001	1
Cal 2	5.0000	5.0939	.094	1.88	7.3324	.207	1
Cal 3	10.000	9.9069	-.093	-.931	14.256	.033	1

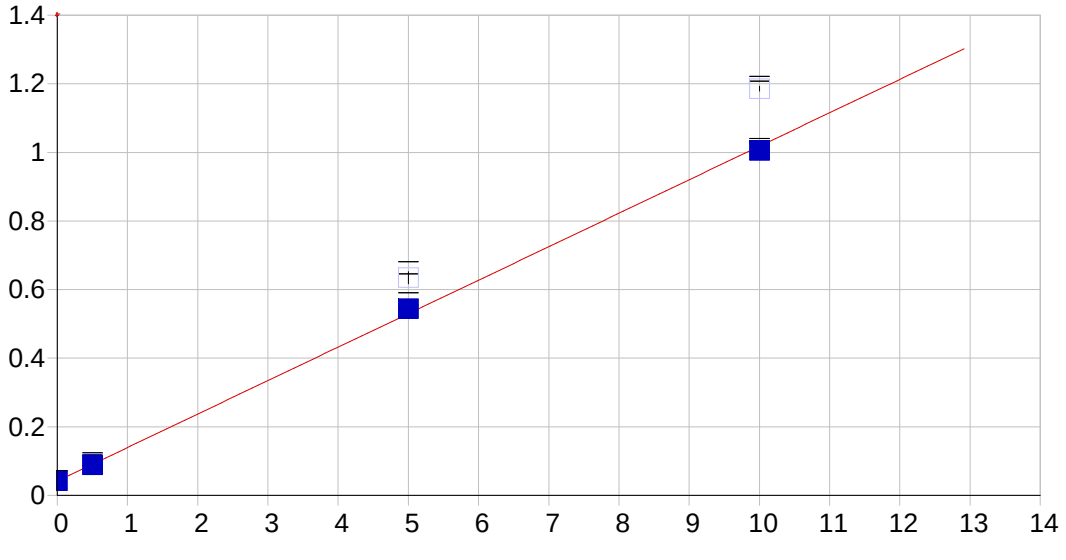


Tl 190.856 {477}

Date of Fit:	12/10/2014 8:53:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000997	Re-Slope:	1.000000
A1 (Gain):	0.175022	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999486	Status:	OK.
Std Error of Est:	0.000061		
Predicted MDL:	0.000794		
Predicted MQL:	0.002646		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	-.00100	.000	1
CAL 1	.02000	.02323	.003	16.1	.00304	.000	1
Cal 2	1.0000	1.0398	.040	3.98	.17877	.004	1
Cal 3	2.0000	1.9570	-.043	-2.15	.33708	.003	1



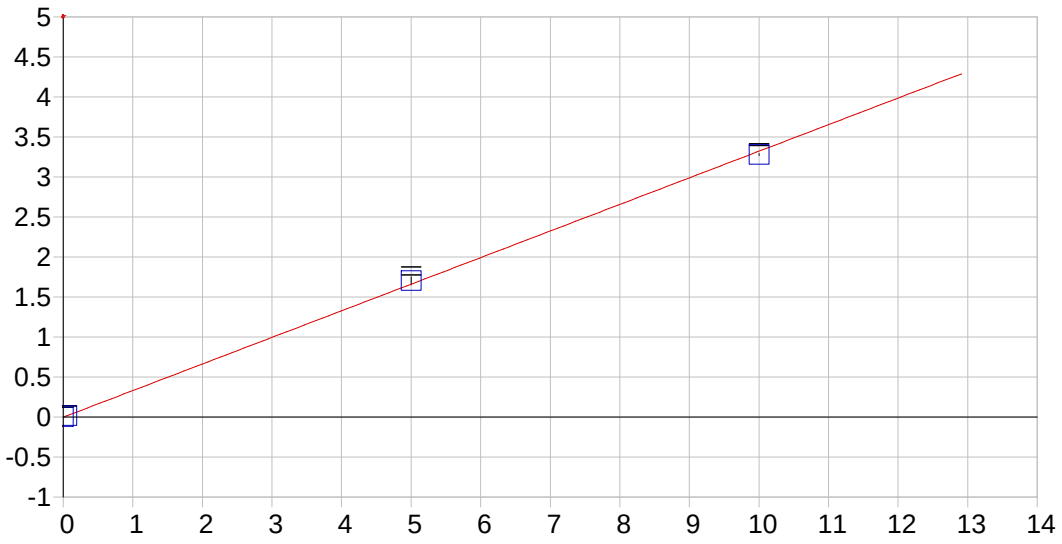
U 367.007 { 92}

Date of Fit:	12/10/2014 8:53:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.041791	Re-Slope:	1.000000
A1 (Gain):	0.097601	Y-int:	0.000000

A2 (Curvature):		0.000000					
n (Exponent):		1.000000					
Correlation:		0.999853		Status:	OK.		
Std Error of Est:		0.000246					
Predicted MDL:		0.011747					
Predicted MQL:		0.039157					

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00001	.000	.000	.04179	.002	1
CAL 1	.50000	.48473	-.015	-3.05	.09204	.003	1
Cal 2	5.0000	5.1448	.145	2.90	.63428	.018	1
Cal 3	10.000	9.8689	-.131	-1.31	1.1857	.007	1

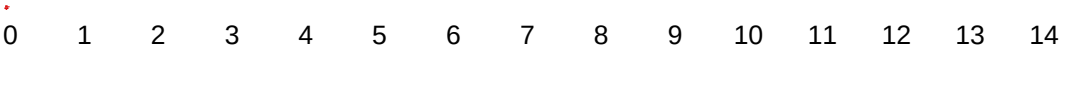


V 290.882 {116}

Date of Fit:	12/10/2014 8:53:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.001296	Re-Slope:	1.000000
A1 (Gain):	0.332258	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999840	Status:	OK.
Std Error of Est:	0.000231		
Predicted MDL:	0.002350		
Predicted MQL:	0.007833		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	-.00130	.001	1
CAL 1	.05000	.04981	.000	-.382	.01525	.000	1
Cal 2	5.0000	5.1269	.127	2.54	1.7021	.051	1
Cal 3	10.000	9.8733	-.127	-1.27	3.2792	.011	1

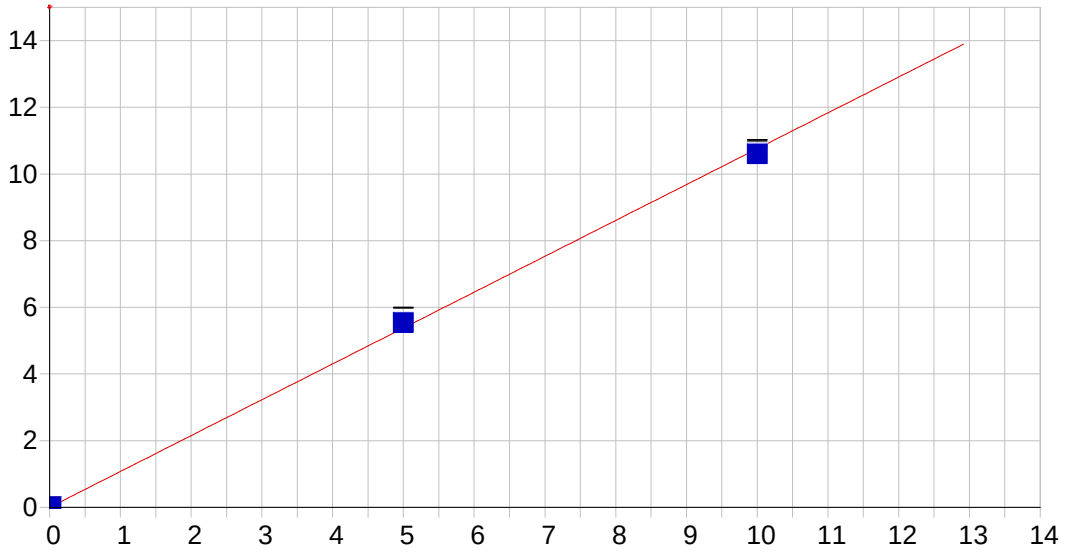


Y 371.030 { 91}*

Date of Fit:	12/10/2014 8:53:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	1.000000	Re-Slope:	1.000000
A1 (Gain):	0.000000	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.000000	Status:	Warning Zero Gain
Std Error of Est:	0.000000		
Predicted MDL:	n/a		
Predicted MQL:	n/a		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CAL 1	1.0000	.00000	-1.00	-100.	1.0000	.000	1
CALBLK1	.00000	.00000	.000	.000	1.0000	.000	1
Cal 2	5.0000	.00000	-5.00	-100.	1.0000	.000	1
Cal 3	10.000	.00000	-10.0	-100.	1.0000	.000	1



Zn 213.856 {458}

Date of Fit:	12/10/2014 8:53:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000737	Re-Slope:	1.000000
A1 (Gain):	1.075901	Y-int:	0.000000

A2 (Curvature):		0.000000					
n (Exponent):		1.000000					
Correlation:		0.999786		Status:	OK.		
Std Error of Est:		0.000547					
Predicted MDL:		0.000110					
Predicted MQL:		0.000366					
Std. Name	**Stated Conc.**	**Found Conc.**	**Difference**	**% Diff.**	**(S)IR**	**Std Dev**	**Emphasis**
CALBLK1	.00000	.00000	.000	.000	.00074	.000	1
CAL 1	.02000	.02072	.001	3.60	.02310	.000	1
Cal 2	5.0000	5.1463	.146	2.93	5.5571	.144	1
Cal 3	10.000	9.8530	-.147	-1.47	10.640	.093	1

Sample Name: ICV Acquired: 12/10/2014 8:53:57 Type: QC
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.9841**	**49.35**	**4.987**	**5.039**	**5.010**	**5.040**	**5.065**	**52.56**	**5.074**
Stddev	.0101	.78	.149	.070	.039	.095	.155	1.36	.141
%RSD	1.024	1.590	2.981	1.398	.7864	1.889	3.057	2.578	2.788
#1	.9743	48.45	4.864	4.960	5.001	5.096	4.932	51.36	4.952
#2	.9944	49.69	4.945	5.062	5.054	4.930	5.027	52.28	5.042
#3	.9835	49.90	5.152	5.095	4.976	5.093	5.235	54.03	5.229
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.209**	**5.036**	**5.048**	**49.65**	**49.26**	**4.989**	**49.24**	**4.934**	**1.038**
Stddev	.147	.039	.149	.78	.71	.072	.93	.081	.029
%RSD	2.823	.7780	2.957	1.575	1.443	1.443	1.884	1.635	2.846
#1	5.084	4.999	4.927	48.76	48.44	4.906	48.19	4.841	1.013
#2	5.172	5.077	5.002	49.99	49.62	5.020	49.63	4.974	1.030
#3	5.371	5.032	5.215	50.21	49.71	5.040	49.92	4.987	1.071
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**49.27**	**5.121**	**5.335**	**5.153**	**51.54**	**1.017**	**1.016**	**5.232**	**5.113**
Stddev	.70	.139	.153	.144	1.72	.033	.033	.083	.143
%RSD	1.415	2.710	2.857	2.790	3.332	3.208	3.205	1.592	2.791
#1	48.47	5.001	5.207	5.029	50.10	.9898	.9879	5.138	4.994
#2	49.59	5.088	5.295	5.119	51.08	1.009	1.010	5.261	5.074
#3	49.74	5.273	5.504	5.311	53.44	1.053	1.052	5.297	5.272
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: ICV Acquired: 12/10/2014 8:53:57 Type: QC
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.013**	**4.954**	**4.996**	**1.034**	**4.958**	**4.832**	**5.088**
Stddev	.069	.045	.078	.027	.046	.083	.146
%RSD	1.379	.9034	1.566	2.645	.9348	1.709	2.871
#1	5.024	4.906	4.906	1.011	4.906	4.738	4.962
#2	4.939	4.993	5.033	1.026	4.993	4.864	5.054
#3	5.076	4.964	5.048	1.064	4.976	4.894	5.248
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**4206.1**
Stddev	47.4
%RSD	1.1263
#1	4260.7
#2	4181.7
#3	4175.8

Sample Name: ICB Acquired: 12/10/2014 8:57:46 Type: QC
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0048	.0016	.0187	.0008	.0006	<.0000	.0024	<.0000
Stddev	.0005	.0092	.0017	.0026	.0002	.0002	.0034	.0010	.0001
%RSD	134.0	192.3	109.1	13.96	21.28	29.60	216.5	42.74	712.8
#1	-.0003	.0018	.0005	.0217	.0009	.0008	-.0040	.0033	.0001
#2	-.0009	-.0026	.0036	.0172	.0006	.0005	-.0031	.0013	.0000
#3	.0001	.0152	.0007	.0171	.0008	.0005	.0024	.0026	-.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	<.0000	.0003	.0069	<.0000	.0023	<.0000	.0002	.0000
Stddev	.0002	.0004	.0006	.0012	.0240	.0003	.0115	.0004	.0001
%RSD	72.65	231.6	198.8	17.74	121.0	13.33	2430.	179.9	330.8
#1	.0004	-.0005	.0008	.0082	-.0050	.0025	.0022	.0005	-.0001
#2	.0001	.0002	.0005	.0058	-.0070	.0024	.0094	.0005	.0001
#3	.0002	-.0001	-.0004	.0065	-.0475	.0019	-.0131	-.0003	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0055	.0003	.0011	.0007	.0073	<.0000	.0021	.0010	.0001
Stddev	.0011	.0003	.0004	.0010	.0016	.0007	.0013	.0063	.0003
%RSD	20.69	129.0	34.04	134.2	21.92	81.39	59.85	604.3	267.2
#1	.0062	-.0001	.0010	.0011	.0084	-.0014	.0007	-.0060	-.0002
#2	.0060	.0004	.0016	.0014	.0081	-.0011	.0030	.0060	.0002
#3	.0042	.0005	.0008	-.0004	.0055	-.0001	.0027	.0031	.0003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Sample Name: ICB Acquired: 12/10/2014 8:57:46 Type: QC
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0006	.0009	.0006	.0016	<.0000	.0001	.0000
Stddev	.0001	.0006	.0013	.0003	.0247	.0018	.0001
%RSD	24.98	61.59	207.5	21.66	104.7	1319.	173.1
#1	.0008	.0003	.0013	.0019	-.0290	.0007	.0001
#2	.0005	.0014	.0014	.0016	-.0452	-.0019	.0001
#3	.0005	.0011	-.0009	.0012	.0034	.0016	.0000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_3710
Units	Cts/S
Avg	4376.9
Stddev	135.7
%RSD	3.0996
#1	4480.1
#2	4427.4
#3	4223.2

Sample Name: LLC Acquired: 12/10/2014 9:01:43 Type: QC
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0100**	**.2008**	**.0105**	**.0550**	**.0504**	**.0051**	**.1977**	**1.076**	**.0048**
Stddev	.0005	.0154	.0008	.0029	.0005	.0000	.0033	.011	.0001
%RSD	5.475	7.656	7.659	5.288	.9418	.9567	1.688	1.024	1.733
#1	.0106	.2127	.0097	.0584	.0510	.0050	.2006	1.085	.0048
#2	.0097	.2062	.0105	.0531	.0501	.0051	.1940	1.064	.0047
#3	.0097	.1834	.0113	.0536	.0502	.0051	.1984	1.080	.0049
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0531**	**.0088**	**.0242**	**.1014**	**4.876**	**.0523**	**.9742**	**.0150**	**.0405**
Stddev	.0007	.0013	.0012	.0018	.024	.0008	.0162	.0003	.0004
%RSD	1.350	14.70	5.069	1.785	.4993	1.592	1.658	1.934	1.055
#1	.0538	.0100	.0256	.1008	4.887	.0532	.9669	.0147	.0410
#2	.0524	.0074	.0241	.1000	4.849	.0523	.9631	.0151	.0402
#3	.0531	.0091	.0231	.1035	4.894	.0515	.9927	.0153	.0403
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.9833**	**.0426**	**.2450**	**.0115**	**4.888**	**.0094**	**.0142**	**.3891**	**.1025**
Stddev	.0091	.0006	.0028	.0007	.072	.0004	.0024	.0095	.0009
%RSD	.9231	1.465	1.123	6.256	1.479	4.092	16.82	2.437	.8637
#1	.9863	.0430	.2480	.0110	4.961	.0098	.0164	.4000	.1033
#2	.9731	.0419	.2426	.0113	4.816	.0091	.0145	.3829	.1016
#3	.9905	.0430	.2445	.0123	4.887	.0093	.0117	.3844	.1026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: LLC Acquired: 12/10/2014 9:01:43 Type: QC
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0052	.1919	.0188	.0240	.4797	.0499	.0203
Stddev	.0000	.0035	.0002	.0010	.0079	.0017	.0003
%RSD	.8427	1.850	1.221	4.221	1.649	3.499	1.512
#1	.0051	.1956	.0186	.0250	.4863	.0483	.0207
#2	.0052	.1914	.0187	.0240	.4819	.0497	.0201
#3	.0052	.1886	.0190	.0229	.4710	.0518	.0203
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4415.8
Stddev	40.3
%RSD	.91154
#1	4398.9
#2	4461.7
#3	4386.6

Sample Name: ICSA Acquired: 12/10/2014 9:05:36 Type: QC
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0005**	**97.27**	**.0035**	**<.0000**	**.0006**	**<.0000**	**.0157**
Stddev	.0002	.30	.0006	.0018	.0003	.0000	.0019
%RSD	40.46	.3084	17.47	11.60	55.23	132.2	12.01
#1	.0008	97.58	.0034	-.0145	.0007	.0000	.0179
#2	.0004	96.99	.0029	-.0137	.0008	.0000	.0144
#3	.0004	97.24	.0041	-.0171	.0002	-.0001	.0149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Ca1840	Cd2288	Co2286	Cr2835	Cu2178	Fe2599	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**100.1**	**W<.0000**	**.0015**	**<.0000**	**<.0000**	**97.82**	**97.81**
Stddev	.8	.0001	.0002	.0008	.0012	.19	.18
%RSD	.7686	6.025	14.24	20.33	44.54	.1933	.1879
#1	99.96	-.0012	.0013	-.0031	-.0014	97.98	98.03
#2	100.9	-.0012	.0018	-.0047	-.0031	97.86	97.69
#3	99.43	-.0011	.0016	-.0041	-.0037	97.61	97.73
Check ?	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		.0010					
Low Limit		-.0010					

Elem	Li6707	Mg2798	Mn2576	Mo2020	Na5895	Ni2216	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0029**	**98.77**	**W .0045**	**<.0000**	**97.14**	**.0012**	**99.48**
Stddev	.0006	.13	.0005	.0000	.34	.0001	.89
%RSD	20.92	.1270	10.70	21.60	.3479	10.87	.8913
#1	.0023	98.76	.0044	-.0002	97.52	.0013	99.02
#2	.0035	98.90	.0041	-.0003	97.02	.0010	100.5
#3	.0029	98.65	.0050	-.0002	96.88	.0012	98.91
Check ?	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			.0031				
Low Limit			-.0031				

Sample Name: ICSA Acquired: 12/10/2014 9:05:36 Type: QC
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W<.0000	100.2	<.0000	<.0000	<.0000	<.0000	.0010
Stddev	.0012	1.2	.0014	.0012	.0056	.0005	.0001
%RSD	41.91	1.189	43.30	92.88	133.0	46.17	11.26
#1	-.0032	99.59	-.0032	-.0027	-.0090	-.0015	.0010
#2	-.0039	101.6	-.0047	-.0002	-.0057	-.0007	.0011
#3	-.0016	99.46	-.0019	-.0011	.0020	-.0008	.0009
Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	.0025						
Low Limit	-.0025						

Elem	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0422	.0035	.0028	W<.0000	.0036	<.0000
Stddev	.0017	.0001	.0007	.0067	.0030	.0002
%RSD	3.989	4.020	26.30	10.64	84.93	3.902
#1	.0427	.0036	.0032	-.0650	.0010	-.0061
#2	.0435	.0035	.0020	-.0553	.0028	-.0057
#3	.0403	.0034	.0033	-.0681	.0069	-.0057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass
High Limit				.0470		
Low Limit				-.0470		

Int. Std.	Y_3710
Units	Cts/S
Avg	3994.5
Stddev	3.4
%RSD	.08584
#1	3997.2
#2	3990.6
#3	3995.7

Sample Name: ICSAB Acquired: 12/10/2014 9:09:24 Type: QC
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.4967**	**99.57**	**2.485**	**2.469**	**2.535**	**2.553**	**2.500**	**99.00**	**2.512**
Stddev	.0030	.29	.014	.011	.003	.002	.015	.55	.016
%RSD	.6102	.2893	.5672	.4621	.1199	.0650	.5919	.5542	.6217
#1	.4980	99.59	2.494	2.456	2.531	2.552	2.513	99.31	2.525
#2	.4988	99.85	2.492	2.475	2.537	2.555	2.504	99.32	2.516
#3	.4932	99.27	2.469	2.476	2.536	2.552	2.484	98.37	2.494
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.501**	**2.489**	**2.512**	**98.98**	**100.3**	**2.488**	**99.69**	**2.450**	**.5004**
Stddev	.013	.017	.011	.29	.1	.003	.63	.012	.0039
%RSD	.5168	.6705	.4535	.2950	.1478	.1202	.6286	.4704	.7766
#1	2.509	2.498	2.522	98.79	100.3	2.485	100.0	2.456	.5036
#2	2.507	2.499	2.514	99.32	100.4	2.491	100.1	2.458	.5014
#3	2.486	2.469	2.499	98.83	100.1	2.487	98.97	2.437	.4961
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**99.80**	**2.472**	**99.12**	**2.494**	**99.85**	**.4949**	**.4971**	**2.505**	**2.507**
Stddev	.14	.015	.41	.014	.34	.0052	.0036	.011	.016
%RSD	.1410	.5883	.4106	.5608	.3387	1.059	.7216	.4242	.6224
#1	99.64	2.483	99.39	2.505	100.2	.4991	.4937	2.494	2.519
#2	99.91	2.478	99.32	2.499	99.90	.4965	.4966	2.516	2.514
#3	99.84	2.456	98.65	2.479	99.49	.4890	.5009	2.505	2.490
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: ICSAB Acquired: 12/10/2014 9:09:24 Type: QC
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.557**	**2.506**	**2.499**	**.4987**	**2.451**	**2.437**	**2.525**
Stddev	.002	.024	.005	.0025	.027	.007	.012
%RSD	.0840	.9632	.2007	.5018	1.114	.2923	.4670
#1	2.554	2.530	2.502	.5004	2.467	2.441	2.534
#2	2.558	2.507	2.502	.4999	2.467	2.441	2.530
#3	2.558	2.481	2.493	.4958	2.420	2.429	2.512
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**3981.6**
Stddev	27.0
%RSD	.67754
#1	3972.9
#2	3960.1
#3	4011.9

Sample Name: LDR Acquired: 12/10/2014 9:12:50 Type: QC
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.023**	**100.8**	**9.958**	**9.955**	**10.10**	**10.01**	**9.899**	**99.48**	**9.910**
Stddev	.022	.2	.135	.006	.28	.05	.144	1.21	.130
%RSD	1.086	.2432	1.359	.0609	2.755	.4698	1.458	1.220	1.308
#1	2.020	100.9	10.10	9.953	10.15	10.02	10.05	100.7	10.05
#2	2.047	100.9	9.939	9.962	10.36	9.965	9.881	99.44	9.894
#3	2.003	100.5	9.833	9.951	9.806	10.06	9.765	98.29	9.790
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.904**	**9.988**	**9.886**	**99.43**	**100.7**	**10.02**	**100.6**	**9.941**	**1.997**
Stddev	.124	.086	.137	.24	.3	.01	.4	.039	.026
%RSD	1.251	.8565	1.384	.2430	.3094	.1302	.4469	.3940	1.293
#1	10.03	9.986	10.03	99.39	100.8	10.03	100.9	9.971	2.025
#2	9.894	10.07	9.863	99.68	100.9	10.02	100.8	9.956	1.994
#3	9.786	9.904	9.762	99.21	100.3	10.01	100.1	9.897	1.973
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**100.4**	**9.885**	**98.96**	**9.879**	**101.1**	**1.992**	**1.997**	**10.03**	**9.898**
Stddev	.2	.121	1.25	.119	1.7	.029	.030	.01	.111
%RSD	.1704	1.222	1.265	1.203	1.706	1.442	1.494	.1212	1.119
#1	100.3	10.01	100.3	9.998	103.0	2.024	2.031	10.03	10.01
#2	100.5	9.880	98.79	9.880	100.7	1.985	1.986	10.05	9.894
#3	100.2	9.767	97.80	9.761	99.60	1.968	1.974	10.02	9.789
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: LDR Acquired: 12/10/2014 9:12:50 Type: QC
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.10**	**10.06**	**9.988**	**1.968**	**10.09**	**9.974**	**9.903**
Stddev	.04	.12	.031	.024	.11	.021	.126
%RSD	.4161	1.194	.3129	1.241	1.115	.2082	1.271
#1	10.07	10.07	10.01	1.991	10.06	9.997	10.03
#2	10.15	10.18	10.00	1.969	10.22	9.967	9.895
#3	10.09	9.943	9.952	1.943	9.999	9.958	9.781
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**4075.3**
Stddev	24.0
%RSD	.58797
#1	4074.1
#2	4051.9
#3	4099.8

Sample Name: CCV Acquired: 12/10/2014 9:16:41 Type: QC
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.010**	**49.98**	**5.115**	**5.066**	**5.086**	**5.122**	**5.152**	**52.35**	**5.153**
Stddev	.007	.27	.041	.028	.055	.039	.037	.42	.042
%RSD	.6648	.5473	.8003	.5563	1.075	.7524	.7171	.8082	.8183
#1	1.012	50.16	5.137	5.084	5.037	5.139	5.170	52.56	5.177
#2	1.003	50.11	5.068	5.080	5.075	5.077	5.110	51.86	5.105
#3	1.016	49.66	5.140	5.033	5.145	5.148	5.177	52.63	5.179
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.195**	**5.146**	**5.152**	**50.89**	**50.34**	**5.078**	**49.98**	**5.045**	**1.037**
Stddev	.039	.047	.044	.13	.30	.036	.13	.018	.009
%RSD	.7504	.9027	.8534	.2651	.6046	.7118	.2683	.3672	.8319
#1	5.214	5.158	5.179	51.05	50.56	5.098	50.14	5.060	1.040
#2	5.150	5.095	5.101	50.81	50.46	5.100	49.93	5.052	1.027
#3	5.221	5.185	5.175	50.81	49.99	5.036	49.89	5.025	1.043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**50.92**	**5.205**	**52.43**	**5.184**	**51.17**	**1.022**	**1.022**	**4.978**	**5.172**
Stddev	.29	.039	.40	.047	.41	.012	.007	.029	.041
%RSD	.5615	.7509	.7564	.9031	.7923	1.143	.6541	.5830	.7993
#1	51.16	5.226	52.69	5.205	51.45	1.032	1.027	5.004	5.196
#2	50.99	5.160	51.97	5.131	50.70	1.009	1.014	4.983	5.124
#3	50.60	5.230	52.62	5.218	51.36	1.025	1.024	4.947	5.196
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: CCV Acquired: 12/10/2014 9:16:41 Type: QC
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.116**	**5.119**	**5.040**	**1.050**	**5.092**	**5.075**	**5.180**
Stddev	.015	.039	.030	.010	.048	.018	.042
%RSD	.2854	.7646	.6019	.9190	.9436	.3457	.8098
#1	5.124	5.132	5.062	1.054	5.096	5.081	5.204
#2	5.099	5.075	5.053	1.039	5.042	5.089	5.132
#3	5.124	5.150	5.006	1.056	5.138	5.055	5.205
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**4045.3**
Stddev	39.9
%RSD	.98658
#1	4033.8
#2	4089.7
#3	4012.4

Sample Name: CCB Acquired: 12/10/2014 9:20:30 Type: QC
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0006**	**.0103**	**.0022**	**.0179**	**.0006**	**.0007**	**<.0000**	**.0062**	**.0001**
Stddev	.0003	.0029	.0009	.0011	.0002	.0001	.0017	.0006	.0000
%RSD	49.64	28.20	42.52	6.083	32.40	15.05	65.96	9.029	28.25
#1	.0003	.0074	.0016	.0166	.0008	.0008	-.0034	.0068	.0001
#2	.0007	.0132	.0017	.0186	.0005	.0007	-.0006	.0058	.0002
#3	.0008	.0101	.0032	.0184	.0005	.0006	-.0036	.0059	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0006**	**.0011**	**<.0000**	**.0096**	**.0114**	**.0015**	**.0040**	**.0009**	**<.0000**
Stddev	.0001	.0007	.0012	.0020	.0199	.0004	.0125	.0004	.0001
%RSD	15.54	63.02	219.9	20.38	173.9	26.90	313.2	44.52	1504.
#1	.0006	.0010	.0006	.0115	.0208	.0017	.0184	.0012	.0000
#2	.0006	.0018	-.0019	.0097	.0249	.0017	-.0042	.0011	-.0001
#3	.0005	.0004	-.0004	.0076	-.0114	.0010	-.0022	.0004	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**<.0000**	**.0004**	**.0049**	**.0012**	**.0137**	**.0001**	**.0001**	**.0014**	**.0002**
Stddev	.0094	.0000	.0010	.0007	.0023	.0013	.0024	.0050	.0007
%RSD	889.0	12.20	21.01	56.56	16.51	913.1	1850.	345.5	295.2
#1	-.0028	.0003	.0060	.0014	.0151	.0015	.0009	.0063	-.0005
#2	.0091	.0004	.0044	.0005	.0150	-.0009	-.0026	.0017	.0007
#3	-.0094	.0004	.0041	.0018	.0111	-.0002	.0021	-.0037	.0005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Sample Name: CCB Acquired: 12/10/2014 9:20:30 Type: QC
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0007	<.0000	.0004	.0022	.0111	.0011	.0004
Stddev	.0002	.0023	.0012	.0011	.0209	.0009	.0001
%RSD	23.30	111.0	340.1	49.21	188.8	81.19	36.58
#1	.0008	-.0006	.0011	.0015	.0332	.0013	.0005
#2	.0007	-.0047	.0010	.0034	.0082	.0019	.0003
#3	.0005	-.0009	-.0011	.0016	-.0082	.0001	.0003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_3710
Units	Cts/S
Avg	4139.3
Stddev	75.8
%RSD	1.8316
#1	4052.8
#2	4194.2
#3	4171.0

Sample Name: 160-9281-A-14-A Acquired: 12/10/2014 9:24:27 Type: Unk
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0612	.0042	.0214	.0375	.0001	<.0000	49.65	.0000
Stddev	.0005	.0050	.0014	.0028	.0001	.0000	.0031	.21	.0002
%RSD	123.7	8.098	34.21	13.17	.3883	40.44	84.45	.4222	513.3
#1	.0002	.0557	.0047	.0200	.0375	.0001	-.0001	49.46	.0000
#2	-.0006	.0626	.0054	.0247	.0377	.0001	-.0050	49.63	.0003
#3	-.0007	.0654	.0026	.0196	.0374	.0001	-.0060	49.87	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	.0140	<.0000	.0796	4.246	.0040	10.88	.0079	.0021
Stddev	.0002	.0014	.0011	.0022	.034	.0006	.04	.0003	.0001
%RSD	43.37	10.16	96.23	2.822	.8034	13.70	.3760	3.219	6.862
#1	.0002	.0153	.0000	.0812	4.235	.0047	10.93	.0079	.0022
#2	.0005	.0125	-.0021	.0806	4.284	.0036	10.88	.0077	.0021
#3	.0006	.0141	-.0013	.0771	4.218	.0038	10.84	.0082	.0020
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	15.02	.0040	.0315	.0218	25.92	.0002	<.0000	11.64	<.0000
Stddev	.01	.0002	.0008	.0005	.11	.0019	.0016	.00	.0002
%RSD	.0760	3.771	2.464	2.451	.4235	1216.	258.6	.0057	43.34
#1	15.03	.0041	.0309	.0221	25.81	.0023	.0005	11.63	-.0002
#2	15.02	.0038	.0324	.0220	25.93	-.0014	-.0024	11.64	-.0006
#3	15.01	.0041	.0313	.0211	26.03	-.0004	.0001	11.64	-.0006
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9281-A-14-A Acquired: 12/10/2014 9:24:27 Type: Unk
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2637	<.0000	.0043	.0026	<.0000	.0068	.0109
Stddev	.0003	.0031	.0006	.0005	.0107	.0011	.0001
%RSD	.1065	213.0	13.92	20.42	22.30	15.65	.7632
#1	.2639	.0020	.0046	.0031	-.0401	.0065	.0110
#2	.2637	-.0040	.0036	.0025	-.0440	.0059	.0108
#3	.2634	-.0025	.0047	.0021	-.0604	.0079	.0109
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4110.3
Stddev	16.8
%RSD	.40926
#1	4108.6
#2	4127.9
#3	4094.4

Sample Name: 160-9281-B-15-A Acquired: 12/10/2014 9:28:20 Type: Unk
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	.0043	.0186	.0369	.0000	<.0000	49.22	.0001
Stddev	.0006	.0046	.0006	.0018	.0001	.0001	.0007	.40	.0001
%RSD	148.0	67.87	14.11	9.554	.1920	174.5	36.07	.8101	172.9
#1	-.0003	-.0044	.0042	.0174	.0369	.0000	-.0020	48.78	.0000
#2	.0001	-.0122	.0037	.0206	.0368	.0001	-.0026	49.34	.0002
#3	-.0010	-.0040	.0049	.0177	.0370	.0001	-.0012	49.55	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005	.0125	.0010	.0091	4.289	.0056	10.91	.0067	.0021
Stddev	.0002	.0004	.0005	.0012	.012	.0004	.10	.0001	.0001
%RSD	49.20	3.190	52.82	13.57	.2816	6.468	.9377	1.552	5.150
#1	.0006	.0120	.0004	.0087	4.298	.0058	10.79	.0068	.0023
#2	.0006	.0127	.0012	.0105	4.294	.0052	10.98	.0066	.0020
#3	.0002	.0127	.0013	.0081	4.276	.0057	10.96	.0067	.0021
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	15.12	.0037	.0264	.0212	25.96	.0011	<.0000	11.62	<.0000
Stddev	.06	.0001	.0007	.0007	.32	.0016	.0006	.09	.0003
%RSD	.3855	2.689	2.618	3.160	1.234	146.4	68.70	.7497	39.01
#1	15.05	.0037	.0264	.0212	25.59	.0019	-.0008	11.52	-.0005
#2	15.16	.0036	.0257	.0206	26.10	.0021	-.0016	11.68	-.0005
#3	15.15	.0038	.0271	.0219	26.19	-.0008	-.0004	11.66	-.0009
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9281-B-15-A Acquired: 12/10/2014 9:28:20 Type: Unk
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2644	.0002	.0017	<.0000	<.0000	.0074	.0059
Stddev	.0006	.0010	.0005	.0004	.0061	.0012	.0001
%RSD	.2290	408.1	29.89	58.04	10.15	15.86	1.179
#1	.2638	.0013	.0020	-.0010	-.0603	.0086	.0060
#2	.2650	-.0006	.0021	-.0003	-.0539	.0062	.0058
#3	.2646	.0000	.0011	-.0010	-.0661	.0075	.0059
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4259.7
Stddev	25.8
%RSD	.60646
#1	4284.0
#2	4262.5
#3	4232.5

Sample Name: LB 160-157719/1-C Acquired: 12/10/2014 9:32:12 Type: Unk
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	.0015	.0044	.0001	<.0000	<.0000	.0342	<.0000
Stddev	.0007	.0086	.0004	.0047	.0000	.0000	.0004	.0005	.0002
%RSD	106.2	104.7	25.50	108.1	33.23	272.6	27.44	1.560	255.1
#1	-.0001	-.0049	.0010	-.0011	.0001	.0000	-.0010	.0346	.0001
#2	-.0004	-.0018	.0016	.0070	.0001	.0000	-.0017	.0345	.0000
#3	-.0014	-.0180	.0018	.0072	.0002	-.0001	-.0015	.0336	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0003	.0005	.0028	<.0000	.0014	<.0000	<.0000	<.0000
Stddev	.0000	.0006	.0012	.0021	.0231	.0011	.0023	.0001	.0003
%RSD	26.18	221.1	257.1	72.41	96.62	77.39	51.88	53.43	376.3
#1	.0002	-.0004	-.0003	.0039	-.0315	.0012	-.0060	.0000	.0002
#2	.0001	.0008	-.0001	.0005	-.0422	.0026	-.0055	-.0001	-.0001
#3	.0001	.0005	.0019	.0042	.0020	.0004	-.0018	-.0002	-.0004
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0134	.0002	.0013	.0001	.0123	.0001	.0020	.0027	<.0000
Stddev	.0063	.0002	.0005	.0013	.0026	.0004	.0015	.0045	.0003
%RSD	47.29	144.1	39.22	1442.	21.24	294.2	74.89	168.0	157.6
#1	.0198	.0003	.0007	-.0012	.0142	.0006	.0009	.0069	-.0001
#2	.0071	-.0001	.0018	.0015	.0134	-.0001	.0038	.0031	-.0006
#3	.0133	.0003	.0015	.0000	.0093	.0000	.0014	-.0020	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LB 160-157719/1-C Acquired: 12/10/2014 9:32:12 Type: Unk
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	<.0000	<.0000	.0027	<.0000	.0003	.0062
Stddev	.0000	.0021	.0006	.0007	.0103	.0017	.0003
%RSD	20.27	1033.	121.6	27.60	109.5	682.1	4.496
#1	.0001	-.0015	-.0011	.0025	-.0150	.0014	.0065
#2	.0001	-.0012	.0002	.0020	-.0157	.0011	.0061
#3	.0002	.0022	-.0006	.0035	.0025	-.0017	.0061
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4166.1
Stddev	8.3
%RSD	.19838
#1	4175.2
#2	4159.0
#3	4164.2

Sample Name: LCS 160-161405/2-A Acquired: 12/10/2014 9:36:10 Type: Unk
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2145	10.46	1.048	2.056	1.068	1.060	1.069	11.54	1.057
Stddev	.0009	.02	.002	.003	.002	.003	.004	.02	.003
%RSD	.4143	.2166	.2154	.1346	.2173	.2495	.4059	.1835	.2349
#1	.2138	10.48	1.045	2.058	1.070	1.062	1.065	11.52	1.055
#2	.2155	10.44	1.049	2.053	1.066	1.057	1.068	11.54	1.057
#3	.2143	10.45	1.049	2.057	1.070	1.060	1.073	11.56	1.060
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.146	1.100	1.099	10.70	10.26	1.073	10.25	1.060	.5456
Stddev	.002	.002	.002	.02	.04	.003	.04	.002	.0013
%RSD	.2119	.1500	.2062	.2328	.4114	.2518	.3948	.1720	.2345
#1	1.143	1.102	1.096	10.73	10.24	1.074	10.26	1.060	.5442
#2	1.146	1.099	1.100	10.68	10.24	1.070	10.21	1.058	.5459
#3	1.148	1.099	1.101	10.71	10.31	1.075	10.29	1.062	.5468
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.49	1.117	1.111	1.126	10.36	.5239	.5277	5.138	1.091
Stddev	.02	.003	.004	.004	.02	.0006	.0028	.015	.004
%RSD	.1959	.2663	.3694	.4006	.2327	.1133	.5355	.2977	.3672
#1	10.51	1.114	1.107	1.121	10.34	.5233	.5302	5.149	1.087
#2	10.47	1.118	1.115	1.130	10.37	.5242	.5246	5.121	1.093
#3	10.50	1.119	1.112	1.128	10.39	.5244	.5282	5.146	1.094
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LCS 160-161405/2-A Acquired: 12/10/2014 9:36:10 Type: Unk
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.088	1.088	1.046	.2272	1.123	1.050	1.085
Stddev	.003	.004	.005	.0010	.017	.006	.003
%RSD	.3093	.3266	.4908	.4567	1.480	.6179	.2414
#1	1.089	1.092	1.048	.2261	1.139	1.050	1.082
#2	1.084	1.089	1.040	.2282	1.106	1.044	1.085
#3	1.091	1.085	1.049	.2272	1.123	1.057	1.087
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4032.2
Stddev	8.0
%RSD	.19866
#1	4023.4
#2	4033.9
#3	4039.2

Sample Name: 160-9438-G-1-G Acquired: 12/10/2014 9:39:35 Type: Unk
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**<.0000**	**.0020**	**.0315**	**.0008**	**.0000**	**<.0000**	**51.57**	**.0001**
Stddev	.0006	.0113	.0012	.0011	.0003	.0000	.0042	2.70	.0001
%RSD	574.3	9151.	57.62	3.368	34.86	117.2	472.1	5.228	164.3
#1	.0001	-.0074	.0011	.0314	.0011	.0000	.0016	48.65	.0002
#2	.0007	.0129	.0016	.0304	.0008	.0000	.0015	52.10	.0001
#3	-.0005	-.0059	.0033	.0325	.0005	.0000	-.0057	53.97	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0005**	**.0001**	**<.0000**	**.0037**	**.0096**	**.0115**	**13.43**	**.0029**	**.0002**
Stddev	.0002	.0010	.0007	.0023	.0186	.0010	.19	.0001	.0001
%RSD	28.65	931.6	144.1	63.84	194.3	8.625	1.438	4.482	48.33
#1	.0004	.0003	-.0008	.0018	-.0119	.0121	13.21	.0030	.0001
#2	.0007	.0010	-.0009	.0029	.0213	.0120	13.54	.0028	.0003
#3	.0004	-.0010	.0003	.0063	.0193	.0103	13.54	.0030	.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**24.67**	**.0002**	**<.0000**	**.0008**	**69.22**	**<.0000**	**<.0000**	**.5640**	**<.0000**
Stddev	.18	.0002	.0003	.0016	3.75	.0011	.0012	.0153	.0008
%RSD	.7336	85.27	59.53	188.7	5.414	3430.	923.3	2.707	104.3
#1	24.46	.0004	-.0002	-.0004	65.18	-.0011	.0010	.5471	-.0012
#2	24.79	.0003	-.0007	.0027	69.89	-.0002	-.0013	.5768	.0002
#3	24.76	.0000	-.0004	.0003	72.59	.0011	.0000	.5682	-.0013
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9438-G-1-G Acquired: 12/10/2014 9:39:35 Type: Unk
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5127	.0020	.0012	.0024	<.0000	<.0000	.0041
Stddev	.0038	.0021	.0006	.0002	.0159	.0041	.0001
%RSD	.7387	108.5	47.38	9.468	30.91	365.7	3.156
#1	.5083	.0029	.0011	.0024	-.0672	.0014	.0040
#2	.5144	.0035	.0007	.0027	-.0515	-.0058	.0042
#3	.5152	-.0005	.0018	.0022	-.0354	.0011	.0040
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3988.7
Stddev	45.8
%RSD	1.1493
#1	4015.0
#2	3935.7
#3	4015.3

Sample Name: 160-9438-G-2-J Acquired: 12/10/2014 9:43:28 Type: Unk
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000**	**.0089**	**.0024**	**.0299**	**.0012**	**.0000**	**<.0000**	**47.47**	**<.0000**
Stddev	.0004	.0058	.0002	.0032	.0001	.0000	.0016	2.46	.0001
%RSD	1167.	64.54	8.475	10.79	11.32	135.4	110.7	5.192	283.5
#1	-.0002	.0145	.0022	.0299	.0010	.0000	-.0006	45.23	.0001
#2	.0005	.0093	.0024	.0332	.0013	.0000	-.0032	47.08	-.0001
#3	-.0002	.0030	.0025	.0267	.0011	.0000	-.0004	50.11	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0004**	**.0002**	**<.0000**	**.0127**	**.5755**	**.0156**	**21.56**	**.0109**	**.0003**
Stddev	.0000	.0005	.0023	.0005	.0391	.0009	.19	.0002	.0002
%RSD	9.966	343.4	282.9	3.777	6.792	5.861	.8731	1.895	60.40
#1	.0005	.0005	-.0034	.0122	.6076	.0152	21.48	.0109	.0004
#2	.0004	-.0005	.0002	.0131	.5320	.0149	21.42	.0107	.0001
#3	.0004	.0004	.0008	.0130	.5869	.0166	21.77	.0111	.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**34.81**	**.0002**	**<.0000**	**<.0000**	**87.08**	**.0006**	**<.0000**	**.3758**	**<.0000**
Stddev	.20	.0002	.0006	.0011	4.79	.0018	.0009	.0068	.0005
%RSD	.5650	90.87	118800.	179.9	5.507	316.4	80.59	1.801	56.37
#1	34.65	.0004	.0005	-.0009	82.70	.0020	-.0003	.3680	-.0009
#2	34.75	.0001	.0001	-.0016	86.34	.0011	-.0010	.3787	-.0003
#3	35.03	.0001	-.0006	.0006	92.21	-.0014	-.0021	.3806	-.0013
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9438-G-2-J Acquired: 12/10/2014 9:43:28 Type: Unk
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7793	<.0000	.0022	.0028	<.0000	.0009	.0032
Stddev	.0047	.0008	.0004	.0007	.0044	.0039	.0001
%RSD	.6028	58.06	18.53	23.94	8.490	455.7	4.050
#1	.7758	-.0005	.0026	.0032	-.0471	-.0016	.0033
#2	.7775	-.0022	.0022	.0031	-.0559	.0054	.0030
#3	.7846	-.0016	.0018	.0020	-.0519	-.0012	.0033
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4059.8
Stddev	18.1
%RSD	.44699
#1	4065.2
#2	4074.6
#3	4039.5

Sample Name: 160-9438-G-2-J SD Acquired: 12/10/2014 9:47:21 Type: Unk
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=50

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0036	.0021	.0030	.0000	<.0000	<.0000	8.924	.0000
Stddev	.0006	.0056	.0006	.0019	.0002	.0000	.0005	.433	.0000
%RSD	354.4	158.4	30.50	63.32	703.1	291.5	55.53	4.855	153.2
#1	-.0002	.0100	.0014	.0051	-.0002	-.0001	-.0003	8.508	.0000
#2	.0005	.0010	.0026	.0015	.0001	.0000	-.0012	8.891	.0000
#3	-.0008	-.0004	.0022	.0024	.0001	.0000	-.0013	9.373	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	<.0000	.0007	.0015	.0991	.0037	3.950	.0019	<.0000
Stddev	.0002	.0004	.0007	.0015	.0371	.0005	.033	.0003	.0002
%RSD	43.82	423.3	101.2	102.8	37.45	14.10	.8401	16.72	502.8
#1	.0002	-.0003	.0003	.0007	.1122	.0033	3.919	.0023	-.0002
#2	.0005	-.0003	.0014	.0032	.1279	.0034	3.945	.0018	.0001
#3	.0004	.0003	.0003	.0005	.0572	.0043	3.985	.0017	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.292	.0003	<.0000	.0002	15.93	<.0000	<.0000	.0671	<.0000
Stddev	.035	.0001	.0012	.0006	.76	.0018	.0020	.0026	.0006
%RSD	.5566	31.56	1346.	360.4	4.788	244.5	292.1	3.925	206.2
#1	6.258	.0002	.0012	.0009	15.19	.0000	-.0029	.0650	-.0003
#2	6.328	.0003	-.0011	-.0002	15.88	.0005	.0001	.0701	-.0009
#3	6.290	.0003	-.0004	-.0002	16.72	-.0028	.0008	.0663	.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9438-G-2-J SD Acquired: 12/10/2014 9:47:21 Type: Unk
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=50

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1403	<.0000	.0003	.0030	<.0000	.0002	.0036
Stddev	.0007	.0042	.0001	.0014	.0095	.0028	.0002
%RSD	.4759	342.2	42.16	45.10	135.3	1336.	5.989
#1	.1396	-.0060	.0003	.0026	.0019	.0008	.0036
#2	.1409	.0018	.0002	.0045	-.0059	.0027	.0038
#3	.1404	.0005	.0005	.0019	-.0170	-.0029	.0034
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4203.5
Stddev	1.7
%RSD	.04098
#1	4202.2
#2	4202.9
#3	4205.5

Sample Name: 160-9438-G-2-G MS Acquired: 12/10/2014 9:51:14 Type: Unk
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0165**	**.8616**	**.0952**	**.2007**	**.0865**	**.0858**	**.0926**	**49.04**	**.0932**
Stddev	.0004	.0054	.0033	.0013	.0001	.0001	.0010	1.61	.0033
%RSD	2.266	.6266	3.488	.6306	.1679	.0714	1.034	3.277	3.560
#1	.0165	.8636	.0922	.2017	.0863	.0859	.0918	47.45	.0898
#2	.0169	.8657	.0945	.2010	.0866	.0858	.0924	49.02	.0932
#3	.0161	.8555	.0988	.1993	.0865	.0859	.0937	50.66	.0965
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1001**	**.0882**	**.0960**	**.8968**	**1.460**	**.1031**	**23.32**	**.0974**	**.0485**
Stddev	.0032	.0021	.0058	.0052	.019	.0008	.14	.0005	.0019
%RSD	3.205	2.329	5.995	.5836	1.314	.8200	.5827	.4732	3.878
#1	.0970	.0863	.0907	.9011	1.438	.1041	23.34	.0971	.0466
#2	.0999	.0904	.0952	.8984	1.465	.1027	23.45	.0979	.0486
#3	.1034	.0879	.1021	.8910	1.476	.1026	23.18	.0971	.0503
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**37.27**	**.0973**	**.1015**	**.0978**	**90.47**	**.0477**	**.0443**	**.8408**	**.0953**
Stddev	.04	.0030	.0039	.0039	3.05	.0020	.0022	.0091	.0036
%RSD	.1096	3.096	3.883	3.960	3.372	4.217	4.999	1.080	3.757
#1	37.24	.0944	.0982	.0947	87.41	.0458	.0458	.8370	.0919
#2	37.31	.0970	.1003	.0966	90.50	.0476	.0418	.8511	.0950
#3	37.25	.1004	.1059	.1021	93.51	.0498	.0455	.8342	.0991
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9438-G-2-G MS Acquired: 12/10/2014 9:51:14 Type: Unk
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8977	.0896	.0864	.0223	.0449	.0853	.0988
Stddev	.0010	.0006	.0006	.0004	.0123	.0021	.0034
%RSD	.1100	.7147	.7129	1.970	27.48	2.452	3.489
#1	.8970	.0891	.0860	.0222	.0553	.0850	.0954
#2	.8988	.0904	.0871	.0220	.0481	.0834	.0988
#3	.8973	.0894	.0861	.0228	.0312	.0875	.1023
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4134.5
Stddev	34.3
%RSD	.82935
#1	4111.2
#2	4118.5
#3	4173.9

Sample Name: 160-9438-G-2-H MSD Acquired: 12/10/2014 9:54:57 Type: Unk
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0182**	**.9648**	**.0961**	**.2130**	**.0954**	**.0932**	**.0927**	**48.41**	**.0940**
Stddev	.0010	.0257	.0017	.0033	.0016	.0017	.0022	.34	.0008
%RSD	5.737	2.664	1.737	1.530	1.629	1.863	2.408	.7015	.8747
#1	.0194	.9944	.0943	.2168	.0971	.0952	.0950	48.04	.0932
#2	.0179	.9489	.0965	.2109	.0942	.0919	.0924	48.46	.0940
#3	.0174	.9511	.0975	.2114	.0948	.0926	.0905	48.72	.0949
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1014**	**.0936**	**.0937**	**.9700**	**1.556**	**.1124**	**24.48**	**.1051**	**.0491**
Stddev	.0005	.0008	.0018	.0170	.035	.0005	.41	.0015	.0004
%RSD	.4734	.9006	1.958	1.754	2.249	.4228	1.668	1.408	.9120
#1	.1009	.0945	.0916	.9893	1.596	.1125	24.95	.1068	.0486
#2	.1015	.0930	.0947	.9573	1.532	.1118	24.31	.1045	.0490
#3	.1019	.0932	.0949	.9633	1.539	.1128	24.19	.1041	.0495
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**39.94**	**.0985**	**.1004**	**.0999**	**89.26**	**.0468**	**.0461**	**.9429**	**.0959**
Stddev	.70	.0006	.0003	.0010	.85	.0017	.0013	.0177	.0015
%RSD	1.760	.6352	.3019	1.039	.9517	3.554	2.889	1.882	1.604
#1	40.74	.0978	.1006	.0989	88.34	.0449	.0464	.9621	.0949
#2	39.42	.0989	.1000	.0999	89.44	.0480	.0446	.9271	.0952
#3	39.65	.0989	.1004	.1010	90.01	.0474	.0472	.9395	.0977
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9438-G-2-H MSD Acquired: 12/10/2014 9:54:57 Type: Unk
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9658	.0913	.0951	.0225	.0413	.0922	.1001
Stddev	.0174	.0015	.0019	.0003	.0113	.0043	.0007
%RSD	1.797	1.641	2.006	1.392	27.37	4.688	.6894
#1	.9856	.0900	.0971	.0223	.0283	.0946	.0993
#2	.9532	.0929	.0933	.0224	.0473	.0872	.1003
#3	.9586	.0909	.0949	.0229	.0483	.0947	.1007
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4425.6
Stddev	42.0
%RSD	.94818
#1	4385.6
#2	4422.0
#3	4469.3

Sample Name: MB 160-161880/1-A Acquired: 12/10/2014 9:58:38 Type: Unk
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0080	.0021	.0102	.0001	.0000	<.0000	.0296	<.0000
Stddev	.0002	.0024	.0008	.0034	.0001	.0001	.0006	.0009	.0001
%RSD	92.99	30.35	38.61	33.50	76.79	213.3	33.34	3.037	93.63
#1	-.0001	.0064	.0026	.0113	.0002	.0000	-.0019	.0304	-.0001
#2	-.0002	.0108	.0012	.0064	.0000	.0000	-.0011	.0298	.0000
#3	-.0005	.0068	.0026	.0129	.0001	.0001	-.0021	.0286	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	.0005	<.0000	.0140	<.0000	.0028	.0060	.0004	<.0000
Stddev	.0001	.0006	.0006	.0013	.0449	.0014	.0087	.0003	.0002
%RSD	68.53	128.2	37.28	9.577	141.2	49.97	145.1	72.21	226.8
#1	.0002	.0002	-.0013	.0128	-.0837	.0015	.0056	.0006	.0001
#2	.0001	.0011	-.0014	.0155	-.0070	.0025	-.0025	.0001	-.0002
#3	.0004	.0001	-.0025	.0137	-.0048	.0043	.0149	.0004	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0243	.0003	.0002	.0001	.0212	.0009	.0008	.0529	.0002
Stddev	.0053	.0001	.0005	.0004	.0031	.0009	.0009	.0043	.0004
%RSD	21.64	32.55	257.3	273.4	14.52	98.26	122.1	8.077	255.8
#1	.0302	.0004	.0007	-.0003	.0235	.0016	.0009	.0480	-.0002
#2	.0202	.0002	.0002	.0004	.0224	-.0001	-.0002	.0555	.0006
#3	.0225	.0004	-.0003	.0003	.0177	.0012	.0016	.0553	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: MB 160-161880/1-A Acquired: 12/10/2014 9:58:38 Type: Unk
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	<.0000	<.0000	.0025	.0142	<.0000	.0063
Stddev	.0000	.0012	.0005	.0008	.0170	.0022	.0001
%RSD	50.13	64.96	56.71	31.69	119.6	191.6	1.444
#1	.0000	-.0012	-.0011	.0017	.0091	-.0002	.0064
#2	.0001	-.0012	-.0011	.0025	.0333	-.0036	.0063
#3	.0001	-.0033	-.0003	.0033	.0004	.0004	.0062
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4119.3
Stddev	41.2
%RSD	.99920
#1	4151.8
#2	4073.0
#3	4133.1

Sample Name: CCV Acquired: 12/10/2014 10:02:36 Type: QC
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.022**	**50.23**	**5.113**	**5.061**	**5.090**	**5.119**	**5.162**	**52.24**	**5.163**
Stddev	.019	.58	.079	.079	.049	.161	.080	.81	.078
%RSD	1.889	1.148	1.535	1.563	.9701	3.154	1.542	1.547	1.516
#1	1.040	50.88	5.203	5.152	5.141	5.305	5.253	53.16	5.253
#2	1.023	49.79	5.058	5.014	5.086	5.038	5.103	51.69	5.109
#3	1.001	50.00	5.078	5.017	5.043	5.014	5.130	51.85	5.128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.198**	**5.212**	**5.168**	**50.74**	**50.72**	**5.123**	**50.02**	**5.065**	**1.037**
Stddev	.078	.087	.074	.87	.63	.070	.59	.058	.017
%RSD	1.508	1.670	1.430	1.714	1.251	1.360	1.185	1.135	1.612
#1	5.288	5.308	5.252	51.75	51.45	5.202	50.70	5.132	1.056
#2	5.146	5.191	5.112	50.29	50.28	5.074	49.65	5.030	1.024
#3	5.160	5.138	5.141	50.19	50.42	5.092	49.71	5.035	1.030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**51.13**	**5.211**	**52.26**	**5.209**	**50.80**	**1.026**	**1.024**	**5.010**	**5.183**
Stddev	.78	.075	.76	.077	.87	.019	.022	.057	.072
%RSD	1.533	1.441	1.460	1.478	1.705	1.871	2.109	1.129	1.385
#1	52.03	5.298	53.14	5.297	51.78	1.047	1.048	5.074	5.266
#2	50.66	5.161	51.75	5.157	50.15	1.011	1.008	4.965	5.137
#3	50.68	5.176	51.89	5.173	50.46	1.019	1.015	4.992	5.147
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: CCV Acquired: 12/10/2014 10:02:36 Type: QC
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.105**	**5.174**	**5.068**	**1.048**	**5.164**	**5.081**	**5.177**
Stddev	.106	.076	.069	.017	.099	.055	.077
%RSD	2.077	1.464	1.363	1.612	1.910	1.091	1.483
#1	5.227	5.259	5.148	1.067	5.275	5.144	5.265
#2	5.053	5.150	5.023	1.035	5.131	5.037	5.125
#3	5.035	5.113	5.034	1.042	5.086	5.063	5.141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**4055.0**
Stddev	41.0
%RSD	1.0101
#1	4008.2
#2	4072.2
#3	4084.5

Sample Name: CCB Acquired: 12/10/2014 10:06:25 Type: QC
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0016	.0013	.0116	.0006	.0006	<.0000	.0060	.0002
Stddev	.0004	.0042	.0009	.0035	.0000	.0002	.0024	.0004	.0002
%RSD	106.7	268.3	67.38	30.27	2.440	28.08	50.66	7.340	96.99
#1	.0001	.0064	.0017	.0133	.0006	.0008	-.0020	.0057	.0000
#2	-.0006	-.0001	.0018	.0139	.0006	.0005	-.0055	.0065	.0003
#3	-.0006	-.0016	.0003	.0075	.0006	.0005	-.0065	.0059	.0002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0007	.0004	.0009	.0076	<.0000	.0017	<.0000	.0007	<.0000
Stddev	.0001	.0005	.0018	.0015	.0165	.0012	.0064	.0004	.0001
%RSD	10.25	107.9	208.5	20.46	170.0	70.83	257.7	61.68	103.1
#1	.0007	.0000	-.0012	.0058	-.0150	.0028	-.0092	.0008	-.0001
#2	.0008	.0009	.0020	.0082	-.0228	.0018	-.0018	.0002	-.0001
#3	.0007	.0003	.0018	.0087	.0088	.0004	.0035	.0011	.0000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0037	.0004	.0055	.0008	.0154	<.0000	.0007	<.0000	.0001
Stddev	.0082	.0003	.0012	.0005	.0002	.0009	.0013	.0064	.0002
%RSD	219.7	96.32	21.04	72.41	1.492	147.0	175.3	385.9	201.3
#1	.0128	.0002	.0046	.0007	.0154	.0003	.0021	-.0031	-.0001
#2	.0018	.0008	.0069	.0002	.0152	-.0006	.0004	.0053	.0002
#3	-.0033	.0001	.0052	.0013	.0156	-.0015	-.0004	-.0072	.0003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Sample Name: CCB Acquired: 12/10/2014 10:06:25 Type: QC
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0007	.0008	.0001	.0035	.0116	.0006	.0005
Stddev	.0001	.0018	.0005	.0005	.0130	.0018	.0001
%RSD	17.86	213.5	372.6	14.31	112.4	296.5	11.19
#1	.0008	-.0005	.0006	.0040	.0266	-.0007	.0006
#2	.0007	.0001	-.0004	.0035	.0037	.0027	.0005
#3	.0005	.0029	.0002	.0030	.0044	-.0001	.0005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_3710
Units	Cts/S
Avg	3952.8
Stddev	14.6
%RSD	.36843
#1	3969.6
#2	3944.3
#3	3944.5

Sample Name: LCSSRM 160-161880/2- Acquired: 12/10/2014 10:10:21 Type: Unk
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=2

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.3376**	**39.29**	**.4486**	**.4799**	**1.088**	**.2912**	**.0015**	**40.21**	**.7149**
Stddev	.0026	.15	.0058	.0038	.006	.0014	.0009	.39	.0075
%RSD	.7771	.3766	1.284	.7965	.5531	.4648	60.62	.9678	1.046
#1	.3347	39.21	.4460	.4840	1.091	.2909	.0023	39.80	.7109
#2	.3399	39.46	.4552	.4793	1.092	.2926	.0016	40.57	.7236
#3	.3381	39.19	.4446	.4765	1.081	.2900	.0005	40.25	.7104
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.070**	**.4498**	**1.336**	**61.31**	**11.82**	**.0414**	**13.53**	**2.134**	**.5325**
Stddev	.011	.0039	.018	.14	.05	.0004	.13	.011	.0057
%RSD	1.030	.8665	1.308	.2259	.4218	.9766	.9968	.5174	1.071
#1	1.063	.4453	1.329	61.35	11.79	.0412	13.38	2.123	.5281
#2	1.083	.4517	1.356	61.43	11.88	.0418	13.62	2.145	.5390
#3	1.065	.4523	1.323	61.16	11.79	.0411	13.60	2.134	.5305
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.178**	**1.242**	**2.594**	**.5218**	**1.281**	**.4896**	**.6420**	**3.766**	**.7814**
Stddev	.030	.012	.023	.0045	.011	.0051	.0102	.026	.0067
%RSD	.5888	.9518	.9023	.8561	.8689	1.047	1.585	.6803	.8583
#1	5.190	1.233	2.581	.5190	1.274	.4872	.6345	3.745	.7773
#2	5.201	1.255	2.621	.5269	1.294	.4955	.6535	3.794	.7891
#3	5.144	1.236	2.579	.5195	1.275	.4861	.6378	3.758	.7776
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LCSSRM 160-161880/2- Acquired: 12/10/2014 10:10:21 Type: Unk
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=2

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8724	.0460	.9204	.7550	<.0000	.7591	.6570
Stddev	.0045	.0004	.0021	.0070	.0208	.0037	.0064
%RSD	.5174	.8750	.2235	.9262	28.25	.4914	.9727
#1	.8739	.0460	.9183	.7514	-.0500	.7555	.6537
#2	.8760	.0456	.9225	.7631	-.0892	.7590	.6643
#3	.8674	.0464	.9205	.7506	-.0812	.7629	.6529
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4946.1
Stddev	47.9
%RSD	.96912
#1	5001.4
#2	4916.7
#3	4920.2

Sample Name: 160-9735-B-5-D Acquired: 12/10/2014 10:13:49 Type: Unk
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=5

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000**	**19.74**	**.0233**	**.0050**	**.3964**	**.0016**	**.0041**	**19.66**	**.0007**
Stddev	.0005	.12	.0009	.0041	.0004	.0001	.0011	.21	.0001
%RSD	3593.	.6250	3.757	82.34	.1004	3.757	27.93	1.063	16.09
#1	-.0005	19.67	.0240	.0061	.3960	.0016	.0030	19.45	.0008
#2	.0005	19.88	.0235	.0083	.3968	.0016	.0053	19.87	.0007
#3	.0001	19.67	.0223	.0004	.3965	.0015	.0039	19.65	.0006
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0733**	**.0315**	**.0500**	**34.91**	**2.063**	**.0196**	**7.217**	**4.241**	**.0044**
Stddev	.0008	.0007	.0012	.16	.017	.0016	.061	.023	.0001
%RSD	1.126	2.345	2.474	.4485	.8089	8.230	.8406	.5339	2.023
#1	.0724	.0309	.0510	34.73	2.075	.0206	7.172	4.234	.0044
#2	.0740	.0323	.0486	35.03	2.044	.0206	7.286	4.267	.0044
#3	.0734	.0313	.0503	34.96	2.071	.0178	7.194	4.224	.0045
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.3212**	**.0706**	**.8529**	**.0327**	**.0971**	**<.0000**	**<.0000**	**.4403**	**.0006**
Stddev	.0075	.0004	.0061	.0004	.0032	.0005	.0029	.0020	.0005
%RSD	2.337	.6278	.7140	1.245	3.299	69.95	200.4	.4471	80.83
#1	.3211	.0702	.8469	.0331	.0988	-.0002	-.0048	.4422	.0011
#2	.3288	.0711	.8591	.0326	.0934	-.0011	-.0001	.4404	.0001
#3	.3138	.0704	.8529	.0323	.0990	-.0009	.0005	.4383	.0007
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9735-B-5-D Acquired: 12/10/2014 10:13:49 Type: Unk
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=5

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0677	.0237	.1129	<.0000	<.0000	.0759	.1504
Stddev	.0001	.0032	.0018	.0015	.0016	.0019	.0014
%RSD	.1498	13.58	1.638	502.8	4.590	2.442	.9465
#1	.0676	.0225	.1149	-.0021	-.0344	.0739	.1490
#2	.0677	.0273	.1124	.0005	-.0350	.0763	.1518
#3	.0677	.0212	.1113	.0007	-.0375	.0775	.1502
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4618.4
Stddev	37.0
%RSD	.80211
#1	4648.5
#2	4577.0
#3	4629.6

Sample Name: 160-9735-B-5-D SD Acquired: 12/10/2014 10:17:34 Type: Unk
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=25

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000**	**4.099**	**.0059**	**.0013**	**.0829**	**.0003**	**<.0000**	**3.792**	**.0000**
Stddev	.0002	.027	.0014	.0017	.0009	.0000	.0020	.023	.0001
%RSD	759.4	.6513	23.09	133.8	1.114	9.383	235.3	.6044	170.5
#1	.0002	4.073	.0044	.0001	.0827	.0003	-.0003	3.796	.0001
#2	-.0002	4.126	.0063	.0005	.0839	.0003	.0008	3.812	.0000
#3	.0001	4.096	.0070	.0032	.0821	.0003	-.0030	3.767	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0142**	**.0055**	**.0070**	**7.252**	**.3370**	**.0064**	**1.445**	**.8776**	**.0006**
Stddev	.0005	.0002	.0008	.017	.0179	.0005	.003	.0062	.0000
%RSD	3.319	4.413	11.39	.2319	5.324	7.272	.1901	.7022	3.285
#1	.0142	.0055	.0063	7.242	.3220	.0069	1.442	.8730	.0006
#2	.0147	.0053	.0069	7.271	.3569	.0059	1.447	.8846	.0006
#3	.0137	.0057	.0079	7.241	.3323	.0064	1.445	.8752	.0006
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0813**	**.0138**	**.1598**	**.0058**	**.0227**	**<.0000**	**<.0000**	**.0883**	**.0002**
Stddev	.0010	.0002	.0017	.0006	.0014	.0003	.0001	.0028	.0001
%RSD	1.291	1.134	1.055	11.02	6.164	751.5	25.04	3.222	92.44
#1	.0800	.0138	.1597	.0065	.0243	-.0004	-.0004	.0886	.0002
#2	.0819	.0139	.1616	.0053	.0217	.0001	-.0002	.0909	.0003
#3	.0818	.0136	.1582	.0055	.0221	.0002	-.0003	.0852	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9735-B-5-D SD Acquired: 12/10/2014 10:17:34 Type: Unk
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=25

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0142**	**.0031**	**.0230**	**.0020**	**<.0000**	**.0165**	**.0302**
Stddev	.0001	.0011	.0001	.0002	.0088	.0020	.0003
%RSD	.3749	36.62	.2914	9.660	64.52	12.35	.9383
#1	.0142	.0032	.0230	.0019	-.0184	.0183	.0302
#2	.0143	.0042	.0231	.0019	-.0189	.0143	.0305
#3	.0142	.0019	.0229	.0022	-.0035	.0169	.0299
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**4673.1**
Stddev	23.6
%RSD	.50538
#1	4696.7
#2	4673.1
#3	4649.5

Sample Name: 160-9735-B-5-E MS Acquired: 12/10/2014 10:21:25 Type: Unk
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=5

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0338	38.79	.1986	.2961	.6145	.1747	.1886	15.86	.1814
Stddev	.0004	.36	.0053	.0060	.0040	.0011	.0037	.41	.0048
%RSD	1.322	.9206	2.678	2.028	.6572	.6015	1.972	2.583	2.628
#1	.0343	38.47	.1927	.2903	.6112	.1735	.1844	15.41	.1760
#2	.0334	38.74	.2000	.3023	.6134	.1749	.1898	15.96	.1833
#3	.0339	39.17	.2030	.2955	.6190	.1756	.1915	16.21	.1849
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2223	.2308	.2352	44.44	5.468	.2034	11.27	3.820	.0908
Stddev	.0054	.0030	.0044	.39	.057	.0022	.14	.033	.0027
%RSD	2.443	1.317	1.864	.8771	1.049	1.061	1.221	.8669	2.957
#1	.2161	.2277	.2301	44.01	5.420	.2017	11.12	3.792	.0878
#2	.2243	.2309	.2376	44.56	5.452	.2027	11.28	3.812	.0917
#3	.2264	.2338	.2378	44.76	5.532	.2059	11.40	3.857	.0930
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.085	.2783	1.122	.2194	1.868	.0352	.0853	.9624	.1708
Stddev	.006	.0069	.029	.0055	.053	.0025	.0030	.0061	.0046
%RSD	.2698	2.462	2.563	2.487	2.860	7.120	3.473	.6303	2.708
#1	2.079	.2706	1.089	.2132	1.808	.0329	.0819	.9577	.1657
#2	2.089	.2805	1.132	.2216	1.883	.0348	.0871	.9602	.1719
#3	2.088	.2838	1.144	.2235	1.911	.0379	.0870	.9693	.1748
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9735-B-5-E MS Acquired: 12/10/2014 10:21:25 Type: Unk
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=5

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2613	.2033	.3587	.0366	.1372	.3007	.3554
Stddev	.0015	.0034	.0027	.0008	.0076	.0043	.0096
%RSD	.5756	1.669	.7398	2.146	5.523	1.434	2.690
#1	.2600	.2058	.3564	.0372	.1403	.2965	.3446
#2	.2609	.1995	.3579	.0357	.1286	.3005	.3588
#3	.2629	.2047	.3616	.0368	.1428	.3051	.3628
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4579.4
Stddev	45.2
%RSD	.98649
#1	4628.2
#2	4570.7
#3	4539.1

Sample Name: 160-9735-B-5-F MSD Acquired: 12/10/2014 10:25:00 Type: Unk
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=5

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0359**	**38.05**	**.1967**	**.2993**	**.5367**	**.1787**	**.1837**	**15.10**	**.1810**
Stddev	.0007	.43	.0034	.0020	.0040	.0014	.0004	.16	.0024
%RSD	1.841	1.120	1.729	.6665	.7517	.7730	.2316	1.087	1.301
#1	.0365	38.54	.1962	.2992	.5413	.1803	.1836	15.26	.1834
#2	.0352	37.88	.2003	.2974	.5338	.1779	.1842	15.11	.1809
#3	.0360	37.74	.1936	.3014	.5350	.1778	.1834	14.94	.1787
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2166**	**.2301**	**.2273**	**43.13**	**5.174**	**.2067**	**10.07**	**3.284**	**.0923**
Stddev	.0025	.0044	.0031	.26	.038	.0015	.16	.041	.0014
%RSD	1.160	1.928	1.362	.5919	.7391	.7074	1.551	1.242	1.506
#1	.2188	.2336	.2303	43.42	5.193	.2082	10.24	3.329	.0936
#2	.2170	.2315	.2275	42.99	5.199	.2053	10.05	3.272	.0924
#3	.2138	.2251	.2241	42.98	5.130	.2067	9.932	3.250	.0908
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.037**	**.2613**	**.9668**	**.2229**	**1.897**	**.0358**	**.0870**	**.8990**	**.1722**
Stddev	.007	.0026	.0120	.0025	.021	.0008	.0023	.0146	.0023
%RSD	.3694	.9958	1.237	1.123	1.088	2.198	2.595	1.620	1.325
#1	2.045	.2639	.9769	.2245	1.918	.0360	.0872	.9158	.1738
#2	2.035	.2612	.9699	.2242	1.897	.0365	.0846	.8891	.1731
#3	2.031	.2587	.9536	.2200	1.876	.0349	.0891	.8922	.1695
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9735-B-5-F MSD Acquired: 12/10/2014 10:25:00 Type: Unk
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=5

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2538	.2113	.3618	.0377	.1379	.2956	.3379
Stddev	.0018	.0031	.0041	.0002	.0274	.0064	.0045
%RSD	.6933	1.475	1.141	.5332	19.84	2.178	1.343
#1	.2558	.2136	.3665	.0376	.1695	.3029	.3421
#2	.2527	.2126	.3593	.0376	.1223	.2934	.3386
#3	.2528	.2077	.3595	.0379	.1219	.2906	.3331
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4551.6
Stddev	68.3
%RSD	1.5008
#1	4491.1
#2	4538.0
#3	4625.7

Sample Name: 160-9735-A-11-A Acquired: 12/10/2014 10:28:37 Type: Unk
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=5

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**18.13**	**.0123**	**<.0000**	**.2141**	**.0012**	**<.0000**	**5.373**	**<.0000**
Stddev	.0005	.22	.0004	.0004	.0021	.0004	.0013	.051	.0001
%RSD	513.1	1.233	3.475	35.94	.9909	31.14	80.69	.9410	261.6
#1	.0001	17.87	.0122	-.0006	.2116	.0016	-.0004	5.322	.0000
#2	-.0004	18.26	.0120	-.0013	.2154	.0010	-.0031	5.375	.0000
#3	.0006	18.26	.0128	-.0010	.2152	.0010	-.0015	5.423	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0155**	**.0233**	**.0193**	**25.68**	**1.369**	**.0140**	**3.498**	**1.175**	**.0008**
Stddev	.0002	.0007	.0012	.29	.022	.0006	.019	.009	.0001
%RSD	1.318	2.823	6.026	1.127	1.647	4.163	.5429	.7293	12.72
#1	.0153	.0236	.0186	25.35	1.391	.0144	3.476	1.165	.0010
#2	.0156	.0238	.0187	25.85	1.369	.0134	3.503	1.180	.0008
#3	.0156	.0226	.0207	25.84	1.346	.0144	3.513	1.180	.0008
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1127**	**.0292**	**.4614**	**.0388**	**.1296**	**<.0000**	**<.0000**	**.4534**	**.0001**
Stddev	.0043	.0002	.0041	.0009	.0016	.0008	.0017	.0047	.0005
%RSD	3.774	.7928	.8862	2.194	1.272	90.35	227.6	1.042	572.1
#1	.1172	.0290	.4571	.0378	.1277	-.0011	.0008	.4540	.0004
#2	.1123	.0294	.4618	.0392	.1305	.0000	-.0005	.4484	-.0005
#3	.1087	.0293	.4653	.0393	.1307	-.0016	-.0025	.4578	.0004
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9735-A-11-A Acquired: 12/10/2014 10:28:37 Type: Unk
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=5

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0206	.0190	.2284	.0010	<.0000	.0456	.0816
Stddev	.0002	.0022	.0032	.0001	.0131	.0020	.0009
%RSD	.9936	11.31	1.420	8.207	23.50	4.381	1.092
#1	.0209	.0165	.2247	.0011	-.0680	.0452	.0806
#2	.0205	.0200	.2304	.0011	-.0570	.0478	.0819
#3	.0206	.0205	.2301	.0009	-.0420	.0439	.0823
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4819.5
Stddev	12.1
%RSD	.25080
#1	4823.0
#2	4806.1
#3	4829.5

Sample Name: 160-9735-B-15-B Acquired: 12/10/2014 10:32:27 Type: Unk
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=5

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	17.06	.0140	<.0000	.2130	.0011	.0034	6.301	.0003
Stddev	.0003	.17	.0009	.0030	.0021	.0000	.0015	.129	.0001
%RSD	61.65	.9872	6.225	305.3	1.008	3.037	45.37	2.040	36.64
#1	-.0005	16.89	.0137	-.0037	.2106	.0011	.0029	6.156	.0002
#2	-.0008	17.07	.0150	-.0015	.2134	.0011	.0051	6.344	.0003
#3	-.0002	17.23	.0134	.0022	.2149	.0010	.0022	6.402	.0004
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0179	.0265	.0241	25.98	1.319	.0142	3.772	1.755	.0017
Stddev	.0003	.0020	.0009	.16	.022	.0010	.017	.011	.0001
%RSD	1.767	7.405	3.565	.6339	1.699	7.266	.4454	.6344	4.904
#1	.0176	.0276	.0232	25.79	1.293	.0154	3.754	1.742	.0018
#2	.0179	.0276	.0249	26.07	1.333	.0138	3.788	1.760	.0018
#3	.0182	.0242	.0242	26.09	1.330	.0134	3.775	1.763	.0016
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1172	.0417	.4845	.0319	.1001	<.0000	<.0000	.3375	.0005
Stddev	.0064	.0009	.0074	.0006	.0003	.0015	.0005	.0042	.0005
%RSD	5.500	2.198	1.531	1.984	.3337	1029.	32.95	1.246	97.95
#1	.1199	.0407	.4759	.0312	.0999	-.0013	-.0021	.3368	.0009
#2	.1220	.0418	.4881	.0320	.1005	-.0006	-.0018	.3338	.0006
#3	.1099	.0425	.4893	.0325	.1000	.0015	-.0010	.3421	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9735-B-15-B Acquired: 12/10/2014 10:32:27 Type: Unk
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=5

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0231	.0204	.1686	<.0000	<.0000	.0419	.0880
Stddev	.0002	.0026	.0020	.0008	.0077	.0020	.0014
%RSD	1.046	12.77	1.180	131.9	24.64	4.708	1.569
#1	.0228	.0185	.1666	-.0005	-.0276	.0416	.0864
#2	.0232	.0233	.1706	-.0014	-.0260	.0400	.0887
#3	.0233	.0193	.1686	.0002	-.0400	.0439	.0890
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4630.9
Stddev	66.4
%RSD	1.4332
#1	4605.2
#2	4581.3
#3	4706.3

Sample Name: 160-9735-B-20-B Acquired: 12/10/2014 10:36:17 Type: Unk
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=5

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	18.80	.0147	<.0000	.2419	.0011	.0022	10.89	<.0000
Stddev	.0006	.21	.0003	.0025	.0024	.0000	.0022	.02	.0001
%RSD	80.68	1.115	2.359	59.60	.9919	3.710	96.50	.1717	197.7
#1	-.0001	18.56	.0146	-.0026	.2393	.0010	.0035	10.87	-.0001
#2	-.0010	18.90	.0145	-.0071	.2440	.0011	.0035	10.89	.0001
#3	-.0011	18.94	.0151	-.0030	.2425	.0011	-.0003	10.90	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0134	.0229	.0195	28.32	1.442	.0154	4.570	1.233	.0014
Stddev	.0002	.0011	.0006	.22	.026	.0007	.039	.013	.0001
%RSD	1.218	4.596	3.093	.7878	1.792	4.271	.8533	1.086	3.773
#1	.0132	.0222	.0194	28.06	1.436	.0147	4.525	1.218	.0015
#2	.0134	.0241	.0201	28.45	1.420	.0156	4.588	1.243	.0014
#3	.0135	.0223	.0189	28.44	1.471	.0160	4.597	1.238	.0014
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1254	.0305	.4651	.0369	.1231	<.0000	<.0000	.2966	.0002
Stddev	.0089	.0001	.0012	.0011	.0029	.0010	.0018	.0111	.0005
%RSD	7.061	.4782	.2565	2.888	2.383	117.5	437.8	3.750	220.5
#1	.1241	.0305	.4640	.0375	.1264	-.0008	-.0011	.2838	.0006
#2	.1349	.0304	.4649	.0357	.1219	.0001	-.0017	.3023	-.0003
#3	.1173	.0307	.4663	.0375	.1210	-.0020	.0016	.3037	.0004
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9735-B-20-B Acquired: 12/10/2014 10:36:17 Type: Unk
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=5

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0280	.0178	.1702	.0016	<.0000	.0463	.0865
Stddev	.0003	.0002	.0019	.0005	.0099	.0039	.0002
%RSD	1.005	1.341	1.136	32.38	24.89	8.463	.2553
#1	.0277	.0179	.1680	.0013	-.0514	.0503	.0867
#2	.0281	.0180	.1717	.0022	-.0332	.0425	.0863
#3	.0282	.0176	.1709	.0013	-.0353	.0462	.0866
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4737.7
Stddev	36.4
%RSD	.76866
#1	4779.3
#2	4711.8
#3	4722.0

Sample Name: 160-9682-A-5-G Acquired: 12/10/2014 10:40:06 Type: Unk
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=5

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**14.40**	**.0118**	**<.0000**	**.2024**	**.0009**	**.0017**	**8.986**	**<.0000**
Stddev	.0004	.04	.0007	.0023	.0010	.0000	.0015	.237	.0001
%RSD	793.8	.2693	5.762	63.51	.5162	3.148	87.88	2.640	163.6
#1	-.0002	14.37	.0119	-.0013	.2013	.0008	.0003	8.759	.0000
#2	-.0002	14.39	.0124	-.0059	.2026	.0009	.0033	8.967	-.0002
#3	.0006	14.44	.0111	-.0036	.2033	.0009	.0015	9.232	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0134**	**.0208**	**.0165**	**21.31**	**1.265**	**.0104**	**3.296**	**1.200**	**.0007**
Stddev	.0005	.0006	.0006	.13	.019	.0008	.025	.007	.0000
%RSD	4.020	2.901	3.727	.6034	1.475	7.996	.7586	.5855	6.780
#1	.0129	.0215	.0158	21.20	1.246	.0099	3.273	1.192	.0007
#2	.0133	.0208	.0170	21.28	1.284	.0099	3.291	1.203	.0006
#3	.0139	.0203	.0167	21.45	1.265	.0113	3.322	1.206	.0007
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0820**	**.0246**	**.4219**	**.0389**	**.1512**	**<.0000**	**<.0000**	**.3823**	**.0002**
Stddev	.0077	.0008	.0105	.0020	.0032	.0020	.0004	.0049	.0003
%RSD	9.421	3.314	2.492	5.063	2.144	566.0	30.62	1.291	119.2
#1	.0731	.0239	.4123	.0391	.1475	-.0025	-.0014	.3879	.0001
#2	.0871	.0244	.4203	.0369	.1532	.0000	-.0008	.3789	.0006
#3	.0858	.0255	.4331	.0408	.1530	.0014	-.0016	.3800	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9682-A-5-G Acquired: 12/10/2014 10:40:06 Type: Unk
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=5

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0200	.0154	.2053	<.0000	<.0000	.0396	.0736
Stddev	.0001	.0015	.0013	.0005	.0051	.0012	.0019
%RSD	.5412	9.956	.6243	96.08	22.96	3.021	2.548
#1	.0199	.0160	.2052	.0000	-.0225	.0408	.0718
#2	.0201	.0166	.2041	-.0010	-.0275	.0397	.0734
#3	.0201	.0137	.2067	-.0005	-.0172	.0384	.0755
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4506.9
Stddev	10.4
%RSD	.23039
#1	4518.7
#2	4502.9
#3	4499.2

Sample Name: 160-9682-B-9-D Acquired: 12/10/2014 10:43:58 Type: Unk
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=5

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0002**	**16.37**	**.0141**	**<.0000**	**.2102**	**.0010**	**.0000**	**5.797**	**<.0000**
Stddev	.0008	.20	.0019	.0029	.0024	.0000	.0008	.226	.0001
%RSD	400.8	1.224	13.80	455.5	1.121	2.730	1713.	3.894	90.42
#1	-.0007	16.14	.0130	-.0005	.2075	.0010	-.0008	5.552	-.0003
#2	.0008	16.49	.0130	.0022	.2118	.0010	.0008	5.843	-.0001
#3	.0005	16.48	.0164	-.0036	.2113	.0010	.0001	5.996	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0151**	**.0242**	**.0197**	**25.98**	**1.223**	**.0136**	**3.575**	**1.432**	**.0012**
Stddev	.0006	.0008	.0017	.21	.013	.0006	.019	.016	.0001
%RSD	4.106	3.177	8.772	.7918	1.045	4.348	.5424	1.088	8.961
#1	.0143	.0237	.0180	25.75	1.212	.0138	3.553	1.414	.0011
#2	.0154	.0238	.0196	26.14	1.219	.0141	3.585	1.441	.0011
#3	.0155	.0250	.0215	26.06	1.237	.0130	3.588	1.441	.0013
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0963**	**.0289**	**.4543**	**.0279**	**.0962**	**<.0000**	**.0011**	**.3061**	**.0002**
Stddev	.0110	.0011	.0171	.0011	.0026	.0006	.0024	.0026	.0002
%RSD	11.40	3.634	3.760	4.096	2.725	61.23	225.0	.8364	81.54
#1	.0838	.0277	.4352	.0269	.0933	-.0004	.0016	.3041	.0005
#2	.1008	.0294	.4596	.0291	.0972	-.0017	-.0015	.3089	.0001
#3	.1043	.0297	.4681	.0278	.0982	-.0011	.0031	.3052	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9682-B-9-D Acquired: 12/10/2014 10:43:58 Type: Unk
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=5

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0198	.0203	.1817	<.0000	<.0000	.0430	.0793
Stddev	.0001	.0010	.0017	.0010	.0027	.0040	.0032
%RSD	.7265	4.782	.9363	552.3	11.89	9.338	4.068
#1	.0196	.0214	.1798	-.0008	-.0244	.0384	.0758
#2	.0199	.0195	.1824	.0009	-.0241	.0459	.0799
#3	.0199	.0202	.1830	-.0006	-.0196	.0447	.0822
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4338.1
Stddev	15.0
%RSD	.34495
#1	4355.0
#2	4333.0
#3	4326.4

Sample Name: CCV Acquired: 12/10/2014 10:47:50 Type: QC
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.012**	**48.07**	**4.962**	**4.928**	**4.841**	**4.877**	**5.036**	**52.31**	**5.034**
Stddev	.012	.27	.093	.019	.112	.029	.087	.93	.088
%RSD	1.136	.5654	1.874	.3900	2.319	.5994	1.728	1.779	1.742
#1	1.007	48.25	5.002	4.941	4.971	4.896	5.069	52.79	5.070
#2	1.025	48.20	5.028	4.936	4.771	4.892	5.101	52.90	5.097
#3	1.004	47.76	4.856	4.906	4.782	4.843	4.937	51.24	4.934
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.109**	**4.956**	**5.023**	**50.45**	**47.98**	**4.945**	**47.94**	**4.813**	**1.040**
Stddev	.093	.066	.087	.41	.18	.025	.35	.024	.019
%RSD	1.829	1.328	1.730	.8223	.3674	.4970	.7283	.5032	1.788
#1	5.153	4.916	5.049	50.67	48.12	4.967	48.01	4.830	1.050
#2	5.172	5.032	5.093	50.72	48.04	4.949	48.25	4.824	1.052
#3	5.001	4.920	4.926	49.98	47.78	4.919	47.56	4.785	1.019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**50.27**	**5.079**	**51.61**	**5.017**	**51.54**	**.9945**	**.9812**	**4.802**	**5.018**
Stddev	.33	.090	.94	.088	.99	.0208	.0193	.033	.092
%RSD	.6474	1.776	1.824	1.753	1.921	2.089	1.971	.6924	1.831
#1	50.56	5.120	52.03	5.051	52.02	1.004	.9888	4.831	5.056
#2	50.34	5.141	52.26	5.084	52.21	1.009	.9955	4.809	5.085
#3	49.92	4.975	50.53	4.918	50.41	.9706	.9592	4.766	4.914
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: CCV Acquired: 12/10/2014 10:47:50 Type: QC
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.935**	**5.123**	**4.815**	**1.031**	**5.104**	**4.895**	**5.083**
Stddev	.090	.080	.020	.020	.077	.033	.095
%RSD	1.828	1.561	.4182	1.940	1.513	.6798	1.867
#1	5.033	5.088	4.827	1.042	5.066	4.913	5.123
#2	4.917	5.214	4.826	1.043	5.193	4.915	5.151
#3	4.855	5.066	4.792	1.008	5.054	4.856	4.975
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**4173.4**
Stddev	59.7
%RSD	1.4312
#1	4156.8
#2	4123.7
#3	4239.7

Sample Name: CCB Acquired: 12/10/2014 10:51:38 Type: QC
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0005**	**.0042**	**.0007**	**.0116**	**.0004**	**.0003**	**.0001**	**.0048**	**.0000**
Stddev	.0006	.0155	.0002	.0033	.0001	.0000	.0016	.0004	.0001
%RSD	131.6	370.3	26.57	28.77	28.78	15.07	1042.	9.160	356.1
#1	-.0003	.0115	.0008	.0142	.0004	.0004	.0015	.0048	-.0001
#2	.0008	-.0136	.0005	.0078	.0006	.0003	-.0016	.0052	.0000
#3	.0009	.0147	.0009	.0127	.0004	.0003	.0005	.0044	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0005**	**<.0000**	**.0001**	**.0045**	**<.0000**	**.0019**	**.0016**	**.0003**	**.0001**
Stddev	.0003	.0008	.0020	.0003	.0194	.0004	.0144	.0001	.0001
%RSD	55.96	469.1	2109.	7.434	32.83	18.38	914.2	15.95	82.60
#1	.0007	.0007	.0024	.0042	-.0428	.0020	-.0147	.0004	.0001
#2	.0005	-.0004	-.0009	.0044	-.0538	.0015	.0127	.0003	.0000
#3	.0002	-.0008	-.0012	.0048	-.0805	.0022	.0068	.0003	.0002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**<.0000**	**.0002**	**.0045**	**.0002**	**.0101**	**.0003**	**<.0000**	**.0000**	**.0002**
Stddev	.0060	.0003	.0018	.0005	.0017	.0011	.0012	.0021	.0003
%RSD	83.59	138.5	39.42	198.1	16.84	404.0	467.2	4592.	201.4
#1	-.0139	-.0001	.0064	.0008	.0096	-.0005	.0005	-.0003	-.0001
#2	-.0051	.0004	.0043	.0000	.0088	.0016	.0004	-.0018	.0001
#3	-.0025	.0003	.0028	.0000	.0120	-.0002	-.0017	.0023	.0005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Sample Name: CCB Acquired: 12/10/2014 10:51:38 Type: QC
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	<.0000	<.0000	.0019	<.0000	.0007	.0003
Stddev	.0000	.0012	.0004	.0005	.0241	.0031	.0001
%RSD	10.04	44.77	251.5	28.97	125.0	446.3	31.09
#1	.0004	-.0039	.0003	.0017	-.0410	.0042	.0004
#2	.0004	-.0030	-.0004	.0014	-.0236	-.0001	.0003
#3	.0004	-.0014	-.0003	.0025	.0067	-.0019	.0002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_3710
Units	Cts/S
Avg	4046.9
Stddev	15.2
%RSD	.37506
#1	4061.1
#2	4048.7
#3	4030.9

Sample Name: 160-9682-B-13-D Acquired: 12/10/2014 10:55:35 Type: Unk
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=5

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	16.08	.0127	<.0000	.1752	.0009	.0019	9.801	<.0000
Stddev	.0005	.06	.0006	.0033	.0002	.0000	.0015	.305	.0001
%RSD	173.5	.3884	5.060	3349.	.1194	2.225	77.82	3.112	54.79
#1	.0001	16.12	.0133	-.0014	.1753	.0009	.0029	9.516	-.0002
#2	-.0002	16.11	.0129	.0037	.1753	.0009	.0026	9.763	-.0002
#3	-.0008	16.00	.0120	-.0025	.1750	.0009	.0002	10.12	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0122	.0218	.0161	21.95	1.326	.0124	3.697	.9985	.0007
Stddev	.0004	.0006	.0005	.07	.046	.0011	.009	.0014	.0001
%RSD	2.979	2.858	2.866	.3160	3.474	8.682	.2389	.1398	10.22
#1	.0119	.0225	.0162	21.92	1.273	.0136	3.687	.9995	.0007
#2	.0121	.0216	.0157	22.03	1.355	.0120	3.703	.9991	.0007
#3	.0126	.0214	.0166	21.90	1.351	.0115	3.701	.9969	.0008
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0778	.0262	.3936	.0239	.1070	<.0000	<.0000	.3754	<.0000
Stddev	.0077	.0007	.0117	.0003	.0036	.0011	.0016	.0034	.0005
%RSD	9.833	2.678	2.972	1.392	3.329	337.9	264.5	.9009	114.8
#1	.0728	.0255	.3824	.0239	.1034	-.0003	.0011	.3779	-.0003
#2	.0741	.0262	.3925	.0236	.1072	.0008	-.0021	.3766	-.0010
#3	.0866	.0269	.4057	.0243	.1105	-.0015	-.0008	.3715	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9682-B-13-D Acquired: 12/10/2014 10:55:35 Type: Unk
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=5

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0213	.0170	.1936	.0015	<.0000	.0412	.0692
Stddev	.0001	.0019	.0008	.0006	.0119	.0036	.0022
%RSD	.2469	10.92	.3888	41.82	34.65	8.719	3.203
#1	.0213	.0178	.1944	.0018	-.0474	.0410	.0672
#2	.0212	.0149	.1930	.0020	-.0241	.0449	.0689
#3	.0213	.0183	.1934	.0008	-.0315	.0377	.0716
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4405.1
Stddev	18.8
%RSD	.42752
#1	4390.2
#2	4399.0
#3	4426.3

Sample Name: 160-9682-B-17-D Acquired: 12/10/2014 10:59:25 Type: Unk
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=5

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	15.40	.0124	.0019	.1974	.0008	.0032	31.51	<.0000
Stddev	.0005	.19	.0014	.0019	.0022	.0001	.0010	.29	.0001
%RSD	153.4	1.223	10.94	102.3	1.127	10.89	32.39	.9120	104.4
#1	.0001	15.56	.0110	.0007	.1993	.0008	.0024	31.18	.0000
#2	-.0002	15.44	.0124	.0009	.1978	.0009	.0028	31.73	-.0001
#3	-.0009	15.19	.0138	.0041	.1949	.0008	.0044	31.61	-.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0138	.0201	.0148	21.99	1.239	.0136	12.77	1.022	.0013
Stddev	.0001	.0002	.0003	.27	.039	.0005	.16	.011	.0003
%RSD	.7060	1.127	2.138	1.234	3.167	3.445	1.242	1.119	26.67
#1	.0139	.0202	.0146	22.24	1.249	.0137	12.91	1.031	.0017
#2	.0139	.0199	.0151	22.03	1.273	.0140	12.81	1.027	.0011
#3	.0137	.0203	.0146	21.70	1.196	.0130	12.60	1.009	.0011
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0872	.0231	.3995	.0390	.1451	<.0000	<.0000	.3528	<.0000
Stddev	.0053	.0003	.0047	.0005	.0017	.0010	.0007	.0030	.0003
%RSD	6.125	1.084	1.186	1.339	1.168	169.9	179.6	.8563	73.95
#1	.0866	.0228	.3941	.0386	.1432	-.0002	-.0002	.3548	-.0004
#2	.0928	.0232	.4029	.0388	.1460	-.0017	-.0012	.3543	-.0001
#3	.0822	.0232	.4014	.0396	.1462	.0002	.0002	.3494	-.0007
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9682-B-17-D Acquired: 12/10/2014 10:59:25 Type: Unk
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=5

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0278	.0159	.2071	.0001	<.0000	.0390	.0667
Stddev	.0003	.0005	.0016	.0005	.0034	.0017	.0007
%RSD	1.012	3.297	.7487	353.4	5.253	4.325	1.078
#1	.0281	.0164	.2088	.0001	-.0671	.0377	.0659
#2	.0279	.0154	.2069	.0006	-.0653	.0409	.0672
#3	.0276	.0160	.2057	-.0003	-.0606	.0383	.0670
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4357.0
Stddev	53.5
%RSD	1.2290
#1	4314.8
#2	4338.9
#3	4417.2

Sample Name: 160-9682-A-22-C Acquired: 12/10/2014 11:03:16 Type: Unk
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=5

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	19.77	.0144	<.0000	.2915	.0010	.0026	15.42	<.0000
Stddev	.0005	.10	.0011	.0024	.0011	.0000	.0023	.32	.0000
%RSD	67.71	.5245	7.391	346.5	.3838	1.468	90.86	2.098	21.18
#1	-.0004	19.65	.0155	.0019	.2902	.0010	.0024	15.07	-.0001
#2	-.0012	19.83	.0144	-.0012	.2920	.0010	.0003	15.49	-.0002
#3	-.0004	19.82	.0133	-.0029	.2923	.0010	.0050	15.70	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0147	.0269	.0194	24.70	1.514	.0147	4.464	1.116	.0012
Stddev	.0004	.0006	.0017	.20	.025	.0009	.030	.006	.0002
%RSD	2.570	2.062	8.962	.8080	1.629	6.237	.6838	.5572	13.91
#1	.0144	.0262	.0203	24.47	1.529	.0158	4.448	1.109	.0011
#2	.0146	.0271	.0205	24.79	1.528	.0141	4.499	1.122	.0011
#3	.0151	.0272	.0174	24.83	1.486	.0143	4.445	1.117	.0014
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0709	.0278	.4507	.0722	.1932	<.0000	<.0000	.3791	<.0000
Stddev	.0126	.0007	.0081	.0021	.0057	.0010	.0008	.0022	.0004
%RSD	17.83	2.475	1.802	2.865	2.943	91.22	101.9	.5820	23970.
#1	.0845	.0271	.4420	.0698	.1868	-.0002	-.0016	.3771	.0000
#2	.0595	.0279	.4522	.0731	.1951	-.0021	-.0002	.3788	.0004
#3	.0687	.0285	.4580	.0736	.1977	-.0009	-.0004	.3815	-.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9682-A-22-C Acquired: 12/10/2014 11:03:16 Type: Unk
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=5

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0270	.0181	.2345	.0007	<.0000	.0437	.0936
Stddev	.0000	.0020	.0008	.0013	.0107	.0008	.0022
%RSD	.1198	11.27	.3567	189.8	42.54	1.864	2.322
#1	.0269	.0159	.2339	-.0007	-.0289	.0445	.0913
#2	.0270	.0188	.2354	.0009	-.0338	.0436	.0940
#3	.0270	.0198	.2340	.0018	-.0132	.0429	.0956
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4221.7
Stddev	38.4
%RSD	.91040
#1	4246.8
#2	4177.5
#3	4241.0

Sample Name: 160-9682-A-23-C Acquired: 12/10/2014 11:07:06 Type: Unk
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=5

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	20.60	.0143	.0001	.2853	.0011	.0011	13.13	.0001
Stddev	.0002	.18	.0012	.0030	.0029	.0000	.0011	.33	.0001
%RSD	19.52	.8710	8.616	2377.	1.010	3.208	102.0	2.524	151.3
#1	-.0010	20.41	.0134	.0030	.2823	.0011	.0003	12.81	.0001
#2	-.0013	20.62	.0157	-.0030	.2857	.0011	.0006	13.10	.0000
#3	-.0009	20.76	.0139	.0004	.2880	.0011	.0024	13.47	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0165	.0270	.0259	28.57	1.688	.0164	4.715	1.485	.0015
Stddev	.0003	.0007	.0007	.39	.040	.0009	.048	.014	.0002
%RSD	2.005	2.432	2.634	1.360	2.349	5.476	1.012	.9708	13.75
#1	.0163	.0267	.0251	28.16	1.690	.0155	4.661	1.469	.0017
#2	.0164	.0264	.0262	28.61	1.648	.0166	4.730	1.488	.0015
#3	.0169	.0277	.0264	28.94	1.727	.0172	4.752	1.497	.0013
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1028	.0343	.5361	.0450	.1431	<.0000	<.0000	.3410	.0003
Stddev	.0123	.0007	.0128	.0014	.0013	.0003	.0021	.0058	.0007
%RSD	11.96	2.143	2.386	3.074	.9134	17.86	178.8	1.688	196.9
#1	.0997	.0337	.5231	.0436	.1423	-.0015	-.0032	.3349	-.0004
#2	.1163	.0343	.5365	.0463	.1446	-.0018	.0009	.3464	.0005
#3	.0923	.0351	.5487	.0452	.1423	-.0022	-.0012	.3417	.0009
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9682-A-23-C Acquired: 12/10/2014 11:07:06 Type: Unk
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=5

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0326	.0209	.2012	.0004	<.0000	.0523	.0998
Stddev	.0004	.0032	.0014	.0003	.0197	.0035	.0026
%RSD	1.151	15.12	.6942	93.12	45.19	6.614	2.581
#1	.0322	.0215	.1997	.0001	-.0227	.0560	.0973
#2	.0326	.0175	.2013	.0002	-.0619	.0492	.0998
#3	.0329	.0238	.2025	.0007	-.0465	.0516	.1024
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4432.0
Stddev	48.7
%RSD	1.0989
#1	4479.4
#2	4434.5
#3	4382.1

Sample Name: 160-9682-A-27-C Acquired: 12/10/2014 11:10:55 Type: Unk
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=5

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	18.40	.0124	.0016	.2723	.0010	.0025	19.03	<.0000
Stddev	.0009	.15	.0011	.0033	.0023	.0000	.0010	.21	.0001
%RSD	1235.	.8045	8.928	207.7	.8395	2.369	41.33	1.089	102.0
#1	-.0003	18.34	.0112	.0001	.2710	.0010	.0015	18.80	-.0001
#2	-.0009	18.29	.0124	.0053	.2709	.0009	.0036	19.09	-.0002
#3	.0009	18.57	.0134	-.0007	.2749	.0010	.0024	19.20	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0136	.0261	.0232	24.06	1.534	.0159	5.020	1.043	.0014
Stddev	.0004	.0008	.0016	.20	.034	.0010	.041	.008	.0001
%RSD	2.830	2.920	6.926	.8426	2.189	6.548	.8106	.7427	5.529
#1	.0134	.0260	.0233	23.89	1.502	.0148	4.978	1.039	.0014
#2	.0135	.0269	.0215	24.02	1.530	.0158	5.025	1.038	.0014
#3	.0141	.0254	.0247	24.28	1.569	.0169	5.059	1.052	.0013
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1025	.0262	.4512	.0476	.1637	.0008	<.0000	.4039	<.0000
Stddev	.0099	.0004	.0065	.0008	.0012	.0006	.0014	.0096	.0002
%RSD	9.632	1.647	1.445	1.694	.7038	71.62	91.49	2.377	280.4
#1	.1138	.0259	.4442	.0467	.1649	.0013	.0000	.3995	-.0002
#2	.0970	.0262	.4520	.0479	.1627	.0009	-.0027	.3972	.0001
#3	.0965	.0267	.4572	.0483	.1634	.0002	-.0017	.4149	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9682-A-27-C Acquired: 12/10/2014 11:10:55 Type: Unk
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=5

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0294	.0167	.2309	<.0000	<.0000	.0402	.0899
Stddev	.0003	.0004	.0014	.0009	.0139	.0010	.0013
%RSD	1.066	2.464	.6027	746.8	27.86	2.375	1.492
#1	.0293	.0171	.2299	.0004	-.0339	.0397	.0884
#2	.0292	.0163	.2303	-.0012	-.0572	.0397	.0906
#3	.0298	.0166	.2325	.0004	-.0587	.0413	.0908
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4288.0
Stddev	17.0
%RSD	.39657
#1	4306.8
#2	4283.4
#3	4273.7

Sample Name: CCV Acquired: 12/10/2014 11:14:48 Type: QC
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.021**	**49.29**	**5.223**	**4.971**	**5.083**	**5.134**	**5.292**	**53.87**	**5.286**
Stddev	.024	.79	.210	.079	.025	.143	.219	2.22	.208
%RSD	2.385	1.598	4.012	1.579	.4899	2.787	4.132	4.129	3.937
#1	1.049	49.65	5.463	5.032	5.083	5.274	5.541	56.39	5.523
#2	1.013	49.85	5.131	4.998	5.108	5.141	5.205	53.03	5.201
#3	1.002	48.39	5.076	4.882	5.059	4.988	5.130	52.19	5.134
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.338**	**5.183**	**5.295**	**50.24**	**49.85**	**5.041**	**49.15**	**4.954**	**1.072**
Stddev	.210	.133	.208	.80	.68	.079	.78	.076	.045
%RSD	3.926	2.560	3.927	1.587	1.359	1.575	1.579	1.544	4.242
#1	5.578	5.334	5.533	50.88	50.20	5.073	49.70	5.000	1.124
#2	5.251	5.133	5.204	50.49	50.29	5.100	49.49	4.996	1.055
#3	5.187	5.083	5.149	49.35	49.07	4.951	48.27	4.865	1.038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**50.61**	**5.335**	**53.50**	**5.315**	**52.46**	**1.050**	**1.042**	**4.898**	**5.300**
Stddev	.76	.210	2.12	.206	2.29	.040	.043	.081	.205
%RSD	1.506	3.937	3.968	3.884	4.359	3.837	4.154	1.662	3.860
#1	51.06	5.575	55.92	5.552	55.03	1.096	1.092	4.948	5.535
#2	51.04	5.244	52.62	5.217	51.69	1.032	1.022	4.942	5.207
#3	49.73	5.186	51.96	5.175	50.65	1.022	1.013	4.804	5.159
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: CCV Acquired: 12/10/2014 11:14:48 Type: QC
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.157**	**5.207**	**4.967**	**1.076**	**5.178**	**4.978**	**5.298**
Stddev	.036	.148	.080	.042	.135	.080	.211
%RSD	.7024	2.843	1.610	3.887	2.602	1.598	3.978
#1	5.172	5.376	5.007	1.124	5.331	5.024	5.539
#2	5.184	5.141	5.019	1.057	5.127	5.023	5.208
#3	5.116	5.103	4.875	1.046	5.077	4.886	5.148
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**4018.5**
Stddev	115.5
%RSD	2.8753
#1	3885.4
#2	4076.3
#3	4093.6

Sample Name: CCB Acquired: 12/10/2014 11:18:35 Type: QC
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**.0008**	**.0033**	**.0111**	**.0004**	**.0002**	**<.0000**	**.0042**	**.0002**
Stddev	.0005	.0004	.0003	.0042	.0002	.0000	.0004	.0004	.0001
%RSD	583.3	50.24	7.916	38.27	49.88	7.953	84.83	9.774	50.27
#1	.0004	.0010	.0032	.0082	.0002	.0002	-.0009	.0039	.0002
#2	-.0005	.0012	.0035	.0160	.0006	.0003	-.0003	.0047	.0002
#3	.0004	.0004	.0030	.0091	.0003	.0002	-.0002	.0040	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0004**	**.0005**	**<.0000**	**.0045**	**<.0000**	**.0016**	**<.0000**	**.0003**	**.0000**
Stddev	.0003	.0008	.0011	.0008	.0239	.0005	.0059	.0003	.0002
%RSD	64.97	167.9	157.5	16.89	46.81	30.71	81.22	98.23	1038.
#1	.0007	-.0004	-.0008	.0054	-.0786	.0021	-.0083	.0002	-.0001
#2	.0004	.0007	-.0018	.0039	-.0361	.0013	-.0125	.0001	.0002
#3	.0001	.0011	.0005	.0042	-.0385	.0013	-.0009	.0007	-.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**<.0000**	**.0003**	**.0029**	**.0003**	**.0068**	**.0005**	**.0007**	**<.0000**	**<.0000**
Stddev	.0111	.0001	.0005	.0009	.0007	.0017	.0011	.0042	.0006
%RSD	352.8	21.30	18.63	252.5	10.15	309.3	149.7	69.73	1230.
#1	-.0145	.0004	.0029	-.0006	.0064	.0000	.0016	-.0044	-.0003
#2	.0077	.0003	.0023	.0006	.0076	.0024	-.0005	-.0107	-.0005
#3	-.0026	.0003	.0034	.0011	.0065	-.0008	.0010	-.0028	.0006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Sample Name: CCB Acquired: 12/10/2014 11:18:35 Type: QC
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	<.0000	<.0000	.0024	.0054	.0040	.0004
Stddev	.0001	.0029	.0003	.0002	.0100	.0023	.0001
%RSD	26.50	146.2	41.64	6.476	185.2	56.35	31.41
#1	.0004	-.0023	-.0010	.0025	.0100	.0055	.0003
#2	.0002	-.0046	-.0004	.0023	-.0061	.0014	.0005
#3	.0004	.0011	-.0010	.0026	.0123	.0051	.0004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_3710
Units	Cts/S
Avg	3994.4
Stddev	45.9
%RSD	1.1483
#1	4039.0
#2	3996.9
#3	3947.4

Sample Name: TEST 9182 Acquired: 12/10/2014 11:24:56 Type: Unk
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6060	.0599	1.246	3.505	2.892	.8168	<.0000	.0605	2.039
Stddev	.0040	.0051	.030	.057	.041	.0129	.0017	.0016	.044
%RSD	.6663	8.507	2.392	1.614	1.418	1.580	65.19	2.654	2.145
#1	.6024	.0579	1.275	3.559	2.932	.8302	-.0043	.0621	2.082
#2	.6104	.0657	1.248	3.508	2.894	.8158	-.0026	.0604	2.040
#3	.6054	.0561	1.216	3.446	2.850	.8045	-.0009	.0589	1.995
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.278	1.652	1.998	.0012	.0347	.0034	<.0000	.0031	<.0000
Stddev	.026	.010	.044	.0010	.0289	.0008	.0041	.0000	.0001
%RSD	2.054	.6063	2.208	87.53	83.21	23.00	76.92	1.095	160.8
#1	1.303	1.647	2.045	.0015	.0238	.0041	-.0032	.0031	-.0001
#2	1.280	1.664	1.994	.0020	.0129	.0036	-.0100	.0032	.0000
#3	1.251	1.646	1.957	.0000	.0675	.0026	-.0027	.0032	-.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	541.6	2.020	.0107	2.040	.0136	1.928	2.142	.5650	.0004
Stddev	14.4	.042	.0002	.043	.0009	.045	.048	.0069	.0002
%RSD	2.667	2.086	2.118	2.106	6.342	2.340	2.233	1.221	52.94
#1	543.7	2.061	.0104	2.082	.0144	1.972	2.190	.5725	.0005
#2	554.8	2.022	.0109	2.041	.0136	1.930	2.143	.5588	.0002
#3	526.2	1.977	.0108	1.996	.0127	1.881	2.094	.5639	.0005
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: TEST 9182 Acquired: 12/10/2014 11:24:56 Type: Unk
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0007	.0031	<.0000	1.129	<.0000	.0011	.8389
Stddev	.0000	.0021	.0010	.022	.0209	.0039	.0183
%RSD	4.495	69.62	1163.	1.930	107.2	361.5	2.176
#1	.0007	.0028	-.0008	1.149	-.0212	-.0030	.8568
#2	.0008	.0011	-.0005	1.132	-.0394	.0049	.8396
#3	.0007	.0053	.0011	1.106	.0022	.0013	.8203
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4006.4
Stddev	35.9
%RSD	.89717
#1	3982.9
#2	3988.6
#3	4047.8

Sample Name: LB 160-159198/1-D Acquired: 12/10/2014 11:28:40 Type: Unk
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	<.0000	.0033	.0065	.0004	.0000	<.0000	.0257	<.0000
Stddev	.0003	.0176	.0012	.0035	.0000	.0000	.0013	.0004	.0000
%RSD	272.8	588.2	36.95	54.51	12.24	149.2	106.7	1.642	134.1
#1	.0004	.0171	.0035	.0043	.0003	.0000	-.0001	.0254	-.0001
#2	.0000	-.0155	.0020	.0045	.0004	.0000	-.0027	.0262	.0000
#3	-.0001	-.0105	.0045	.0105	.0004	.0000	-.0010	.0255	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0005	<.0000	.0026	.0329	.0016	<.0000	.0000	<.0000
Stddev	.0004	.0005	.0004	.0010	.0136	.0023	.0039	.0003	.0001
%RSD	1279.	110.3	46.95	36.61	41.27	142.6	123.6	1144.	68.33
#1	-.0004	.0006	-.0011	.0037	.0173	.0023	-.0041	.0002	-.0001
#2	.0001	.0009	-.0004	.0017	.0392	.0036	-.0065	.0003	-.0002
#3	.0004	-.0001	-.0010	.0025	.0423	-.0010	.0011	-.0003	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	573.8	.0003	.0021	<.0000	.0145	<.0000	.0003	.0014	.0002
Stddev	13.7	.0002	.0015	.0013	.0020	.0015	.0023	.0047	.0003
%RSD	2.379	66.69	72.75	438.0	14.12	200.3	659.5	323.4	178.4
#1	558.2	.0001	.0024	.0010	.0122	-.0012	-.0009	-.0006	.0004
#2	583.1	.0005	.0004	-.0016	.0161	-.0019	.0030	.0068	-.0001
#3	580.3	.0004	.0035	-.0003	.0152	.0009	-.0010	-.0018	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LB 160-159198/1-D Acquired: 12/10/2014 11:28:40 Type: Unk
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	.0011	<.0000	.0013	<.0000	.0008	.0065
Stddev	.0001	.0017	.0006	.0005	.0135	.0012	.0001
%RSD	29.54	165.1	183.0	41.49	53.65	163.7	1.092
#1	.0002	-.0009	-.0009	.0009	-.0390	.0005	.0065
#2	.0002	.0017	.0002	.0011	-.0121	.0021	.0066
#3	.0003	.0024	-.0002	.0019	-.0244	-.0003	.0065
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3876.3
Stddev	43.3
%RSD	1.1170
#1	3926.3
#2	3851.5
#3	3851.2

Sample Name: LCS 160-161024/2-A Acquired: 12/10/2014 11:32:44 Type: Unk
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2049**	**9.868**	**1.035**	**1.975**	**1.016**	**1.027**	**.9755**	**10.69**	**1.012**
Stddev	.0027	.061	.006	.015	.004	.004	.0080	.06	.005
%RSD	1.304	.6215	.5905	.7721	.4274	.4286	.8219	.5404	.5318
#1	.2073	9.917	1.038	1.984	1.018	1.028	.9773	10.70	1.013
#2	.2054	9.887	1.040	1.983	1.018	1.030	.9825	10.75	1.017
#3	.2020	9.799	1.028	1.957	1.011	1.022	.9668	10.63	1.007
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.058**	**1.031**	**1.033**	**10.01**	**10.14**	**.9960**	**9.733**	**.9967**	**.5128**
Stddev	.005	.013	.006	.06	.09	.0066	.062	.0047	.0025
%RSD	.4519	1.225	.6166	.5804	.8517	.6590	.6365	.4708	.4904
#1	1.058	1.039	1.037	10.04	10.16	1.002	9.749	1.001	.5134
#2	1.063	1.037	1.037	10.03	10.21	.9962	9.786	.9979	.5149
#3	1.054	1.016	1.026	9.938	10.04	.9893	9.665	.9915	.5100
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**562.7**	**1.035**	**1.092**	**1.038**	**10.19**	**.4997**	**.5278**	**.0135**	**1.023**
Stddev	6.1	.005	.001	.007	.04	.0045	.0045	.0044	.006
%RSD	1.090	.4864	.1214	.6860	.4161	.9064	.8457	32.69	.5835
#1	562.2	1.036	1.092	1.039	10.18	.5013	.5307	.0132	1.023
#2	569.1	1.040	1.093	1.045	10.24	.5032	.5300	.0093	1.029
#3	556.9	1.030	1.090	1.031	10.15	.4946	.5227	.0181	1.017
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LCS 160-161024/2-A Acquired: 12/10/2014 11:32:44 Type: Unk
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.032**	**1.016**	**1.008**	**.2041**	**.9386**	**1.002**	**1.045**
Stddev	.004	.015	.004	.0007	.0300	.006	.006
%RSD	.4217	1.514	.3565	.3348	3.191	.6360	.5369
#1	1.034	1.033	1.011	.2047	.9398	1.007	1.045
#2	1.036	1.012	1.009	.2043	.9679	1.005	1.050
#3	1.028	1.002	1.004	.2034	.9080	.9952	1.039
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**3740.5**
Stddev	18.5
%RSD	.49580
#1	3727.0
#2	3732.9
#3	3761.7

Sample Name: 160-9182-A-12-H Acquired: 12/10/2014 11:36:19 Type: Unk
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=2

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.3237**	**.0278**	**.6715**	**1.808**	**1.532**	**.4298**	**.0014**	**.0416**	**1.113**
Stddev	.0087	.0128	.0137	.004	.004	.0015	.0026	.0008	.019
%RSD	2.687	45.96	2.045	.2328	.2695	.3597	192.6	1.882	1.724
#1	.3338	.0159	.6784	1.812	1.535	.4313	-.0016	.0425	1.127
#2	.3188	.0263	.6557	1.804	1.534	.4299	.0034	.0410	1.091
#3	.3186	.0413	.6804	1.807	1.528	.4282	.0023	.0414	1.122
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.7131**	**.9196**	**1.109**	**.0015**	**.0459**	**.0006**	**.0002**	**.0016**	**.0001**
Stddev	.0124	.0200	.016	.0024	.0289	.0009	.0043	.0000	.0002
%RSD	1.734	2.171	1.394	160.8	62.80	148.0	2441.	1.399	262.6
#1	.7208	.9427	1.119	.0010	.0790	.0013	-.0048	.0016	-.0001
#2	.6988	.9090	1.091	-.0006	.0333	-.0004	.0019	.0016	.0000
#3	.7196	.9073	1.116	.0041	.0255	.0008	.0034	.0016	.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**287.6**	**1.131**	**.0060**	**1.146**	**.0081**	**1.050**	**1.127**	**.2945**	**<.0000**
Stddev	2.5	.019	.0006	.021	.0021	.020	.018	.0042	.0005
%RSD	.8835	1.698	9.380	1.789	25.84	1.861	1.618	1.431	654.3
#1	285.3	1.145	.0054	1.161	.0081	1.064	1.142	.2990	.0002
#2	290.3	1.109	.0062	1.122	.0060	1.028	1.107	.2907	.0002
#3	287.0	1.140	.0065	1.155	.0102	1.060	1.133	.2938	-.0006
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9182-A-12-H Acquired: 12/10/2014 11:36:19 Type: Unk
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=2

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	.0034	.0006	.6349	.0042	.0029	.4600
Stddev	.0000	.0013	.0005	.0110	.0142	.0009	.0079
%RSD	5.000	38.46	94.13	1.733	341.8	31.22	1.711
#1	.0004	.0023	.0001	.6439	.0205	.0019	.4660
#2	.0004	.0048	.0004	.6227	-.0029	.0036	.4511
#3	.0004	.0031	.0012	.6383	-.0052	.0032	.4630
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3723.5
Stddev	70.2
%RSD	1.8855
#1	3647.1
#2	3785.3
#3	3738.0

Sample Name: 160-9182-A-12-H SD Acquired: 12/10/2014 11:40:05 Type: Unk
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0725	.0028	.1483	.4017	.3359	.0944	<.0000	.0131	.2498
Stddev	.0009	.0107	.0026	.0050	.0020	.0006	.0033	.0006	.0009
%RSD	1.199	374.9	1.740	1.247	.5808	.6595	284.1	4.825	.3612
#1	.0716	.0151	.1454	.4040	.3343	.0939	.0008	.0124	.2489
#2	.0725	-.0022	.1493	.3960	.3352	.0942	.0007	.0135	.2499
#3	.0734	-.0044	.1502	.4052	.3380	.0951	-.0050	.0134	.2506
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1611	.2094	.2511	.0003	<.0000	.0024	<.0000	.0002	<.0000
Stddev	.0004	.0009	.0008	.0008	.0458	.0012	.0090	.0002	.0003
%RSD	.2758	.4394	.3029	279.2	145.9	50.31	192.1	74.11	211.0
#1	.1608	.2097	.2502	.0011	.0210	.0031	-.0047	.0000	-.0002
#2	.1610	.2102	.2515	.0004	-.0513	.0010	-.0137	.0003	-.0004
#3	.1616	.2084	.2516	-.0006	-.0639	.0031	.0043	.0004	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	64.27	.2575	.0019	.2607	.0076	.2346	.2482	.0646	<.0000
Stddev	.35	.0009	.0003	.0006	.0022	.0012	.0048	.0068	.0006
%RSD	.5522	.3399	18.21	.2244	29.33	.4974	1.934	10.57	239.1
#1	63.99	.2567	.0015	.2601	.0102	.2353	.2496	.0623	-.0003
#2	64.16	.2574	.0021	.2608	.0060	.2332	.2522	.0722	.0004
#3	64.67	.2585	.0020	.2613	.0066	.2352	.2429	.0592	-.0008
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9182-A-12-H SD Acquired: 12/10/2014 11:40:05 Type: Unk
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0007	<.0000	.1472	<.0000	.0008	.1080
Stddev	.0000	.0020	.0006	.0008	.0163	.0031	.0004
%RSD	49.11	278.5	730.9	.5355	515.6	402.8	.3807
#1	.0000	-.0009	-.0001	.1477	-.0036	-.0024	.1078
#2	.0001	.0030	.0005	.1463	.0133	.0010	.1078
#3	.0001	.0001	-.0007	.1477	-.0192	.0037	.1085
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3632.8
Stddev	11.8
%RSD	.32541
#1	3646.4
#2	3626.9
#3	3625.1

Sample Name: 160-9182-A-12-H DU Acquired: 12/10/2014 11:43:50 Type: Unk
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=2

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5137	.3516	.6815	1.763	1.487	.4355	1.026	.3580	1.094
Stddev	.0015	.0080	.0029	.008	.009	.0017	.003	.0013	.002
%RSD	.2947	2.262	.4216	.4766	.5702	.3889	.2504	.3557	.1566
#1	.5125	.3573	.6815	1.768	1.495	.4372	1.024	.3570	1.094
#2	.5131	.3425	.6786	1.767	1.488	.4356	1.025	.3576	1.092
#3	.5154	.3550	.6843	1.753	1.479	.4338	1.029	.3594	1.096
Check ?	None	None	None	None	None	None	None	None	None
Value Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7130	.9181	1.110	.2875	.3063	.0298	.2475	.0302	.5228
Stddev	.0011	.0015	.003	.0015	.0072	.0013	.0098	.0002	.0008
%RSD	.1581	.1625	.2779	.5232	2.346	4.446	3.970	.7898	.1525
#1	.7124	.9166	1.113	.2886	.3046	.0313	.2416	.0304	.5219
#2	.7123	.9182	1.111	.2880	.3001	.0292	.2421	.0303	.5233
#3	.7143	.9196	1.107	.2858	.3142	.0289	.2589	.0299	.5233
Check ?	None	None	None	None	None	None	None	None	None
Value Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	273.9	1.119	.0393	1.140	10.17	1.524	1.115	.3027	1.065
Stddev	.8	.004	.0009	.002	.03	.007	.002	.0060	.004
%RSD	.2883	.3896	2.211	.1790	.3073	.4350	.1627	1.975	.3665
#1	274.8	1.115	.0388	1.142	10.15	1.528	1.113	.3095	1.062
#2	273.9	1.119	.0403	1.138	10.15	1.517	1.116	.3004	1.064
#3	273.2	1.123	.0387	1.141	10.20	1.528	1.117	.2983	1.069
Check ?	None	None	None	None	None	None	None	None	None
Value Range									

Sample Name: 160-9182-A-12-H DU Acquired: 12/10/2014 11:43:50 Type: Unk
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=2

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0298	.0377	.9851	.6167	.0486	.0337	.4698
Stddev	.0001	.0015	.0038	.0015	.0223	.0023	.0012
%RSD	.3360	3.888	.3879	.2497	45.88	6.952	.2658
#1	.0298	.0370	.9893	.6173	.0603	.0339	.4695
#2	.0299	.0367	.9840	.6149	.0627	.0313	.4687
#3	.0297	.0394	.9819	.6177	.0229	.0360	.4712
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3698.6
Stddev	23.8
%RSD	.64393
#1	3673.6
#2	3701.3
#3	3721.0

Sample Name: CCV Acquired: 12/10/2014 11:47:31 Type: QC
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.026**	**50.93**	**5.278**	**4.956**	**5.233**	**5.248**	**5.289**	**53.82**	**5.284**
Stddev	.010	.19	.040	.019	.062	.083	.042	.44	.039
%RSD	.9478	.3693	.7662	.3789	1.192	1.584	.7967	.8189	.7324
#1	1.015	50.72	5.247	4.935	5.258	5.286	5.253	53.49	5.252
#2	1.031	50.99	5.323	4.962	5.279	5.305	5.335	54.32	5.327
#3	1.032	51.08	5.263	4.971	5.162	5.153	5.279	53.65	5.274
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.342**	**5.366**	**5.280**	**49.79**	**52.22**	**5.170**	**50.72**	**5.080**	**1.060**
Stddev	.038	.042	.043	.09	.21	.019	.29	.029	.007
%RSD	.7186	.7734	.8086	.1806	.4083	.3691	.5781	.5722	.7074
#1	5.311	5.318	5.237	49.74	51.97	5.152	50.39	5.047	1.053
#2	5.385	5.392	5.323	49.73	52.34	5.167	50.95	5.102	1.068
#3	5.331	5.388	5.279	49.89	52.35	5.190	50.82	5.090	1.058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**51.50**	**5.374**	**53.71**	**5.391**	**52.09**	**1.049**	**1.055**	**4.964**	**5.377**
Stddev	.10	.040	.41	.035	.41	.008	.010	.015	.042
%RSD	.2019	.7408	.7708	.6432	.7953	.7447	.9682	.2991	.7877
#1	51.50	5.342	53.38	5.362	51.78	1.040	1.046	4.946	5.349
#2	51.40	5.419	54.18	5.429	52.56	1.054	1.066	4.972	5.426
#3	51.61	5.361	53.57	5.383	51.93	1.053	1.053	4.972	5.356
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: CCV Acquired: 12/10/2014 11:47:31 Type: QC
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.217**	**5.236**	**5.125**	**1.081**	**5.207**	**5.070**	**5.300**
Stddev	.068	.084	.020	.008	.067	.026	.042
%RSD	1.296	1.605	.3963	.7375	1.279	.5085	.7932
#1	5.234	5.143	5.102	1.075	5.130	5.041	5.266
#2	5.274	5.306	5.136	1.090	5.241	5.090	5.347
#3	5.142	5.260	5.138	1.077	5.249	5.080	5.287
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**3975.7**
Stddev	24.7
%RSD	.62078
#1	3996.0
#2	3948.2
#3	3982.8

Sample Name: CCB Acquired: 12/10/2014 11:51:20 Type: QC
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**.0004**	**.0020**	**.0157**	**.0005**	**.0003**	**<.0000**	**.0045**	**.0003**
Stddev	.0005	.0065	.0011	.0007	.0001	.0000	.0028	.0004	.0000
%RSD	743.7	1780.	52.06	4.447	17.37	4.929	2569.	7.876	11.25
#1	-.0005	-.0057	.0009	.0156	.0004	.0003	.0030	.0042	.0003
#2	.0001	.0073	.0030	.0151	.0005	.0003	-.0009	.0045	.0003
#3	.0006	-.0005	.0021	.0164	.0004	.0003	-.0025	.0049	.0003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0004**	**.0002**	**<.0000**	**.0036**	**<.0000**	**.0029**	**<.0000**	**.0002**	**<.0000**
Stddev	.0001	.0010	.0014	.0024	.0245	.0004	.0077	.0001	.0001
%RSD	35.45	384.3	52.17	65.19	47.27	12.54	1770.	65.63	113.3
#1	.0004	-.0008	-.0037	.0058	-.0693	.0032	-.0062	.0001	-.0001
#2	.0003	.0006	-.0032	.0011	-.0621	.0031	-.0035	.0003	.0000
#3	.0005	.0010	-.0011	.0041	-.0238	.0025	.0084	.0003	-.0003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0143**	**.0004**	**.0024**	**.0008**	**.0091**	**<.0000**	**<.0000**	**.0009**	**.0002**
Stddev	.0065	.0001	.0013	.0007	.0012	.0021	.0012	.0101	.0005
%RSD	45.29	35.58	51.36	86.47	12.93	1991.	4209.	1088.	294.9
#1	.0217	.0005	.0013	.0017	.0096	.0023	.0007	-.0048	-.0004
#2	.0098	.0004	.0022	.0006	.0099	-.0010	-.0014	-.0050	.0007
#3	.0114	.0003	.0038	.0003	.0077	-.0016	.0006	.0125	.0003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Sample Name: CCB Acquired: 12/10/2014 11:51:20 Type: QC
Method: 2014v4(v15) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	<.0000	<.0000	.0027	.0075	.0006	.0004
Stddev	.0000	.0017	.0004	.0008	.0062	.0009	.0001
%RSD	11.93	172.6	74.31	31.78	82.94	156.3	26.80
#1	.0003	.0009	-.0010	.0029	.0012	.0006	.0005
#2	.0003	-.0016	-.0006	.0017	.0135	.0014	.0003
#3	.0003	-.0024	-.0001	.0034	.0077	-.0004	.0005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_3710
Units	Cts/S
Avg	3995.3
Stddev	13.3
%RSD	.33239
#1	4003.3
#2	3980.0
#3	4002.8

HAA111914A

Method: Hg LLC Operator: Admin Date of Analysis: 19 Nov 2014 13:28:40

Seq ID	Type	Sample ID	Extended ID	Date	Stats Data	Mean	Units	Stnd Conc	Method	Chapter
11921	Std	CALIBRATION BLANK		19 Nov 2014 14:03:07	329, 330, 330,	330	PPB	0.0000	Hg LLC	HAA111914A
11922	Std	CALIBRATION 1		19 Nov 2014 14:05:23	2889, 2911, 2930,	2910	PPB	0.2000	Hg LLC	HAA111914A
11923	Std	CALIBRATION 2		19 Nov 2014 14:07:36	6822, 6880, 6924,	6875	PPB	0.5000	Hg LLC	HAA111914A
11924	Std	CALIBRATION 3		19 Nov 2014 14:09:51	13499, 13607, 13679,	13595	PPB	1.0000	Hg LLC	HAA111914A
11925	Std	CALIBRATION 4		19 Nov 2014 14:12:06	70581, 71156, 71589,	71109	PPB	5.0000	Hg LLC	HAA111914A
11926	Std	CALIBRATION 5		19 Nov 2014 14:14:31	140900, 142012, 142839,	141917	PPB	10.0000	Hg LLC	HAA111914A
11927	CK STND	ICV		19 Nov 2014 14:17:22	5.0406, 5.0784, 5.1051,	5.0747	PPB		Hg LLC	HAA111914A
11928	CK STND	ICB		19 Nov 2014 14:20:19	-0.0140, -0.0138, -0.0138,	-0.0138	PPB		Hg LLC	HAA111914A
11929	SMPL	LB 160-157043/1-B		19 Nov 2014 14:23:05	0.0156, 0.0157, 0.0159,	0.0158	PPB		Hg LLC	HAA111914A
11930	SMPL	LCS 160-158123/2-A		19 Nov 2014 14:25:16	5.2089, 5.2506, 5.2802,	5.2466	PPB		Hg LLC	HAA111914A
11931	SMPL	160-9382-A-1-B		19 Nov 2014 14:27:28	-0.0602, -0.0602, -0.0607,	-0.0604	PPB		Hg LLC	HAA111914A
11932	SMPL	160-9382-A-1-B SD	5x	19 Nov 2014 14:30:22	0.0159, 0.0159, 0.0159,	0.0159	PPB		Hg LLC	HAA111914A
11933	SMPL	160-9382-A-1-C MS		19 Nov 2014 14:32:34	3.7111, 3.7422, 3.7646,	3.7393	PPB		Hg LLC	HAA111914A
11934	SMPL	160-9382-A-1-D MSD		19 Nov 2014 14:34:46	3.8561, 3.8875, 3.9115,	3.8850	PPB		Hg LLC	HAA111914A
11935	SMPL	160-9382-A-2-B		19 Nov 2014 14:37:27	-0.0244, -0.0240, -0.0238,	-0.0241	PPB		Hg LLC	HAA111914A
11936	SMPL	160-9382-A-3-B		19 Nov 2014 14:40:13	0.0408, 0.0411, 0.0411,	0.0410	PPB		Hg LLC	HAA111914A
11937	SMPL	LB 160-157042/1-C		19 Nov 2014 14:42:25	0.0138, 0.0139, 0.0140,	0.0139	PPB		Hg LLC	HAA111914A
11938	SMPL	LCS 160-158125/2-A		19 Nov 2014 14:44:38	5.0584, 5.1030, 5.1355,	5.0990	PPB		Hg LLC	HAA111914A
11939	CK STND	CCV		19 Nov 2014 14:46:51	5.0259, 5.0688, 5.1006,	5.0651	PPB		Hg LLC	HAA111914A
11940	CK STND	CCB		19 Nov 2014 14:49:38	-0.0236, -0.0237, -0.0238,	-0.0237	PPB		Hg LLC	HAA111914A
11941	SMPL	160-9213-A-5-E		19 Nov 2014 14:52:27	0.0401, 0.0403, 0.0404,	0.0403	PPB		Hg LLC	HAA111914A
11942	SMPL	160-9213-A-5-E SD	5x	19 Nov 2014 14:54:40	-0.0079, -0.0080, -0.0084,	-0.0081	PPB		Hg LLC	HAA111914A
11943	SMPL	160-9213-A-5-F MS		19 Nov 2014 14:56:53	4.7509, 4.7934, 4.8235,	4.7893	PPB		Hg LLC	HAA111914A
11944	SMPL	160-9213-A-5-G MSD		19 Nov 2014 14:59:05	4.7980, 4.8359, 4.8627,	4.8322	PPB		Hg LLC	HAA111914A
11945	SMPL	LB 160-157040/1-D		19 Nov 2014 15:01:50	-0.0117, -0.0114, -0.0119,	-0.0117	PPB		Hg LLC	HAA111914A
11946	SMPL	LCS 160-158126/2-A		19 Nov 2014 15:04:34	5.1919, 5.2357, 5.2679,	5.2318	PPB		Hg LLC	HAA111914A
11947	SMPL	160-9227-B-6-H		19 Nov 2014 15:06:45	-0.0331, -0.0333, -0.0337,	-0.0334	PPB		Hg LLC	HAA111914A
11948	SMPL	160-9227-B-6-H SD	5x	19 Nov 2014 15:09:34	0.0127, 0.0129, 0.0129,	0.0128	PPB		Hg LLC	HAA111914A
11949	SMPL	160-9227-B-6-I MS		19 Nov 2014 15:11:46	4.1833, 4.2203, 4.2469,	4.2168	PPB		Hg LLC	HAA111914A
11950	SMPL	160-9227-B-6-J MSD		19 Nov 2014 15:13:58	3.9714, 4.0082, 4.0353,	4.0050	PPB		Hg LLC	HAA111914A
11951	CK STND	CCV		19 Nov 2014 15:16:43	5.0022, 5.0472, 5.0794,	5.0429	PPB		Hg LLC	HAA111914A
11952	CK STND	CCB		19 Nov 2014 15:19:29	-0.0342, -0.0340, -0.0341,	-0.0341	PPB		Hg LLC	HAA111914A
11953	SMPL	LB 160-157719/1-B		19 Nov 2014 15:22:21	0.0519, 0.0519, 0.0523,	0.0520	PPB		Hg LLC	HAA111914A
11954	SMPL	LCS 160-158127/2-A		19 Nov 2014 15:24:34	5.3136, 5.3629, 5.3998,	5.3588	PPB		Hg LLC	HAA111914A
11955	SMPL	160-9438-G-1-B		19 Nov 2014 15:26:46	0.1159, 0.1172, 0.1185,	0.1172	PPB		Hg LLC	HAA111914A
11956	SMPL	160-9438-G-1-B SD	5x	19 Nov 2014 15:29:34	0.0275, 0.0280, 0.0284,	0.0280	PPB		Hg LLC	HAA111914A
11957	SMPL	160-9438-G-1-D MSD		19 Nov 2014 15:33:59	4.0856, 4.1329, 4.1673,	4.1286	PPB		Hg LLC	HAA111914A
11958	SMPL	160-9438-G-2-B		19 Nov 2014 15:36:11	-0.0279, -0.0265, -0.0267,	-0.0270	PPB		Hg LLC	HAA111914A
11959	SMPL	MB 160-158128/1-A		19 Nov 2014 15:39:01	0.0245, 0.0246, 0.0245,	0.0245	PPB		Hg LLC	HAA111914A
11960	SMPL	LCS 160-158128/2-A		19 Nov 2014 15:41:13	4.8013, 4.8468, 4.8804,	4.8428	PPB		Hg LLC	HAA111914A
11961	SMPL	160-9189-H-3-A		19 Nov 2014 15:43:25	-0.0426, -0.0426, -0.0427,	-0.0427	PPB		Hg LLC	HAA111914A
11962	CK STND	CCV		19 Nov 2014 15:46:17	4.6169, 4.6646, 4.6996,	4.6604	PPB		Hg LLC	HAA111914A
11963	CK STND	CCB		19 Nov 2014 15:48:29	-0.0307, -0.0309, -0.0310,	-0.0308	PPB		Hg LLC	HAA111914A
11964	SMPL	160-9189-H-3-A SD	5x	19 Nov 2014 15:51:22	0.0247, 0.0251, 0.0252,	0.0250	PPB		Hg LLC	HAA111914A
11965	SMPL	160-9189-H-3-B MS		19 Nov 2014 15:53:34	4.5298, 4.5805, 4.6176,	4.5760	PPB		Hg LLC	HAA111914A
11966	SMPL	160-9189-H-3-C MSD		19 Nov 2014 15:55:46	4.1330, 4.1819, 4.2180,	4.1776	PPB		Hg LLC	HAA111914A
11967	SMPL	160-9438-F-1-A		19 Nov 2014 15:58:39	-0.0181, -0.0180, -0.0177,	-0.0180	PPB		Hg LLC	HAA111914A
11968	SMPL	160-9438-F-2-A		19 Nov 2014 16:01:21	0.0326, 0.0329, 0.0331,	0.0329	PPB		Hg LLC	HAA111914A
11969	SMPL	~~160-8022-G-1-I~~		19 Nov 2014 16:03:36	0.0198, 0.0204, 0.0206,	0.0203	PPB		Hg LLC	HAA111914A
11970	SMPL	~~160-8022-B-1-H~~		19 Nov 2014 16:05:49	0.0093, 0.0096, 0.0100,	0.0096	PPB		Hg LLC	HAA111914A
11971	CK STND	CCV		19 Nov 2014 16:10:13	4.2183, 4.2697, 4.3062,	4.2648	PPB		Hg LLC	HAA111914A
11972	CK STND	CCB		19 Nov 2014 16:13:02	-0.0148, -0.0145, -0.0141,	-0.0145	PPB		Hg LLC	HAA111914A
11973	CK STND	CCV		20 Nov 2014 07:07:57	4.9432, 4.9788, 5.0043,	4.9754	PPB		Hg LLC	HAA111914A
11974	CK STND	CCB		20 Nov 2014 07:10:10	-0.0153, -0.0151, -0.0153,	-0.0152	PPB		Hg LLC	HAA111914A
11975	SMPL	160-9438-G-1-C MS		20 Nov 2014 07:33:58	5.2943, 5.3272, 5.3517,	5.3244	PPB		Hg LLC	HAA111914A
11976	SMPL	160-9438-G-1-D MSD		20 Nov 2014 07:52:08	5.0978, 5.1327, 5.1583,	5.1296	PPB		Hg LLC	HAA111914A
11977	CK STND	CCV		20 Nov 2014 07:54:20	4.7928, 4.8277, 4.8533,	4.8246	PPB		Hg LLC	HAA111914A
11978	CK STND	CCB		20 Nov 2014 07:57:05	-0.0338, -0.0339, -0.0341,	-0.0339	PPB		Hg LLC	HAA111914A

Hg

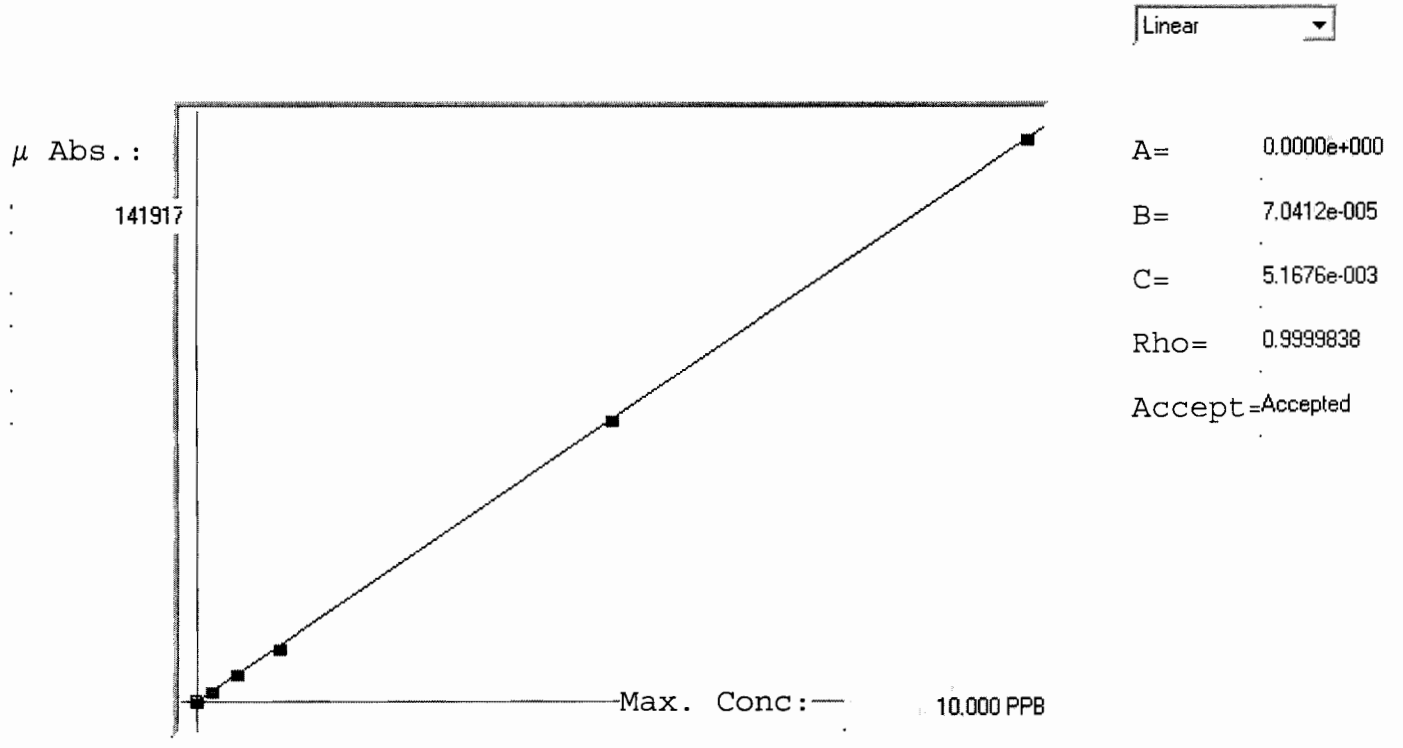
MTS 11/12 MTS 11/20/14

MTS 11/19/14

7470A

A. Batch: 158460

Hg LLC



Std ID	Conc.	Calc.	Dev.	Mean	SD or %RSD	Rep 1	Rep 2	Rep 3	Rep 4
CALIBRATION BLANK	0.000	0.028	0.028	329	0.471	329	330	330	
CALIBRATION 1	0.200	0.210	0.010	2910	0.6 %	2889	2911	2930	
CALIBRATION 2	0.500	0.489	-0.011	6875	0.6 %	6822	6880	6924	
CALIBRATION 3	1.000	0.962	-0.038	13595	0.5 %	13499	13607	13679	
CALIBRATION 4	5.000	5.012	0.012	71108	0.6 %	70581	71156	71589	
CALIBRATION 5	10.000	9.998	-0.002	141917	0.6 %	140900	142012	142839	

HAA111914A

METALS BATCH WORKSHEET

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Batch Number: 157719 Batch Start Date: 11/18/14 06:18 Batch Analyst: Mcnutt, Joe W

Batch Method: FILTRATION Batch End Date: 11/18/14 08:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	HNO3 00095			
LB 160-157719/1		FILTRATION, 3010A, 6010C		250 mL	250 mL	3 mL			
160-9438-G-1	MW358-20141113-21	FILTRATION, 3010A, 6010C	D	250 mL	250 mL	3 mL			
160-9438-G-2	MW359-20141113-21	FILTRATION, 3010A, 6010C	D	250 mL	250 mL	3 mL			

Batch Notes	
Filter Lot #	1128936
Lot # of Nitric Acid	460969

Basis	Basis Description
D	Dissolved

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Batch Number: 160137 Batch Start Date: 12/01/14 10:49 Batch Analyst: Davis, Shanika M

Batch Method: 3010A Batch End Date: 12/02/14 07:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	PREP 1 and 2 00006	STD SI 00009		
MB 160-160137/1		3010A, 6010C		50 mL	50 mL				
LCS 160-160137/2		3010A, 6010C		50 mL	50 mL	0.25 mL	0.25 mL		
160-9438-D-1	MW358-20141113-21	3010A, 6010C	T	50 mL	50 mL				
160-9438-D-1 MS	MW358-20141113-21	3010A, 6010C	T	50 mL	50 mL	0.25 mL	0.25 mL		
160-9438-D-1 MSD	MW358-20141113-21	3010A, 6010C	T	50 mL	50 mL	0.25 mL	0.25 mL		
160-9438-C-2	MW359-20141113-21	3010A, 6010C	T	50 mL	50 mL				

Batch Notes	
Balance ID	27150548
Final Hot Block Temperature	93.3 Degrees C
Lot # of hydrochloric acid	479398
Lot # of Nitric Acid	510250
Hot Block ID number	HOTBLOCK1
Initial Hot Block Temperature	94.2 Degrees C
Oven, Bath or Block Temperature 1	95.0 Degrees C
Oven, Bath or Block Temperature 2	95.0 Degrees C
Pipette ID	M-PREP-2
ID number of the thermometer	111815886
Digestion Tube/Cup Lot #	200373
Uncorrected Temperature	95.0 Degrees C

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Batch Number: 161405 Batch Start Date: 12/05/14 12:09 Batch Analyst: Davis, Shanika M

Batch Method: 3010A Batch End Date: 12/08/14 12:20

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	PREP 1 and 2 00006	STD SI 00009		
LB 160-157719/1-A		3010A, 6010C		50 mL	50 mL				
LCS 160-161405/2		3010A, 6010C		50 mL	50 mL	0.25 mL	0.25 mL		
160-9438-G-1-A	MW358-20141113-21	3010A, 6010C	D	50 mL	50 mL				
160-9438-G-2-A	MW359-20141113-21	3010A, 6010C	D	50 mL	50 mL				
160-9438-G-2-A MS	MW359-20141113-21	3010A, 6010C	D	50 mL	50 mL	0.25 mL	0.25 mL		
160-9438-G-2-A MSD	MW359-20141113-21	3010A, 6010C	D	50 mL	50 mL	0.25 mL	0.25 mL		

Batch Notes	
Balance ID	27150548
Final Hot Block Temperature	93.8 Degrees C
Lot # of hydrochloric acid	479398
Lot # of Nitric Acid	510250
Hot Block ID number	HOTBLOCK1
Initial Hot Block Temperature	95.0 Degrees C
Oven, Bath or Block Temperature 1	95.0 Degrees C
Pipette ID	M-PREP-2
ID number of the thermometer	111815886
Digestion Tube/Cup Lot #	201504
Uncorrected Temperature	95.0 Degrees C

Basis	Basis Description
D	Dissolved

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Batch Number: 157719 Batch Start Date: 11/18/14 06:18 Batch Analyst: Mcnutt, Joe W

Batch Method: FILTRATION Batch End Date: 11/18/14 08:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	HNO3 00095			
LB 160-157719/1		FILTRATION, 7470A, 7470A		250 mL	250 mL	3 mL			
160-9438-G-1	MW358-20141113-21	FILTRATION, 7470A, 7470A	D	250 mL	250 mL	3 mL			
160-9438-G-2	MW359-20141113-21	FILTRATION, 7470A, 7470A	D	250 mL	250 mL	3 mL			

Batch Notes	
Filter Lot #	1128936
Lot # of Nitric Acid	460969

Basis	Basis Description
D	Dissolved

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Batch Number: 158127 Batch Start Date: 11/19/14 10:30 Batch Analyst: Souris, Matthew T

Batch Method: 7470A Batch End Date: 11/19/14 12:30

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	Hg QC Int. 00445			
LB 160-157719/1-A		7470A, 7470A		30 mL	30 mL				
LCS 160-158127/2		7470A, 7470A		30 mL	30 mL	1.5 mL			
160-9438-G-1-A	MW358-20141113-21	7470A, 7470A	D	30 mL	30 mL				
160-9438-G-1-A MS	MW358-20141113-21	7470A, 7470A	D	30 mL	30 mL	1.5 mL			
160-9438-G-1-A MSD	MW358-20141113-21	7470A, 7470A	D	30 mL	30 mL	1.5 mL			
160-9438-G-2-A	MW359-20141113-21	7470A, 7470A	D	30 mL	30 mL				

Batch Notes	
Hydroxylamine Sulfate Lot Number	498982
Digestion End Time	1230
Digestion Start Time	1030
Sulfuric Acid Lot Number	461739
Lot # of hydrochloric acid	486928
Lot # of Nitric Acid	505085
Hood ID or number	HOOD2
Hot Block ID number	HG1
Potassium Persulfate Lot Number	437725
Potassium Permanganate Lot Number	486931
NaCl Lot #	166068
Oven, Bath or Block Temperature 1	94.7 Celsius
Oven, Bath or Block Temperature 2	94.7 Celsius
Pipette ID	MT002ANDMET12ANDMET10
Stannous Chloride Lot Number	498984
SOP Number	ST-MT-0007
ID number of the thermometer	111815895
Digestion Tube/Cup Lot #	198804

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Batch Number: 158127 Batch Start Date: 11/19/14 10:30 Batch Analyst: Souris, Matthew T

Batch Method: 7470A Batch End Date: 11/19/14 12:30

Basis	Basis Description
D	Dissolved

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Batch Number: 158128 Batch Start Date: 11/19/14 10:30 Batch Analyst: Souris, Matthew T

Batch Method: 7470A Batch End Date: 11/19/14 12:30

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	Hg QC Int. 00445			
MB 160-158128/1		7470A, 7470A		30 mL	30 mL				
LCS 160-158128/2		7470A, 7470A		30 mL	30 mL	1.5 mL			
160-9438-F-1	MW358-20141113-21	7470A, 7470A	T	30 mL	30 mL				
160-9438-F-2	MW359-20141113-21	7470A, 7470A	T	30 mL	30 mL				

Batch Notes	
Hydroxylamine Sulfate Lot Number	498982
Digestion End Time	1230
Digestion Start Time	1030
Sulfuric Acid Lot Number	461739
Lot # of hydrochloric acid	486928
Lot # of Nitric Acid	505085
Hood ID or number	HOOD2
Hot Block ID number	HG1
Potassium Persulfate Lot Number	437725
Potassium Permanganate Lot Number	486931
NaCl Lot #	166068
Oven, Bath or Block Temperature 1	94.7 Celsius
Oven, Bath or Block Temperature 2	94.7 Celsius
Pipette ID	MT002ANDMET12ANDMET10
Stannous Chloride Lot Number	498984
SOP Number	ST-MT-0007
ID number of the thermometer	111815895
Digestion Tube/Cup Lot #	198804

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY

COVER PAGE
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job Number: 160-9438-1

SDG No.:

Project: START Site in New Mexico

Client Sample ID	Lab Sample ID
MW358-20141113-21	160-9438-1
MW358-20141113-21	160-9438-1 DL
MW358-20141113-21	160-9438-1 DL2
MW359-20141113-21	160-9438-2
MW359-20141113-21	160-9438-2 DL
MW359-20141113-21	160-9438-2 DL3

Comments:

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: MW358-20141113-21 Lab Sample ID: 160-9438-1

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG ID.:

Matrix: Water Date Sampled: 11/13/2014 12:05

Reporting Basis: WET Date Received: 11/14/2014 09:20

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
	Alkalinity	160	5.0	0.54	mg/L		B	1	310.1
	Bicarbonate Alkalinity as CaCO3	160	5.0	0.54	mg/L		B	1	310.1
	Carbonate Alkalinity as CaCO3	ND	5.0	0.54	mg/L			1	310.1
	pH	7.24	0.100	0.100	SU		HF	1	150.1
	Total Dissolved Solids (TDS)	3600	5.0	3.5	mg/L			1	160.1
14797-55-8	Nitrate as N	4.0	2.0	0.40	mg/L		H	100	300.0
14797-65-0	Nitrite as N	ND	0.020	0.0030	mg/L			1	300.0
16984-48-8	Fluoride	0.69	0.10	0.010	mg/L			1	300.0
16887-00-6	Chloride	48	20	2.0	mg/L			100	300.0
24959-67-9	Bromide	0.52	0.25	0.025	mg/L			1	300.0
14808-79-8	Sulfate	2100	250	25	mg/L			500	300.0
14265-44-2	Orthophosphate	ND	0.50	0.078	mg/L			1	300.0

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: MW359-20141113-21 Lab Sample ID: 160-9438-2

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG ID.:

Matrix: Water Date Sampled: 11/13/2014 13:45

Reporting Basis: WET Date Received: 11/14/2014 09:20

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
	Alkalinity	200	5.0	0.54	mg/L		B	1	310.1
	Bicarbonate Alkalinity as CaCO3	200	5.0	0.54	mg/L		B	1	310.1
	Carbonate Alkalinity as CaCO3	ND	5.0	0.54	mg/L			1	310.1
	pH	7.20	0.100	0.100	SU		HF	1	150.1
	Total Dissolved Solids (TDS)	4600	5.0	3.5	mg/L			1	160.1
14797-55-8	Nitrate as N	1.2	0.40	0.080	mg/L		H	20	300.0
14797-65-0	Nitrite as N	0.61	0.40	0.060	mg/L		H	20	300.0
16984-48-8	Fluoride	0.42	0.10	0.010	mg/L			1	300.0
16887-00-6	Chloride	61	4.0	0.40	mg/L			20	300.0
24959-67-9	Bromide	0.96	0.25	0.025	mg/L			1	300.0
14808-79-8	Sulfate	2800	250	25	mg/L			500	300.0
14265-44-2	Orthophosphate	ND	0.50	0.078	mg/L			1	300.0

2-IN
CALIBRATION QUALITY CONTROL
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Analyst: MFM Batch Start Date: 11/14/2014

Reporting Units: SU Analytical Batch No.: 157000

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
4	ICV	11:57	pH	7.020	7.00	100	99.0-101.0		PH Buffer 7_00046
9	CCV	11:57	pH	7.030	7.00	100	99.0-101.0		PH Buffer 7_00046

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM II-IN

2-IN
CALIBRATION QUALITY CONTROL
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Analyst: AMF Batch Start Date: 11/15/2014

Reporting Units: mg/L Analytical Batch No.: 158759

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
1	ICV	12:42	Nitrate as N	0.405	0.400	101	90-110		IC 2nd Source_00007
			Nitrite as N	0.149	0.160	93	90-110		IC 2nd Source_00007
			Chloride	1.96	2.00	98	90-110		IC 2nd Source_00007
			Sulfate	7.75	8.00	97	90-110		IC 2nd Source_00007
2	ICB	12:56	Nitrate as N	ND					
			Nitrite as N	ND					
			Chloride	ND					
			Sulfate	ND					
13	CCV	15:29	Nitrate as N	0.404	0.400	101	90-110		IC Cal High_00031
			Nitrite as N	0.158	0.160	99	90-110		IC Cal High_00031
			Chloride	1.93	2.00	97	90-110		IC Cal High_00031
			Sulfate	7.66	8.00	96	90-110		IC Cal High_00031
14	CCB	15:43	Nitrate as N	ND					
			Nitrite as N	ND					
			Chloride	ND					
			Sulfate	ND					
25	CCV	18:16	Nitrate as N	0.415	0.400	104	90-110		IC Cal High_00031
			Nitrite as N	0.171	0.160	107	90-110		IC Cal High_00031
			Chloride	2.00	2.00	100	90-110		IC Cal High_00031
			Sulfate	7.76	8.00	97	90-110		IC Cal High_00031
26	CCB	18:30	Nitrate as N	ND					
			Nitrite as N	0.0106				J	
			Chloride	0.0570				J	
			Sulfate	0.0577				J	
36	CCV	20:49	Nitrate as N	0.404	0.400	101	90-110		IC Cal High_00031
			Nitrite as N	0.175	0.160	109	90-110		IC Cal High_00031
			Chloride	2.07	2.00	104	90-110		IC Cal High_00031
			Sulfate	7.71	8.00	96	90-110		IC Cal High_00031
37	CCB	21:03	Nitrate as N	ND					
			Nitrite as N	0.0122				J	
			Chloride	0.0954				J	
			Sulfate	0.0619				J	
45	CCV	22:54	Nitrate as N	0.396	0.400	99	90-110		IC Cal High_00031
			Nitrite as N	0.173	0.160	108	90-110		IC Cal High_00031
			Chloride	2.03	2.00	102	90-110		IC Cal High_00031
			Sulfate	7.68	8.00	96	90-110		IC Cal High_00031
46	CCB	23:08	Nitrate as N	ND					
			Nitrite as N	0.0144				J	
			Chloride	0.124				J	
			Sulfate	0.0700				J	

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM II-IN

2-IN
CALIBRATION QUALITY CONTROL
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Analyst: AMF Batch Start Date: 11/14/2014

Reporting Units: mg/L Analytical Batch No.: 158944

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
7	ICV	10:22	Nitrite as N	0.170	0.160	106	90-110		IC 2nd Source_00007
			Fluoride	1.01	1.00	101	90-110		IC 2nd Source_00007
			Bromide	2.04	2.00	102	90-110		IC 2nd Source_00007
			Sulfate	7.77	8.00	97	90-110		IC 2nd Source_00007
			Orthophosphate	7.95	8.00	99	90-110		IC 2nd Source_00007
8	ICB	10:36	Nitrite as N	ND					
			Fluoride	ND					
			Bromide	ND					
			Sulfate	ND					
			Orthophosphate	ND					
21	CCV	13:37	Nitrite as N	0.167	0.160	104	90-110		IC Cal High_00032
			Fluoride	0.994	1.00	99	90-110		IC Cal High_00032
			Bromide	2.02	2.00	101	90-110		IC Cal High_00032
			Sulfate	7.64	8.00	95	90-110		IC Cal High_00032
			Orthophosphate	7.84	8.00	98	90-110		IC Cal High_00032
22	CCB	13:50	Nitrite as N	ND					
			Fluoride	ND					
			Bromide	ND					
			Sulfate	ND					
			Orthophosphate	ND					
33	CCV	16:24	Nitrite as N	0.169	0.160	105	90-110		IC Cal High_00032
			Fluoride	1.01	1.00	101	90-110		IC Cal High_00032
			Bromide	2.04	2.00	102	90-110		IC Cal High_00032
			Sulfate	7.76	8.00	97	90-110		IC Cal High_00032
			Orthophosphate	7.95	8.00	99	90-110		IC Cal High_00032
34	CCB	16:38	Nitrite as N	ND					
			Fluoride	ND					
			Bromide	ND					
			Sulfate	ND					
			Orthophosphate	ND					
45	CCV	19:11	Nitrite as N	0.173	0.160	108	90-110		IC Cal High_00032
			Fluoride	1.00	1.00	100	90-110		IC Cal High_00032
			Bromide	2.03	2.00	102	90-110		IC Cal High_00032
			Orthophosphate	8.04	8.00	100	90-110		IC Cal High_00032
46	CCB	19:25	Nitrite as N	ND					
			Fluoride	ND					
			Bromide	ND					
			Orthophosphate	ND					
57	CCV	21:58	Fluoride	0.998	1.00	100	90-110		IC Cal High_00032
58	CCB	22:12	Fluoride	ND					

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM II-IN

3-IN
METHOD BLANK
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Method	Lab Sample ID	Analyte	Result	Qual	Units	RL	Dil
Batch ID: 158738	Date: 11/20/2014 08:30						
160.1	MB 160-158738/1	Total Dissolved Solids (TDS)	ND		mg/L	5.0	1
Batch ID: 158944	Date: 11/14/2014 10:50						
300.0	MB 160-158944/9	Nitrite as N	ND		mg/L	0.020	1
300.0	MB 160-158944/9	Fluoride	ND		mg/L	0.10	1
300.0	MB 160-158944/9	Bromide	ND		mg/L	0.25	1
300.0	MB 160-158944/9	Sulfate	ND		mg/L	0.50	1
300.0	MB 160-158944/9	Orthophosphate	ND		mg/L	0.50	1
Batch ID: 158759	Date: 11/15/2014 13:10						
300.0	MB 160-158759/3	Nitrate as N	ND		mg/L	0.020	1
300.0	MB 160-158759/3	Nitrite as N	ND		mg/L	0.020	1
300.0	MB 160-158759/3	Chloride	ND		mg/L	0.20	1
300.0	MB 160-158759/3	Sulfate	ND		mg/L	0.50	1
Batch ID: 158800	Date: 11/21/2014 14:46						
310.1	MB 160-158800/1	Alkalinity	1.25	J	mg/L	1.3	1
310.1	MB 160-158800/1	Bicarbonate Alkalinity as CaCO3	1.25	J	mg/L	1.3	1
310.1	MB 160-158800/1	Carbonate Alkalinity as CaCO3	ND		mg/L	1.3	1

5-IN
MATRIX SPIKE SAMPLE RECOVERY
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 158800	Date: 11/21/2014 14:46										
310.1	160-9438-1	Alkalinity	160		mg/L						B
310.1	160-9438-1 MS	Alkalinity	248		mg/L	100	84	80-120			
310.1	160-9438-1	Bicarbonate Alkalinity as CaCO3	160		mg/L						B
310.1	160-9438-1 MS	Bicarbonate Alkalinity as CaCO3	248		mg/L	100	84	80-120			

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM V-IN

6-IN
DUPLICATE
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Matrix: Water

Method	Client Sample ID	Lab Sample ID	Analyte	Result	Unit	RPD	RPD Limit	Qual
Batch ID: 157000 Date: 11/14/2014 11:57								
150.1	MW359-20141113-21	160-9438-2	pH	7.20	SU			
150.1	MW359-20141113-21	160-9438-2 DU	pH	7.220	SU	0.3	5	
Batch ID: 158738 Date: 11/20/2014 08:30								
160.1	MW358-20141113-21	160-9438-1	Total Dissolved Solids (TDS)	3600	mg/L			
160.1	MW358-20141113-21	160-9438-1 DU	Total Dissolved Solids (TDS)	3530	mg/L	0.8	20	
Batch ID: 158800 Date: 11/21/2014 14:46								
310.1	MW358-20141113-21	160-9438-1	Alkalinity	160	mg/L			
310.1	MW358-20141113-21	160-9438-1 DU	Alkalinity	166	mg/L	1	20	
310.1	MW358-20141113-21	160-9438-1	Bicarbonate Alkalinity as CaCO3	160	mg/L			
310.1	MW358-20141113-21	160-9438-1 DU	Bicarbonate Alkalinity as CaCO3	166	mg/L	1	20	
310.1	MW358-20141113-21	160-9438-1	Carbonate Alkalinity as CaCO3	ND	mg/L			
310.1	MW358-20141113-21	160-9438-1 DU	Carbonate Alkalinity as CaCO3	ND	mg/L	NC	20	

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VI-IN

7A-IN
LAB CONTROL SAMPLE
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 157000	Date: 11/14/2014 11:57										
						LCS Source: PH Buffer 7_00046					
150.1	LCS 160-157000/5	pH	7.010		SU	7.00	100	99.0-10 1.0			
Batch ID: 158738	Date: 11/20/2014 08:30										
						LCS Source: TDS LCS_00036					
160.1	LCS 160-158738/2	Total Dissolved Solids (TDS)	511		mg/L	500	102	90-110			
Batch ID: 158944	Date: 11/14/2014 11:03										
						LCS Source: IC Cal High_00032					
300.0	LCS 160-158944/10	Nitrite as N	0.165		mg/L	0.160	103	90-110			
300.0	LCS 160-158944/10	Fluoride	0.999		mg/L	1.00	100	90-110			
300.0	LCS 160-158944/10	Bromide	2.03		mg/L	2.00	102	90-110			
300.0	LCS 160-158944/10	Sulfate	7.72		mg/L	8.00	96	90-110			
300.0	LCS 160-158944/10	Orthophosphate	7.78		mg/L	8.00	97	90-110			
Batch ID: 158759	Date: 11/15/2014 13:24										
						LCS Source: IC Cal High_00031					
300.0	LCS 160-158759/4	Nitrate as N	0.399		mg/L	0.400	100	90-110			
300.0	LCS 160-158759/4	Nitrite as N	0.151		mg/L	0.160	94	90-110			
300.0	LCS 160-158759/4	Chloride	1.95		mg/L	2.00	98	90-110			
300.0	LCS 160-158759/4	Sulfate	7.78		mg/L	8.00	97	90-110			
Batch ID: 158800	Date: 11/21/2014 14:46										
						LCS Source: Alk Int._00009					
310.1	LCS 160-158800/2	Alkalinity	186		mg/L	200	93	90-110			
310.1	LCS 160-158800/2	Bicarbonate Alkalinity as CaCO3	186		mg/L	200	93	90-110			

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA-IN

7A-IN
HIGH LEVEL CONTROL SAMPLE
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 158800	Date: 11/21/2014 14:46										
						LCS Source: Alk Int._00009					
310.1	HLCS 160-158800/3	Alkalinity	374		mg/L	400	94	90-110			
310.1	HLCS 160-158800/3	Bicarbonate Alkalinity as CaCO3	374		mg/L	400	94	90-110			

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA-IN

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job Number: 160-9438-1

SDG Number:

Matrix: Water Instrument ID: 5STAR#4

Method: 310.1 MDL Date: 01/19/2012 14:28

Analyte	Wavelength/ Mass	RL (mg/L)	MDL (mg/L)
Alkalinity		5	0.542
Bicarbonate Alkalinity as CaCO3		5	0.542
Carbonate Alkalinity as CaCO3		5	0.542

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job Number: 160-9438-1

SDG Number:

Matrix: Water Instrument ID: 5STAR#4

Method: 310.1 XMDL Date: 01/19/2012 14:29

Analyte	Wavelength/ Mass	XRL (mg/L)	XMDL (mg/L)
Alkalinity		5	0.542
Bicarbonate Alkalinity as CaCO3		5	0.542
Carbonate Alkalinity as CaCO3		5	0.542

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job Number: 160-9438-1

SDG Number:

Matrix: Water Instrument ID: A111

Method: 150.1 RL Date: 01/01/2011 14:25

Analyte	Wavelength/ Mass	RL (SU)	
pH		0.1	

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job Number: 160-9438-1

SDG Number:

Matrix: Water Instrument ID: A111

Method: 150.1 XRL Date: 01/01/2011 14:25

Analyte	Wavelength/ Mass	XRL (SU)	
pH		0.1	

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job Number: 160-9438-1

SDG Number:

Matrix: Water Instrument ID: NOEQUIP

Method: 160.1 MDL Date: 10/18/2011 14:16

Analyte	Wavelength/ Mass	RL (mg/L)	MDL (mg/L)
Total Dissolved Solids (TDS)		5	3.497

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job Number: 160-9438-1

SDG Number:

Matrix: Water Instrument ID: NOEQUIP

Method: 160.1 XMDL Date: 10/18/2011 14:17

Analyte	Wavelength/ Mass	XRL (mg/L)	XMDL (mg/L)
Total Dissolved Solids (TDS)		5	3.497

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job Number: 160-9438-1

SDG Number:

Matrix: Water Instrument ID: IC2500

Method: 300.0 MDL Date: 04/24/2013 10:20

Analyte	Wavelength/ Mass	RL (mg/L)	MDL (mg/L)
Bromide		0.25	0.025
Chloride		0.2	0.02
Fluoride		0.1	0.01
Nitrate as N		0.02	0.004
Nitrite as N		0.02	0.003
Orthophosphate		0.5	0.078
Sulfate		0.5	0.05

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job Number: 160-9438-1

SDG Number:

Matrix: Water Instrument ID: IC2500

Method: 300.0 XMDL Date: 04/24/2013 10:14

Analyte	Wavelength/ Mass	XRL (mg/L)	XMDL (mg/L)
Bromide		0.25	0.025
Chloride		0.2	0.02
Fluoride		0.1	0.01
Nitrate as N		0.02	0.004
Nitrite as N		0.02	0.003
Orthophosphate		0.5	0.078
Sulfate		0.5	0.05

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Instrument ID: 5STAR#4 Analysis Method: 310.1

Start Date: 11/21/2014 14:46 End Date: 11/21/2014 14:46

Lab Sample Id	D/F	Type	Time	Analytes																										
				Alk	BALKCC	CarAlk																								
MB 160-158800/1	1	T	14:46	X	X	X																								
LCS 160-158800/2	1	T	14:46	X	X																									
HLCS 160-158800/3	1	T	14:46	X	X																									
160-9438-1	1	T	14:46	X	X	X																								
160-9438-1 DU	1	T	14:46	X	X	X																								
160-9438-1 MS	1	T	14:46	X	X																									
160-9438-2	1	T	14:46	X	X	X																								
ZZZZZZ			14:46																											
ZZZZZZ			14:46																											
ZZZZZZ			14:46																											
ZZZZZZ			14:46																											
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ZZZZZZ			14:46																											

Prep Types:
T = Total/NA

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Instrument ID: A111 Analysis Method: 150.1

Start Date: 11/14/2014 11:57 End Date: 11/14/2014 11:57

Lab Sample Id	D/F	Type	Time	Analytes																								
				pH																								
IC 160-157000/1			11:57	X																								
IC 160-157000/2			11:57	X																								
IC 160-157000/3			11:57	X																								
ICV 160-157000/4	1		11:57	X																								
LCS 160-157000/5	1	T	11:57	X																								
160-9438-2	1	T	11:57	X																								
160-9438-2 DU	1	T	11:57	X																								
160-9438-1	1	T	11:57	X																								
CCV 160-157000/9	1		11:57	X																								

Prep Types:
T = Total/NA

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Instrument ID: NOEQUIP Analysis Method: 160.1

Start Date: 11/20/2014 08:30 End Date: 11/20/2014 08:30

Lab Sample Id	D/F	Type	Time	Analytes																								
				TDS																								
MB 160-158738/1	1	T	08:30	X																								
LCS 160-158738/2	1	T	08:30	X																								
160-9438-1	1	T	08:30	X																								
160-9438-1 DU	1	T	08:30	X																								
ZZZZZZ			08:30																									
160-9438-2	1	T	08:30	X																								
ZZZZZZ			08:30																									
ZZZZZZ			08:30																									
ZZZZZZ			08:30																									
ZZZZZZ			08:30																									
ZZZZZZ			08:30																									
ZZZZZZ			08:30																									
ZZZZZZ			08:30																									

Prep Types:
T = Total/NA

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Instrument ID: IC2500 Analysis Method: 300.0

Start Date: 11/14/2014 08:58 End Date: 11/14/2014 23:07

Lab Sample Id	D/F	Type	Time	Analytes																										
				Br	F	N-No2	PO4	SO4																							
IC 160-158944/1			08:58	X	X	X	X	X																						
IC 160-158944/2			09:12	X	X	X	X	X																						
IC 160-158944/3			09:26	X	X	X	X	X																						
IC 160-158944/4			09:40	X	X	X	X	X																						
IC 160-158944/5			09:54	X	X	X	X	X																						
IC 160-158944/6			10:08	X	X	X	X	X																						
ICV 160-158944/7	1		10:22	X	X	X	X	X																						
ICB 160-158944/8	1		10:36	X	X	X	X	X																						
MB 160-158944/9	1	T	10:50	X	X	X	X	X																						
LCS 160-158944/10	1	T	11:03	X	X	X	X	X																						
ZZZZZZ			11:17																											
ZZZZZZ			11:31																											
ZZZZZZ			11:45																											
ZZZZZZ			11:59																											
ZZZZZZ			12:13																											
ZZZZZZ			12:27																											
ZZZZZZ			12:41																											
ZZZZZZ			12:55																											
ZZZZZZ			13:09																											
ZZZZZZ			13:23																											
CCV 160-158944/21	1		13:37	X	X	X	X	X																						
CCB 160-158944/22	1		13:50	X	X	X	X	X																						
ZZZZZZ			14:04																											
ZZZZZZ			14:18																											
ZZZZZZ			14:32																											
ZZZZZZ			14:46																											
ZZZZZZ			15:00																											
ZZZZZZ			15:14																											
ZZZZZZ			15:28																											
ZZZZZZ			15:42																											
ZZZZZZ			15:56																											
ZZZZZZ			16:10																											
CCV 160-158944/33	1		16:24	X	X	X	X	X																						
CCB 160-158944/34	1		16:38	X	X	X	X	X																						
ZZZZZZ			16:51																											
ZZZZZZ			17:05																											
ZZZZZZ			17:19																											
ZZZZZZ			17:33																											
160-9438-1	1	T	17:47	X	X	X	X																							

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Instrument ID: IC2500 Analysis Method: 300.0

Start Date: 11/14/2014 08:58 End Date: 11/14/2014 23:07

Lab Sample Id	D/F	Type	Time	Analytes																										
				Br	F	N-No2	PO4	SO4																							
ZZZZZZ			18:01																											
ZZZZZZ			18:15																											
160-9438-2	1	T	18:29	X	X		X																							
ZZZZZZ			18:43																											
ZZZZZZ			18:57																											
CCV 160-158944/45	1		19:11	X	X	X	X																							
CCB 160-158944/46	1		19:25	X	X	X	X																							
ZZZZZZ			19:38																											
ZZZZZZ			19:52																											
ZZZZZZ			20:06																											
ZZZZZZ			20:20																											
ZZZZZZ			20:34																											
ZZZZZZ			20:48																											
ZZZZZZ			21:02																											
ZZZZZZ			21:16																											
ZZZZZZ			21:30																											
ZZZZZZ			21:44																											
CCV 160-158944/57	1		21:58		X																									
CCB 160-158944/58	1		22:12		X																									
ZZZZZZ			22:26																											
ZZZZZZ			22:39																											
CCV 160-158944/61			22:53																											
CCB 160-158944/62			23:07																											

Prep Types:
T = Total/NA

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Instrument ID: IC2500 Analysis Method: 300.0

Start Date: 11/15/2014 12:42 End Date: 11/15/2014 23:08

Lab Sample Id	D/F	Type	Time	Analytes																										
				CL-	N-No2	NO3	SO4																							
ICV 160-158759/1	1		12:42	X	X	X	X																							
ICB 160-158759/2	1		12:56	X	X	X	X																							
MB 160-158759/3	1	T	13:10	X	X	X	X																							
LCS 160-158759/4	1	T	13:24	X	X	X	X																							
ZZZZZZ			13:38																											
ZZZZZZ			13:52																											
ZZZZZZ			14:05																											
ZZZZZZ			14:19																											
ZZZZZZ			14:33																											
ZZZZZZ			14:47																											
ZZZZZZ			15:01																											
ZZZZZZ			15:15																											
CCV 160-158759/13	1		15:29	X	X	X	X																							
CCB 160-158759/14	1		15:43	X	X	X	X																							
ZZZZZZ			15:57																											
ZZZZZZ			16:11																											
ZZZZZZ			16:25																											
ZZZZZZ			16:39																											
ZZZZZZ			16:53																											
ZZZZZZ			17:06																											
ZZZZZZ			17:20																											
ZZZZZZ			17:34																											
ZZZZZZ			17:48																											
ZZZZZZ			18:02																											
CCV 160-158759/25	1		18:16	X	X	X	X																							
CCB 160-158759/26	1		18:30	X	X	X	X																							
ZZZZZZ			18:44																											
ZZZZZZ			18:58																											
160-9438-1 DL	100	T	19:12	X		X																								
160-9438-1 DL2	500	T	19:26				X																							
160-9438-2 DL	20	T	19:40	X	X	X																								
ZZZZZZ			19:53																											
160-9438-2 DL3	500	T	20:07				X																							
ZZZZZZ			20:21																											
ZZZZZZ			20:35																											
CCV 160-158759/36	1		20:49	X	X	X	X																							
CCB 160-158759/37	1		21:03	X	X	X	X																							
ZZZZZZ			21:17																											
ZZZZZZ			21:31																											

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Instrument ID: IC2500 Analysis Method: 300.0

Start Date: 11/15/2014 12:42 End Date: 11/15/2014 23:08

Lab Sample Id	D/F	Type	Time	Analytes																									
				CL-	N-No2	NO3	SO4																						
ZZZZZZ			21:45																										
ZZZZZZ			21:59																										
ZZZZZZ			22:13																										
ZZZZZZ			22:27																										
ZZZZZZ			22:41																										
CCV 160-158759/45	1		22:54	X	X	X	X																						
CCB 160-158759/46	1		23:08	X	X	X	X																						

Prep Types:
T = Total/NA

FORM XIII-IN

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

St. Louis
Data Review Checklist
Ion Chromatography
Method 300.0/9056A

Job#(s): 9412-1, 9407-1, 9408-1, 9400-1, 9438-1, ~~9434-1~~ 9437-1 Batch#(s): 158944

Run Date: 11/14 Due Date: 11/28 NCM# 1) 45082 2) 45084 3) 45085 Instrument ID: ICS2500

	Yes	No	N/A	2nd Level
A. Calibration/Instrument Run QC 1. Instrument calibrated (if applicable) using a blank and the required minimum number of calibration standards?	✓			✓
2. Is the initial calibration curve correlation coefficient ≥ 0.995?	✓			✓
3. ICV/CCV analyzed at the appropriate frequency and within control limits?	✓			✓
4. ICB/CCB analyzed at appropriate frequency and within +/- RL?	✓			✓
5. Calibration curve is updated in the method with the correct retention times?	✓			✓
6. Is the area count for the curve appropriate for the calibration levels in use? (verify one point on the calibration)	✓			✓
B. Sample Results 1. Samples with concentration > the linear range or affected by interferences diluted and reanalyzed? NCM-1	✓			✓
2. All reported results bracketed by in control QC?	✓			✓
3. Sample analyses done within holding time? NCM-3	✓	✓		✓
4. All dilutions were checked and verified against the "straight" runs?	✓			✓
5. Perchlorate: are all sample interferences less than the Matrix Conductivity Threshold observed in the Inst. Performance Check/INF?			✓	✓
C. Preparation/Matrix QC 1. LCS done per prep batch and within QC limits?	✓			✓
2. Method blank done per prep batch and <RL or CRDL (CLP)?	✓			✓
3. MS run at required frequency and within limits? NCM-2	✓	✓		✓
4. MS or Dup run at required frequency and RPD within SOP limits?	✓			✓
D. Other 1. Are all non-conformances documented appropriately?	✓			✓
2. Current MDL data on file?	✓			✓
3. Calculations checked for error?			✓	✓
4. Were manual integrations checked for appropriateness, correctness and proper documentation (before/after chromatograms, reason, analyst, date?	✓			✓
5. Transcriptions checked for error?	✓			✓
6. All client/project specific requirements met?	✓			✓
7. Date/time of analysis verified as correct?	✓			✓

Analyst: Alicia Slater Date: 11-26-14

Comments:

2nd Level: JB Date: 12/2/14

Due: 11/28

TestAmerica St. Louis
Anion Worksheet

Analyst: AF/LH Method(s): [X] 300.0 [ ] 9056A

Date: 11/14/14 Instrument: ICS2500

Sample Sequence: 111414Cal Jack Calibration Sequence: 111414CAL Jack

All result as ppb

Batch: 158944

Lot Number	Sample ID	Fluoride	Chloride	Nitrite	Bromide	Nitrate	Phosphate	Sulfate	Chlorate	Iodide
9412-1	9412-7	2X	40X	2X		40X		40X		
↓	8	2X	40X	2X		40X		40X		
	9	2X	40X	2X		40X		2X		
	10	2X	40X	2X		40X		40X	Rcvd 11/13, smp 11/12, OOH, but w/in 2X	
	11	2X	40X	2X		40X		40X		
	12	2X	(40X)	2X		(40X)		(40X)	DNR 40X.	
	15	2X	40X	2X		40X		40X		
9407-1	9407-1	2X	2X	2X		2X		2X		
9408-1	9408-1					500X			smp Rcvd 11/13, smp 11/11 - OOH, but w/in 2X	
9400-1	9400-1							1X		
9438-1	9438-1	1X	100X	1X	1X	100X	1X	500X		
↓	↓ 2	1X	100X	20X	1X	20X	1X	500X		
9407-1	9434-1	2X	20X	2X		20X		20X		
9437-1	9437-1	2X	20X	2X		20X		20X		
↓	↓ 2	2X	20X	2X		20X		20X		
9326-1	9326-1	1X	1X							

RR closing CCV

9434-1 smp/du/MS NOT prepped at dilution - RR for dilution

Form: INORG-0080, Revised 7/8/2014
SOP: ST-WC-0028

Sequence: 111414CAL_JACK
Operator: FLAKERA
Printed: 11/22/2014 5:14:00 PM

Title:
Datasource: SLIC03_local
Location: JACK\SEQUENCES\14NOV
Timebase: JACK
#Samples: 63
Created: 11/14/2014 8:57:40 AM by FLAKERA
Last Update: 11/22/2014 5:13:50 PM by FLAKERA

No.	Name	Type	Pos.	Inj. Vol.	Program	Method	Status	Inj. Date/Time
1	CAL 1	Standard	1	50.0	SLIC03_local	STLANIONS	Finished	11/14/2014 8:58:39 AM
2	CAL 2	Standard	2	50.0	SLIC03_local	STLANIONS	Finished	11/14/2014 9:12:34 AM
3	CAL 3	Standard	3	50.0	SLIC03_local	STLANIONS	Finished	11/14/2014 9:26:29 AM
4	CAL 4	Standard	4	50.0	SLIC03_local	STLANIONS	Finished	11/14/2014 9:40:25 AM
5	CAL 5	Standard	5	50.0	SLIC03_local	STLANIONS	Finished	11/14/2014 9:54:20 AM
6	CAL 6	Standard	6	50.0	SLIC03_local	STLANIONS	Finished	11/14/2014 10:08:15 AM
7	ICV	Unknown	7	50.0	SLIC03_local	STLANIONS	Finished	11/14/2014 10:22:10 AM
8	ICB	Unknown	8	50.0	SLIC03_local	STLANIONS	Finished	11/14/2014 10:36:06 AM
9	MB	Unknown	9	50.0	SLIC03_local	STLANIONS	Finished	11/14/2014 10:50:01 AM
10	LCS	Unknown	10	50.0	SLIC03_local	STLANIONS	Finished	11/14/2014 11:03:56 AM
11	9412-A-7 @2	Unknown	11	50.0	SLIC03_local	STLANIONS	Finished	11/14/2014 11:17:51 AM
12	9412-A-7 @40	Unknown	12	50.0	SLIC03_local	STLANIONS	Finished	11/14/2014 11:31:46 AM
13	DU 9412-A-7 @2	Unknown	13	50.0	SLIC03_local	STLANIONS	Finished	11/14/2014 11:45:41 AM
14	DU 9412-A-7 @40	Unknown	14	50.0	SLIC03_local	STLANIONS	Finished	11/14/2014 11:59:37 AM
15	MS 9412-A-7 @2	Unknown	15	50.0	SLIC03_local	STLANIONS	Finished	11/14/2014 12:13:32 PM
16	MS 9412-A-7 @40	Unknown	16	50.0	SLIC03_local	STLANIONS	Finished	11/14/2014 12:27:27 PM
17	9412-A-8 @2	Unknown	17	50.0	SLIC03_local	STLANIONS	Finished	11/14/2014 12:41:23 PM
18	9412-A-8 @40	Unknown	18	50.0	SLIC03_local	STLANIONS	Finished	11/14/2014 12:55:18 PM
19	9412-A-9 @2	Unknown	19	50.0	SLIC03_local	STLANIONS	Finished	11/14/2014 1:09:13 PM
20	9412-A-9 @40	Unknown	20	50.0	SLIC03_local	STLANIONS	Finished	11/14/2014 1:23:08 PM
21	CCV	Unknown	21	50.0	SLIC03_local	STLANIONS	Finished	11/14/2014 1:37:03 PM
22	CCB	Unknown	22	50.0	SLIC03_local	STLANIONS	Finished	11/14/2014 1:50:58 PM
23	9412-A-10 @2	Unknown	23	50.0	SLIC03_local	STLANIONS	Finished	11/14/2014 2:04:53 PM
24	9412-A-10 @40	Unknown	24	50.0	SLIC03_local	STLANIONS	Finished	11/14/2014 2:18:48 PM
25	9412-A-11 @2	Unknown	25	50.0	SLIC03_local	STLANIONS	Finished	11/14/2014 2:32:43 PM
26	9412-A-11 @40	Unknown	26	50.0	SLIC03_local	STLANIONS	Finished	11/14/2014 2:46:38 PM
27	9412-A-12 @2	Unknown	27	50.0	SLIC03_local	STLANIONS	Finished	11/14/2014 3:00:33 PM
28	9412-A-12 @40	Unknown	28	50.0	SLIC03_local	STLANIONS	Finished	11/14/2014 3:14:28 PM
29	9412-A-15 @2	Unknown	29	50.0	SLIC03_local	STLANIONS	Finished	11/14/2014 3:28:24 PM
30	9412-A-15 @40	Unknown	30	50.0	SLIC03_local	STLANIONS	Finished	11/14/2014 3:42:19 PM
31	9407-A-1 @2	Unknown	31	50.0	SLIC03_local	STLANIONS	Finished	11/14/2014 3:56:14 PM
32	9407-A-1 @40	Unknown	32	50.0	SLIC03_local	STLANIONS	Finished	11/14/2014 4:10:09 PM
33	CCV	Unknown	33	50.0	SLIC03_local	STLANIONS	Finished	11/14/2014 4:24:05 PM
34	CCB	Unknown	34	50.0	SLIC03_local	STLANIONS	Finished	11/14/2014 4:38:00 PM
35	9408-A-1 @100	Unknown	35	50.0	SLIC03_local	STLANIONS	Finished	11/14/2014 4:51:55 PM
36	9408-A-1 @500	Unknown	36	50.0	SLIC03_local	STLANIONS	Finished	11/14/2014 5:05:50 PM
37	9400-A-1	Unknown	37	50.0	SLIC03_local	STLANIONS	Finished	11/14/2014 5:19:46 PM
38	9400-A-1 @20	Unknown	38	50.0	SLIC03_local	STLANIONS	Finished	11/14/2014 5:33:41 PM
39	9438-H-1	Unknown	39	50.0	SLIC03_local	STLANIONS	Finished	11/14/2014 5:47:36 PM
40	9438-H-1 @100	Unknown	40	50.0	SLIC03_local	STLANIONS	Finished	11/14/2014 6:01:32 PM
41	9438-H-1 @500	Unknown	41	50.0	SLIC03_local	STLANIONS	Finished	11/14/2014 6:15:27 PM
42	9438-H-2	Unknown	42	50.0	SLIC03_local	STLANIONS	Finished	11/14/2014 6:29:22 PM

Chromeleon © Dionex Corporation, Version 6.80 Build 2212

Title:
Datasource: SLIC03_local
Location: JACK\SEQUENCES\14NOV
Timebase: JACK
#Samples: 63
Created: 11/14/2014 8:57:40 AM by FLAKERA
Last Update: 11/22/2014 5:13:50 PM by FLAKERA

No.	Name	Weight	Dil. Factor	ISTD Amount	Sample ID	Replicate ID	Comment
1	CAL 1	1.0000	1.0000	1.0000	100	111414	
2	CAL 2	1.0000	1.0000	1.0000	101	111414	
3	CAL 3	1.0000	1.0000	1.0000	102	111414	
4	CAL 4	1.0000	1.0000	1.0000	103	111414	
5	CAL 5	1.0000	1.0000	1.0000	104	111414	
6	CAL 6	1.0000	1.0000	1.0000	105	111414	
7	ICV	1.0000	1.0000	1.0000	106	111414	
8	ICB	1.0000	1.0000	1.0000	107	111414	
9	MB	1.0000	1.0000	1.0000	108	111414	
10	LCS	1.0000	1.0000	1.0000	109	111414	
11	9412-A-7 @2	1.0000	1.0000	1.0000	110	111414	
12	9412-A-7 @40	1.0000	1.0000	1.0000	111	111414	
13	DU 9412-A-7 @2	1.0000	1.0000	1.0000	112	111414	
14	DU 9412-A-7 @40	1.0000	1.0000	1.0000	113	111414	
15	MS 9412-A-7 @2	1.0000	1.0000	1.0000	114	111414	
16	MS 9412-A-7 @40	1.0000	1.0000	1.0000	115	111414	
17	9412-A-8 @2	1.0000	1.0000	1.0000	116	111414	
18	9412-A-8 @40	1.0000	1.0000	1.0000	117	111414	
19	9412-A-9 @2	1.0000	1.0000	1.0000	118	111414	
20	9412-A-9 @40	1.0000	1.0000	1.0000	119	111414	
21	CCV	1.0000	1.0000	1.0000	120	111414	
22	CCB	1.0000	1.0000	1.0000	121	111414	
23	9412-A-10 @2	1.0000	1.0000	1.0000	122	111414	
24	9412-A-10 @40	1.0000	1.0000	1.0000	123	111414	
25	9412-A-11 @2	1.0000	1.0000	1.0000	124	111414	
26	9412-A-11 @40	1.0000	1.0000	1.0000	125	111414	
27	9412-A-12 @2	1.0000	1.0000	1.0000	126	111414	
28	9412-A-12 @40	1.0000	1.0000	1.0000	127	111414	
29	9412-A-15 @2	1.0000	1.0000	1.0000	128	111414	
30	9412-A-15 @40	1.0000	1.0000	1.0000	129	111414	
31	9407-A-1 @2	1.0000	1.0000	1.0000	130	111414	
32	9407-A-1 @40	1.0000	1.0000	1.0000	131	111414	
33	CCV	1.0000	1.0000	1.0000	132	111414	
34	CCB	1.0000	1.0000	1.0000	133	111414	
35	9408-A-1 @100	1.0000	1.0000	1.0000	134	111414	
36	9408-A-1 @500	1.0000	1.0000	1.0000	135	111414	
37	9400-A-1	1.0000	1.0000	1.0000	136	111414	
38	9400-A-1 @20	1.0000	1.0000	1.0000	137	111414	
39	9438-H-1	1.0000	1.0000	1.0000	138	111414	
40	9438-H-1 @100	1.0000	1.0000	1.0000	139	111414	
41	9438-H-1 @500	1.0000	1.0000	1.0000	140	111414	
42	9438-H-2	1.0000	1.0000	1.0000	141	111414	

Title:
Datasource: SLIC03_local
Location: JACK\SEQUENCES\14NOV
Timebase: JACK
#Samples: 63
Created: 11/14/2014 8:57:40 AM by FLAKERA
Last Update: 11/22/2014 5:13:50 PM by FLAKERA

No.	Name	Type	Pos.	Inj. Vol.	Program	Method	Status	Inj. Date/Time
43	9438-H-2 @100	Unknown	43	50.0	SLIC03_local	STLANIONS	Finished	11/14/2014 6:43:17 PM
44	9438-H-2 @500	Unknown	44	50.0	SLIC03_local	STLANIONS	Finished	11/14/2014 6:57:13 PM
45	CCV	Unknown	45	50.0	SLIC03_local	STLANIONS	Finished	11/14/2014 7:11:08 PM
46	CCB	Unknown	46	50.0	SLIC03_local	STLANIONS	Finished	11/14/2014 7:25:04 PM
47	9434-A-1 @2	Unknown	47	50.0	SLIC03_local	STLANIONS	Finished	11/14/2014 7:38:59 PM
48	9434-A-1 @40	Unknown	48	50.0	SLIC03_local	STLANIONS	Finished	11/14/2014 7:52:54 PM
49	DU 9434-A-1 @2	Unknown	49	50.0	SLIC03_local	STLANIONS	Finished	11/14/2014 8:06:49 PM
50	DU 9434-A-1 @40	Unknown	50	50.0	SLIC03_local	STLANIONS	Finished	11/14/2014 8:20:44 PM
51	MS 9434-A-1 @2	Unknown	51	50.0	SLIC03_local	STLANIONS	Finished	11/14/2014 8:34:40 PM
52	MS 9434-A-1 @40	Unknown	52	50.0	SLIC03_local	STLANIONS	Finished	11/14/2014 8:48:35 PM
53	9437-A-1 @2	Unknown	53	50.0	SLIC03_local	STLANIONS	Finished	11/14/2014 9:02:31 PM
54	9437-A-1 @40	Unknown	54	50.0	SLIC03_local	STLANIONS	Finished	11/14/2014 9:16:26 PM
55	9437-A-2 @2	Unknown	55	50.0	SLIC03_local	STLANIONS	Finished	11/14/2014 9:30:21 PM
56	9437-A-2 @40	Unknown	56	50.0	SLIC03_local	STLANIONS	Finished	11/14/2014 9:44:17 PM
57	CCV	Unknown	57	50.0	SLIC03_local	STLANIONS	Finished	11/14/2014 9:58:12 PM
58	CCB	Unknown	58	50.0	SLIC03_local	STLANIONS	Finished	11/14/2014 10:12:07 PM
59	9412-A-12 @40	Unknown	59	50.0	SLIC03_local	STLANIONS	Finished	11/14/2014 10:26:02 PM
60	9326-A-1	Unknown	60	50.0	SLIC03_local	STLANIONS	Finished	11/14/2014 10:39:58 PM
61	CCV	Unknown	61	50.0	SLIC03_local	STLANIONS	Finished	11/14/2014 10:53:53 PM
62	CCB	Unknown	62	50.0	SLIC03_local	STLANIONS	Finished	11/14/2014 11:07:48 PM
63	END	Unknown	63	50.0	SHUTDOWN	STLANIONS	Finished	11/14/2014 11:21:43 PM

Title:
Datasource: SLIC03_local
Location: JACK\SEQUENCES\14NOV
Timebase: JACK
#Samples: 63
Created: 11/14/2014 8:57:40 AM by FLAKERA
Last Update: 11/22/2014 5:13:50 PM by FLAKERA

No.	Name	Weight	Dil. Factor	ISTD Amount	Sample ID	Replicate ID	Comment
43	9438-H-2 @100	1.0000	1.0000	1.0000	142	111414	
44	9438-H-2 @500	1.0000	1.0000	1.0000	143	111414	
45	CCV	1.0000	1.0000	1.0000	144	111414	
46	CCB	1.0000	1.0000	1.0000	145	111414	
47	9434-A-1 @2	1.0000	1.0000	1.0000	146	111414	
48	9434-A-1 @40	1.0000	1.0000	1.0000	147	111414	
49	DU 9434-A-1 @2	1.0000	1.0000	1.0000	148	111414	
50	DU 9434-A-1 @40	1.0000	1.0000	1.0000	149	111414	
51	MS 9434-A-1 @2	1.0000	1.0000	1.0000	150	111414	
52	MS 9434-A-1 @40	1.0000	1.0000	1.0000	151	111414	
53	9437-A-1 @2	1.0000	1.0000	1.0000	152	111414	
54	9437-A-1 @40	1.0000	1.0000	1.0000	153	111414	
55	9437-A-2 @2	1.0000	1.0000	1.0000	154	111414	
56	9437-A-2 @40	1.0000	1.0000	1.0000	155	111414	
57	CCV	1.0000	1.0000	1.0000	156	111414	
58	CCB	1.0000	1.0000	1.0000	157	111414	
59	9412-A-12 @40	1.0000	1.0000	1.0000	158	111414	
60	9326-A-1	1.0000	1.0000	1.0000	159	111414	
61	CCV	1.0000	1.0000	1.0000	160	111414	
62	CCB	1.0000	1.0000	1.0000	161	111414	
63	END	1.0000	1.0000	1.0000	162	111414	

Title: STLANIONS
Datasource: SLIC03_local
Location: JACK\SEQUENCES\14NOV\111414CAL_JACK.SEQ
Created: 12/5/2005 2:54:29 PM by chemist
Timebase: JACK
Changed: 11/11/2014 2:20:15 PM by FLAKERA

```
            Pressure.LowerLimit =               0
            Pressure.UpperLimit =               5000
            %A.Equate =                         "%A"
            %B.Equate =                         "%B"
            %C.Equate =                         "%C"
            %D.Equate =                         "%D"
            LoadPosition
            Data_Collection_Rate =              2.0
            Temperature_Compensation =          1.7
            Oven_Temperature =                  35
            Suppressor_Type =                   ASRS_4mm
            ; Carbonate =                       3.5
            ; Bicarbonate =                     1.0
            ; Hydroxide =                       0.0
            ; Tetraborate =                     0.0
            ; Other eluent =                    0.0
            ; Recommended Current =             24
            Suppressor_Current =                30
            Flow =                              1.2
            %B =                                0.0
            %C =                                0.0
            %D =                                0.0
            Curve =                             5

-2.300      Pump_Relay_1.Closed                 Duration=138.00

 0.000      ECD.Autozero
            ECD_1.AcqOn
            Pump_InjectValve.InjectPosition     Duration=30.00

11.5        ECD_1.AcqOff

            End
```

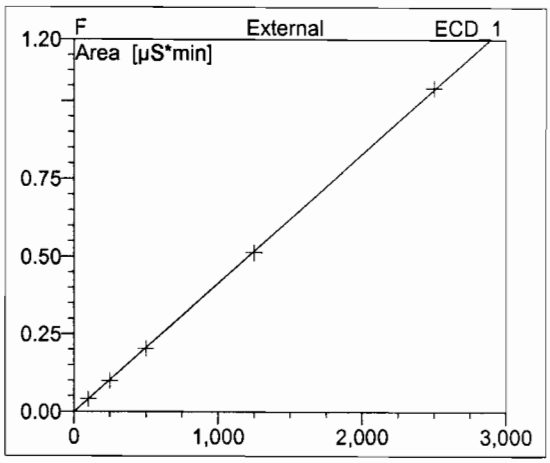
Chromeleon © Dionex Corporation, Version 6.80 Build 2212

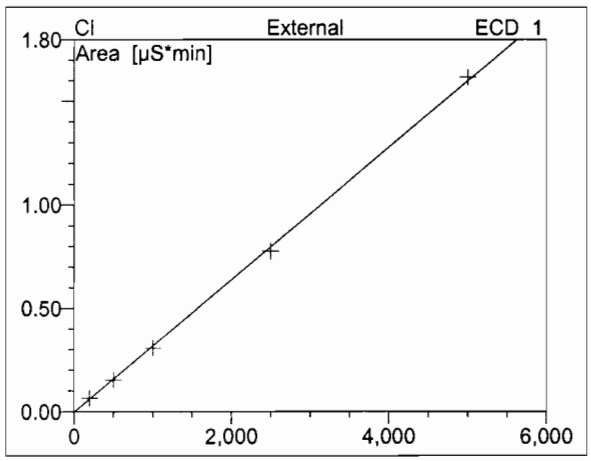
Title: STLANIONS
Datasource: SLIC03_local
Location: JACK\SEQUENCES\14NOV\111414CAL_JACK.SEQ
Timebase: JACK
Created: 12/5/2005 2:54:29 PM by chemist
Changed: 11/11/2014 2:20:15 PM by FLAKERA

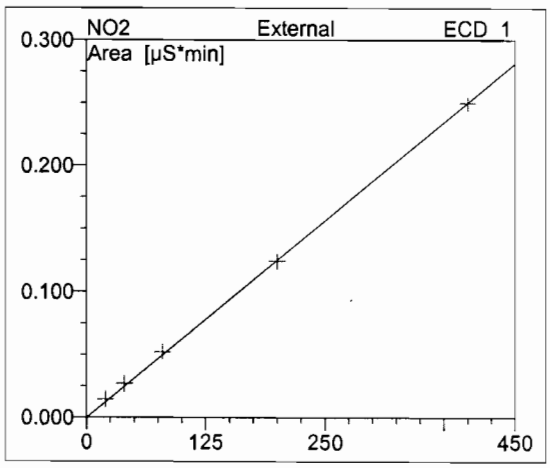
No.	Channel	Operation	Parameters

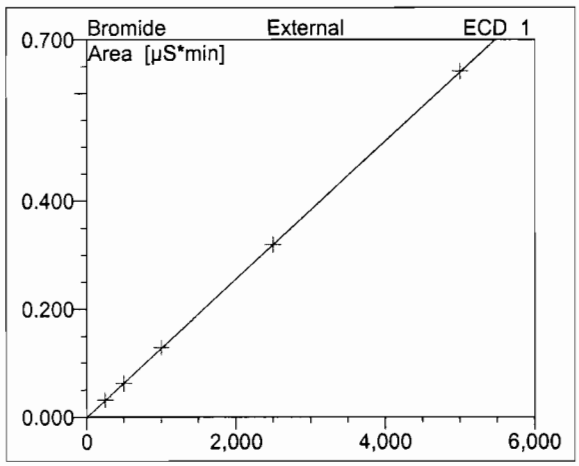
Calibration Batch Report - ECD_1

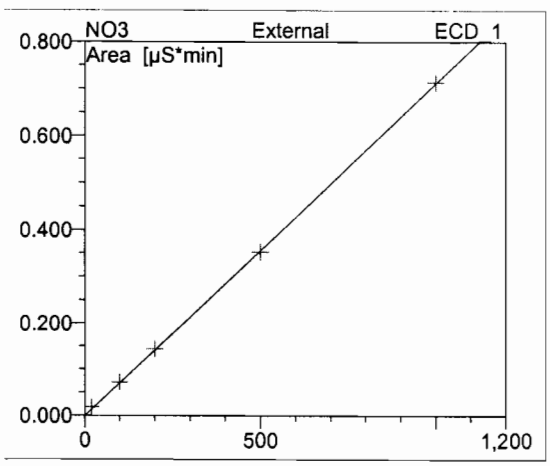
Sequence:	**111414CAL_JACK**	Inj. Vol.:	**50.0**
Program:	**SLIC03_local**	Operator:	**SLIC03**
Inj. Date/Time	**11/14/14 09:40**	Run Time:	**11.50**

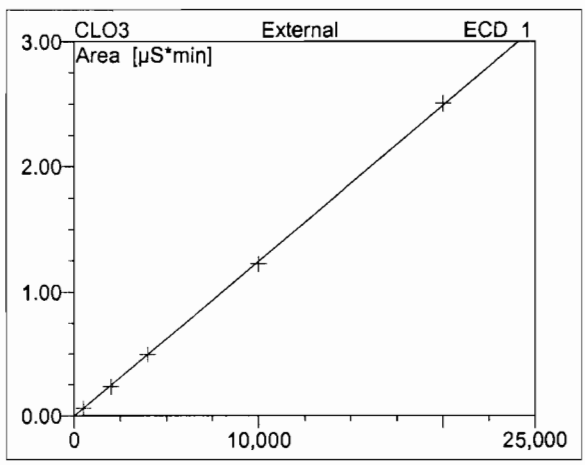


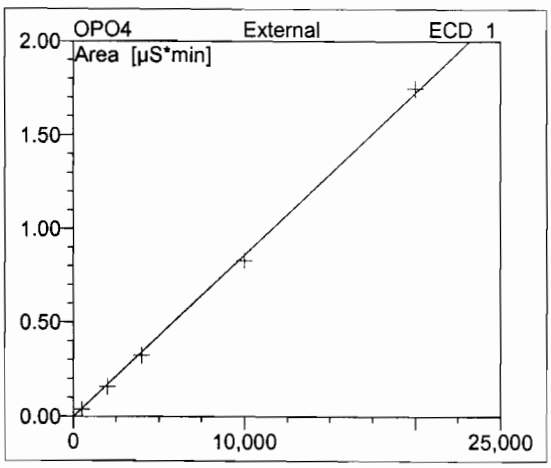


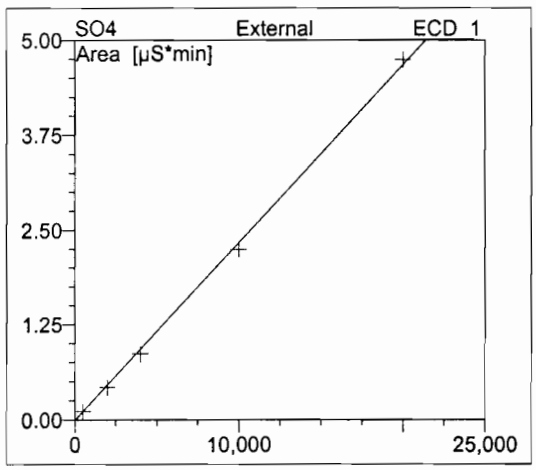












No.	Peak Name	Cal.Type	Corr.Coeff. %
1	F	Lin	99.998
2	Cl	Lin	99.980
3	NO2	Lin	99.995
4	Bromide	Lin	99.999
5	NO3	Lin	99.995
6	CLO3	Lin	99.993
7	OPO4	Lin	99.972
8	SO4	Lin	99.962

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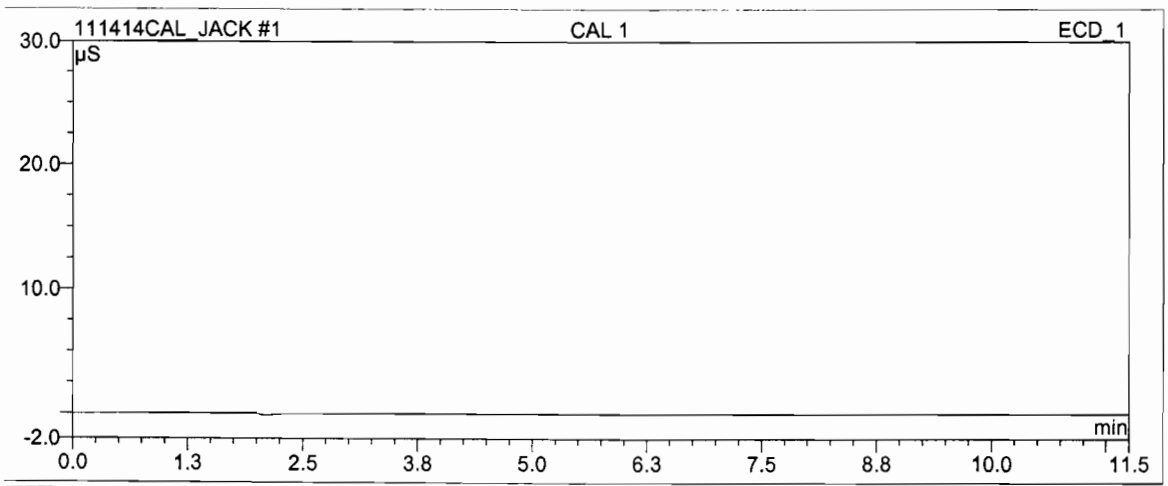
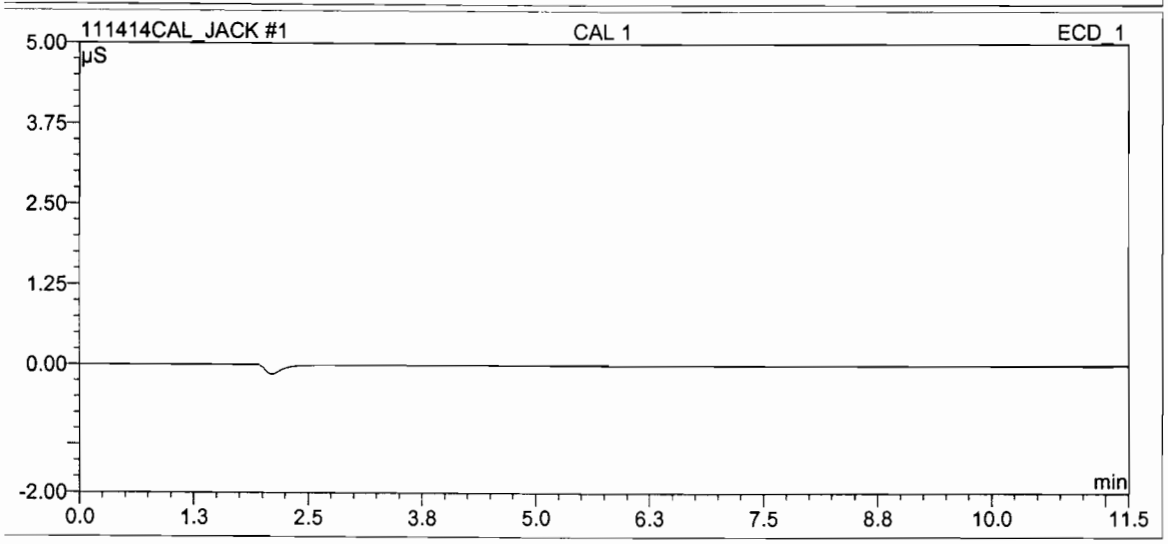
Integration Report - ECD_1

Sample Name:	**CAL 1**	*Inj. Vol.:*	**50.0**
Sample Type:	**standard**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 08:58**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
		TOTAL:		0.00	0.00	0.00

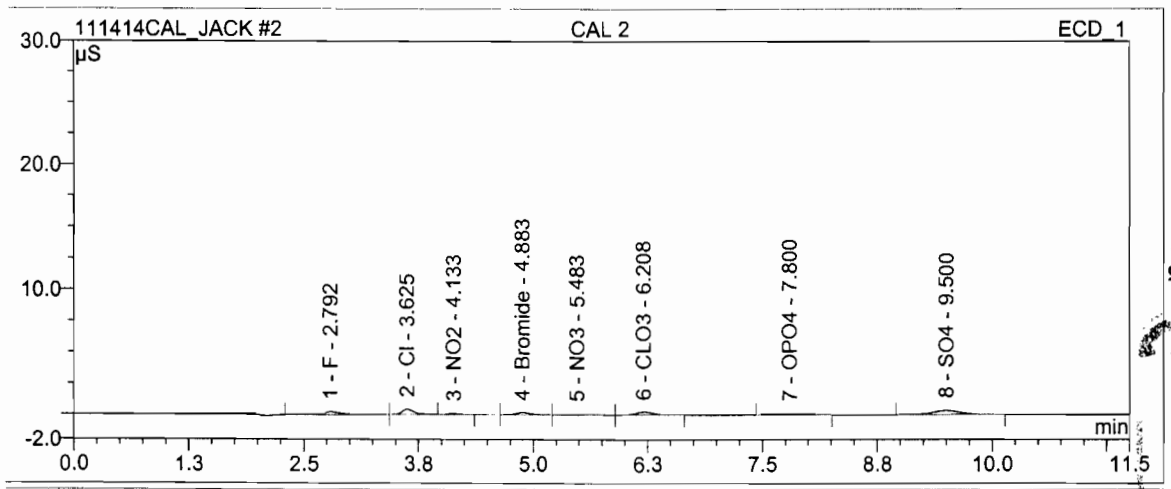


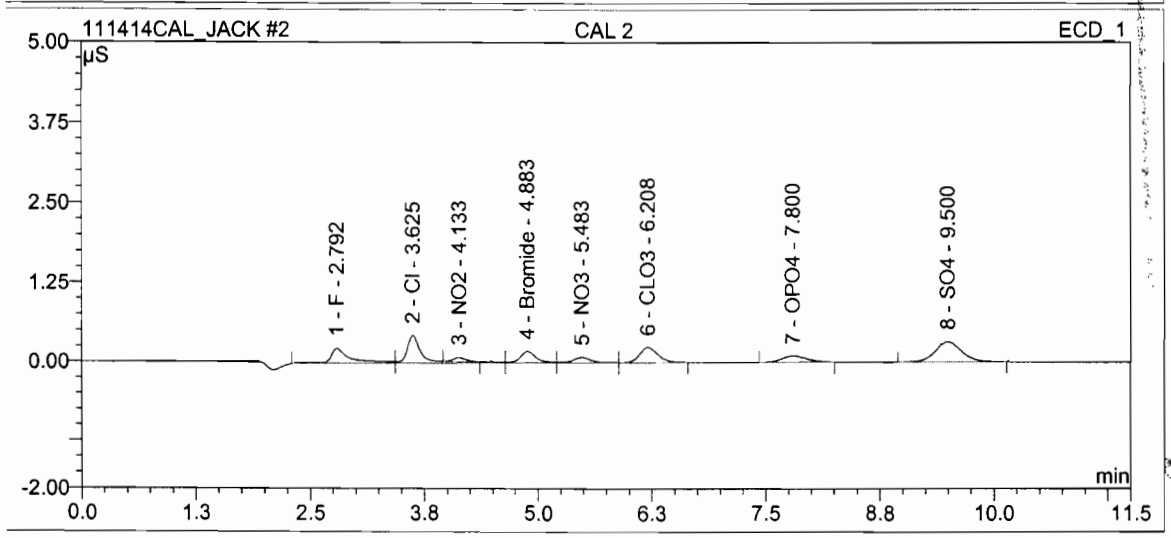


Integration Report - ECD_1

Sample Name:	**CAL 2**	*Inj. Vol.:*	**50.0**
Sample Type:	**standard**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 09:12**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.79	F	BM	0.064	0.241	154.9665
2	3.63	Cl	M	0.089	0.439	269.8235
3	4.13	NO2	Rd	0.010	0.063	21.4364
4	4.88	Bromide	M	0.038	0.184	300.6650
5	5.48	NO3	M	0.020	0.086	29.7800
6	6.21	CLO3	MB	0.057	0.242	461.7840
7	7.80	OPO4	BMB	0.031	0.099	362.9504
8	9.50	SO4	BMB	0.109	0.319	465.1658
		TOTAL:		0.42	1.67	2066.57

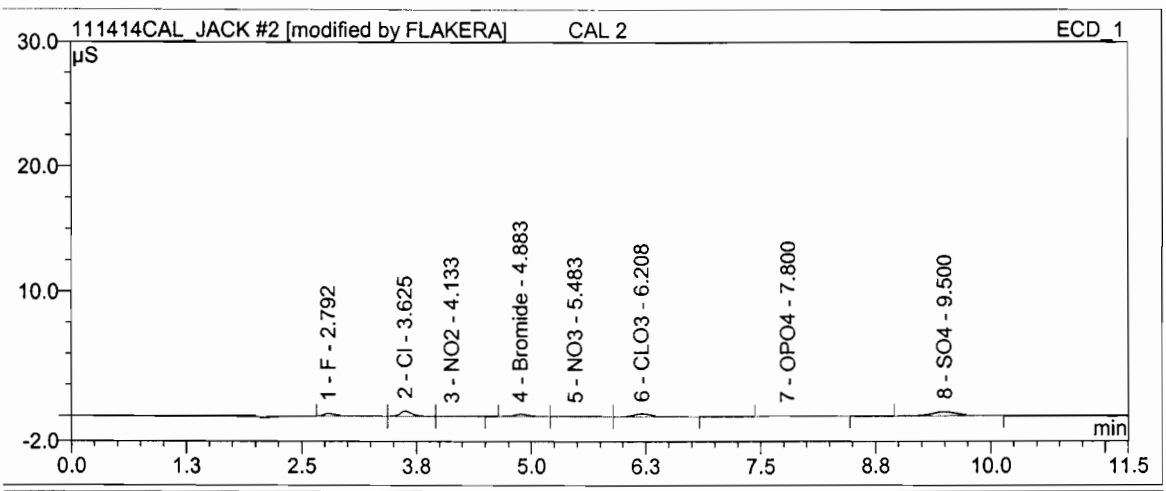


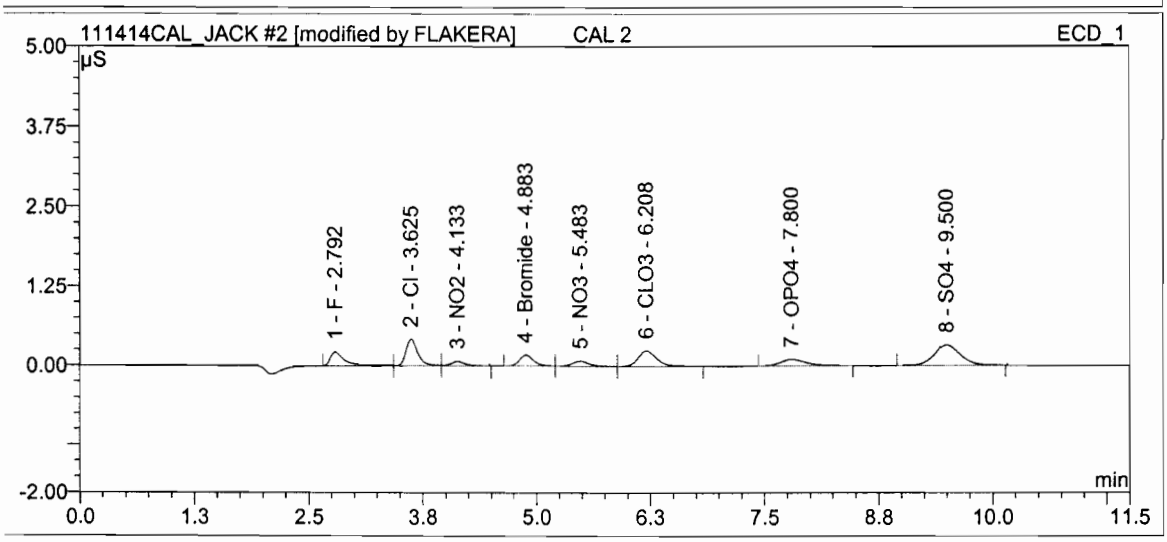


Integration Report - ECD_1

Sample Name:	**CAL 2**	*Inj. Vol.:*	**50.0**
Sample Type:	**standard**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 09:12**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.79	F	BM *	0.041	0.216	97.5549
2	3.63	Cl	M *	0.064	0.420	201.4584
3	4.13	NO2	MB*	0.015	0.072	23.2238
4	4.88	Bromide	BM *	0.032	0.174	250.3125
5	5.48	NO3	Mb*	0.018	0.081	25.0503
6	6.21	CLO3	bMB*	0.059	0.244	473.9496
7	7.80	OPO4	BMB*	0.035	0.102	403.6945
8	9.50	SO4	BMB	0.109	0.319	465.2240
		TOTAL:		0.37	1.63	1940.47

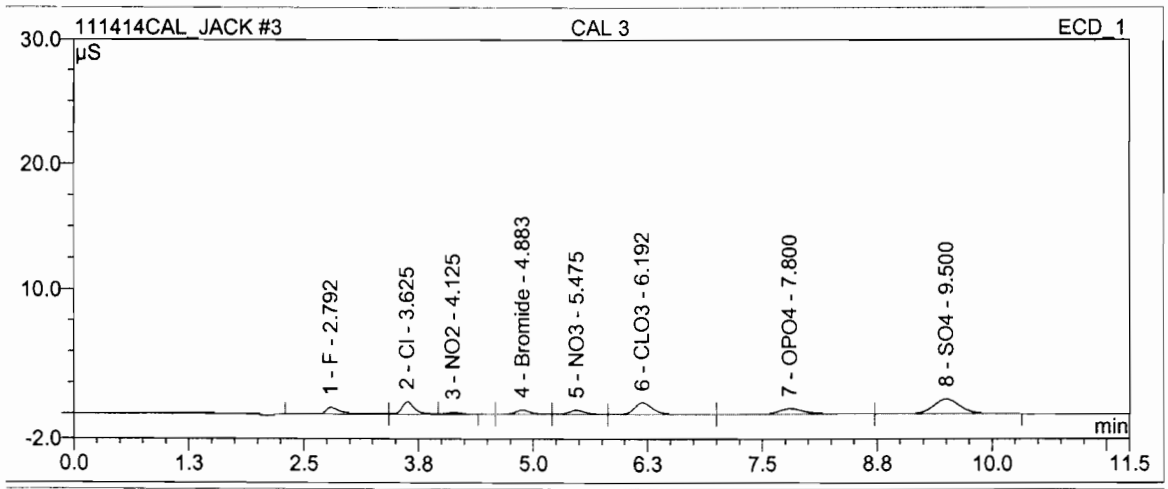


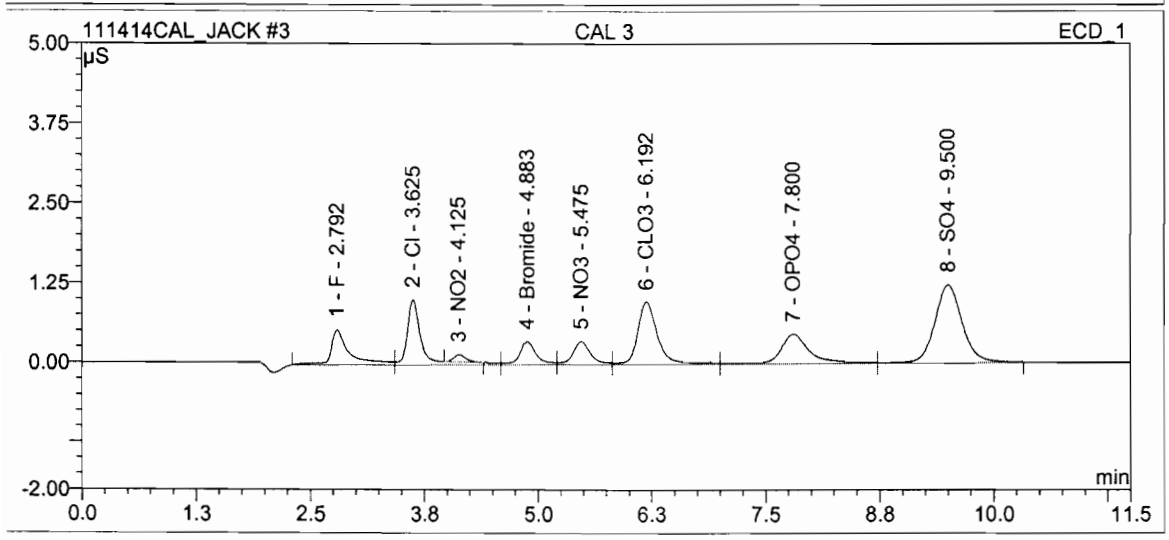


Integration Report - ECD_1

Sample Name:	**CAL 3**	*Inj. Vol.:*	**50.0**
Sample Type:	**standard**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 09:26**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.79	F	BM	0.130	0.550	312.3084
2	3.63	Cl	M	0.191	1.018	582.1326
3	4.13	NO2	Rd	0.018	0.114	37.0833
4	4.88	Bromide	M	0.077	0.361	612.2616
5	5.48	NO3	M	0.083	0.360	120.6274
6	6.19	CLO3	M	0.252	0.983	2048.6485
7	7.80	OPO4	M	0.175	0.462	2031.0739
8	9.50	SO4	MB	0.430	1.224	1838.5495
		TOTAL:		1.36	5.07	7582.69





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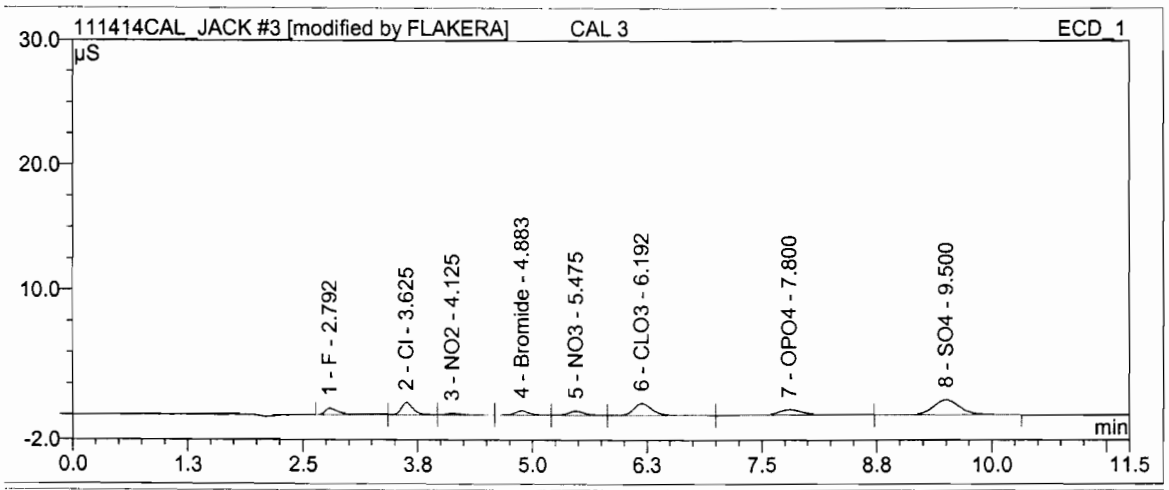
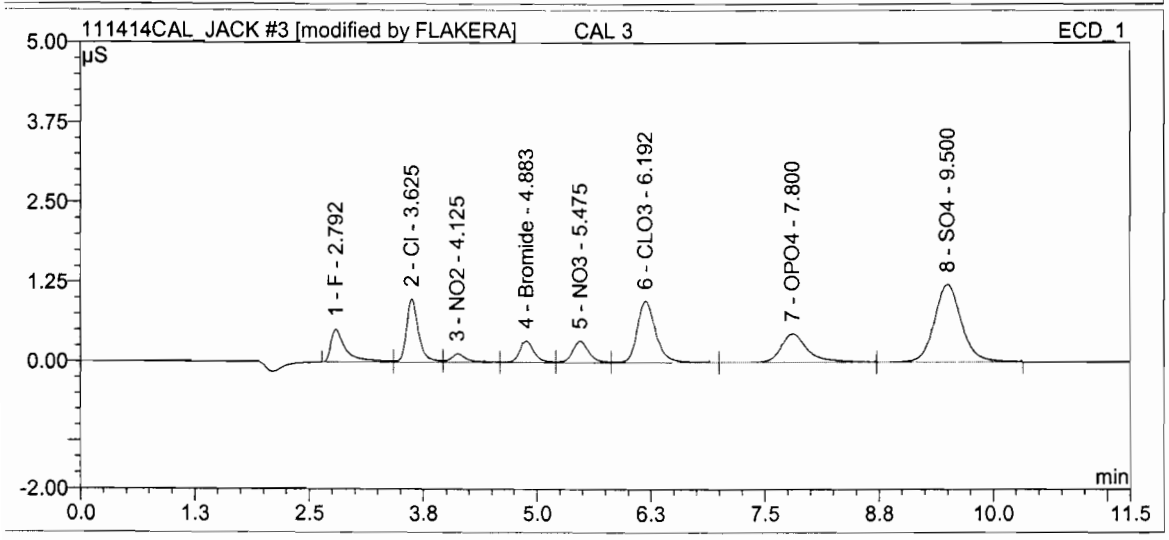
all

Integration Report - ECD_1

Sample Name:	**CAL 3**	*Inj. Vol.:*	**50.0**
Sample Type:	**standard**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 09:26**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.79	F	BM *	0.099	0.519	238.9027
2	3.63	Cl	M *	0.153	0.990	476.5923
3	4.13	NO2	M *	0.027	0.133	42.4621
4	4.88	Bromide	M *	0.063	0.338	490.5671
5	5.48	NO3	M *	0.071	0.340	99.2706
6	6.19	CLO3	M *	0.233	0.966	1874.2815
7	7.80	OPO4	M *	0.158	0.452	1832.1289
8	9.50	SO4	MB*	0.425	1.220	1816.4149
		TOTAL:		1.23	4.96	6870.62

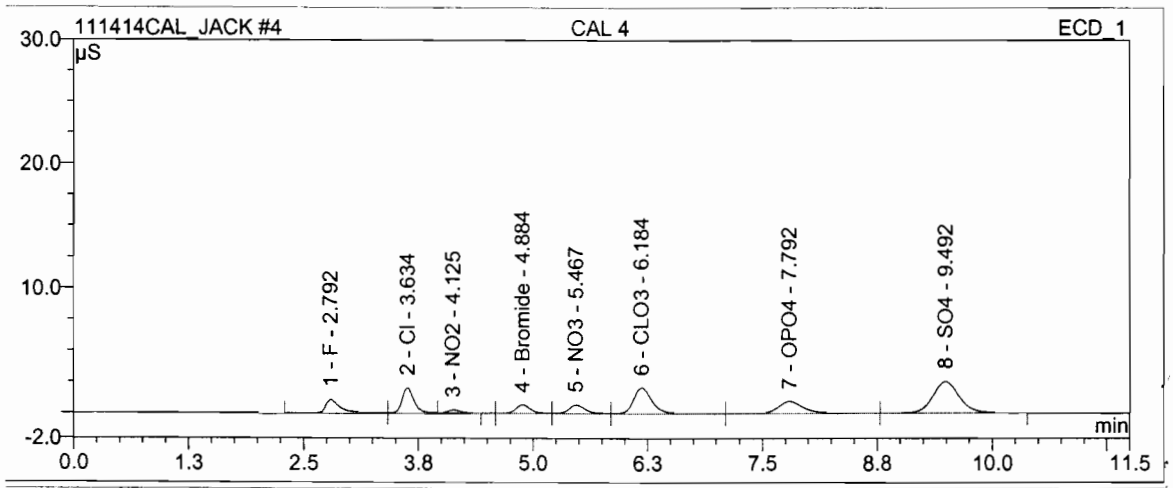


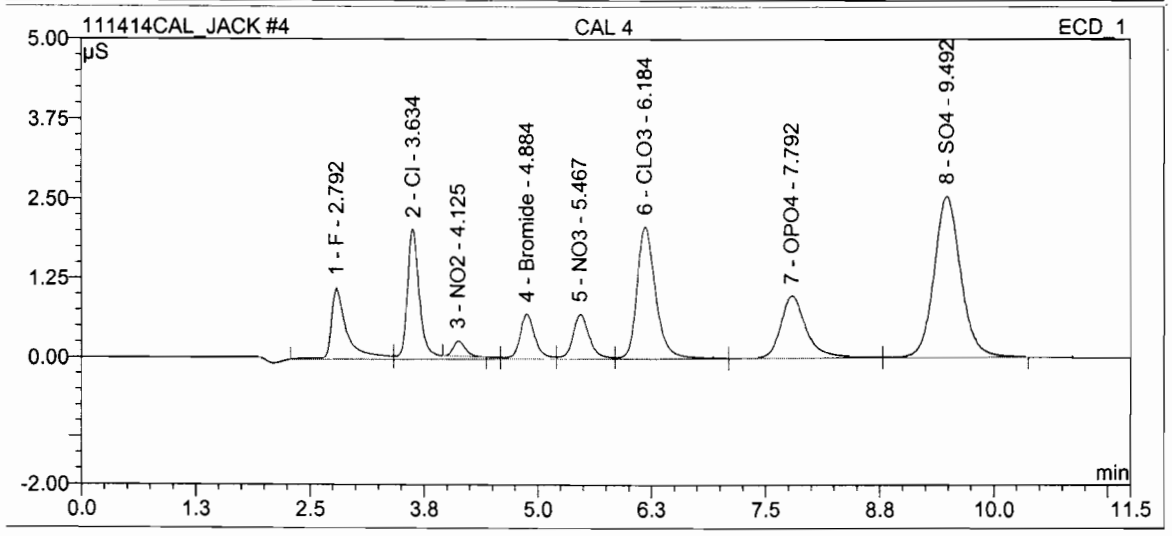


Integration Report - ECD_1

Sample Name:	**CAL 4**	*Inj. Vol.:*	**50.0**
Sample Type:	**standard**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 09:40**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.79	F	BM	0.225	1.127	541.7527
2	3.63	Cl	M	0.342	2.045	1039.4852
3	4.13	NO2	Rd	0.038	0.239	78.2676
4	4.88	Bromide	M	0.137	0.710	1095.8769
5	5.47	NO3	M	0.150	0.702	219.0471
6	6.18	CLO3	M	0.502	2.087	4074.9392
7	7.79	OPO4	M	0.327	0.982	3782.2688
8	9.49	SO4	MB	0.868	2.539	3713.3565
		TOTAL:		2.59	10.43	14544.99





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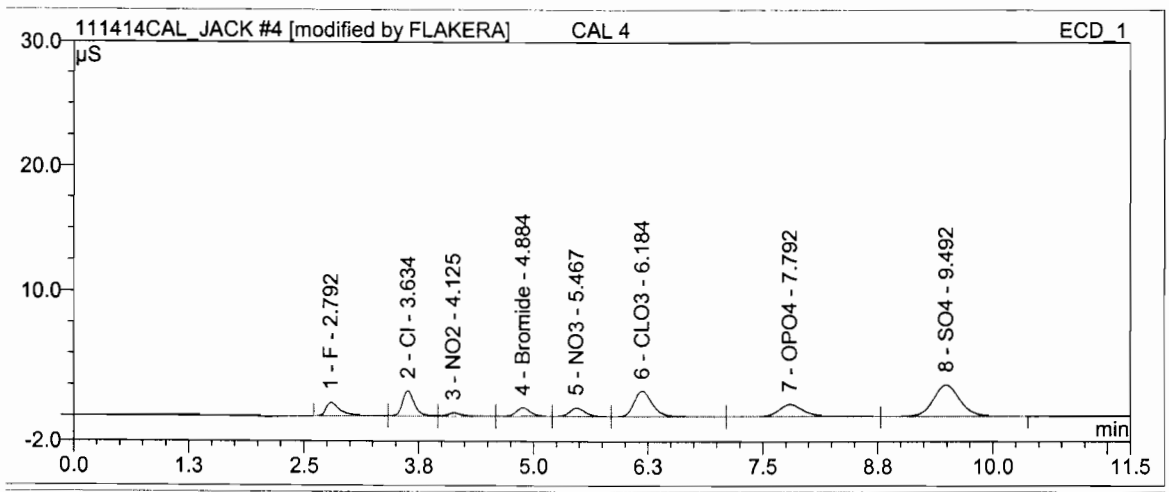
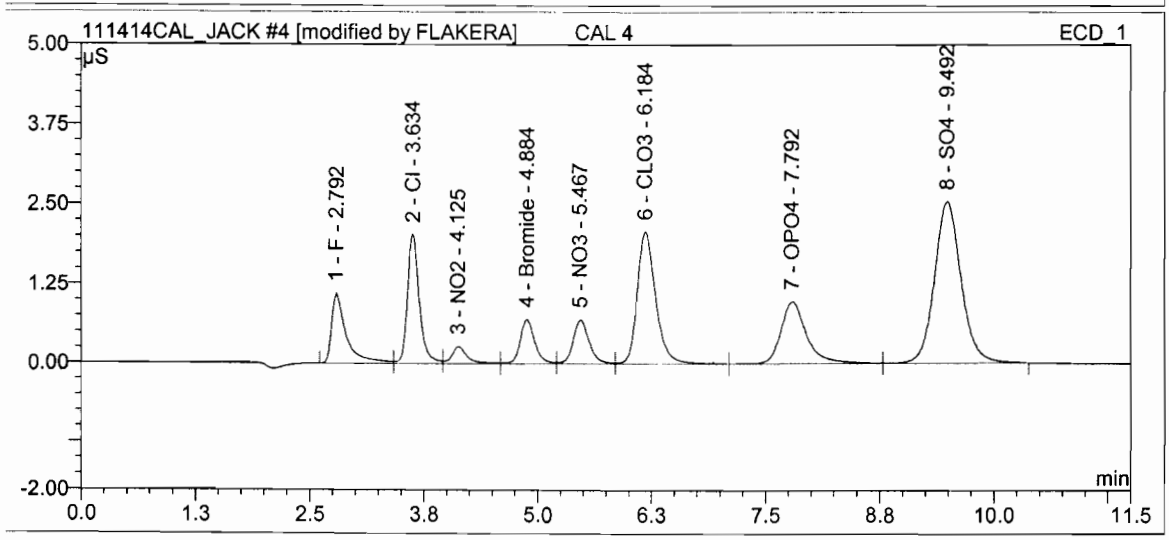
Integration Report - ECD_1

Sample Name:	**CAL 4**	*Inj. Vol.:*	**50.0**
Sample Type:	**standard**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 09:40**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.79	F	BM *	0.203	1.105	489.1775
2	3.63	Cl	M *	0.308	2.026	961.1060
3	4.13	NO2	M *	0.052	0.269	83.1120
4	4.88	Bromide	M *	0.129	0.697	1007.1940
5	5.47	NO3	M *	0.144	0.692	201.7257
6	6.18	CLO3	Mb*	0.495	2.079	3972.0351
7	7.79	OPO4	bM *	0.323	0.979	3742.0953
8	9.49	SO4	MB*	0.867	2.538	3708.7362
		TOTAL:		2.52	10.39	14165.18

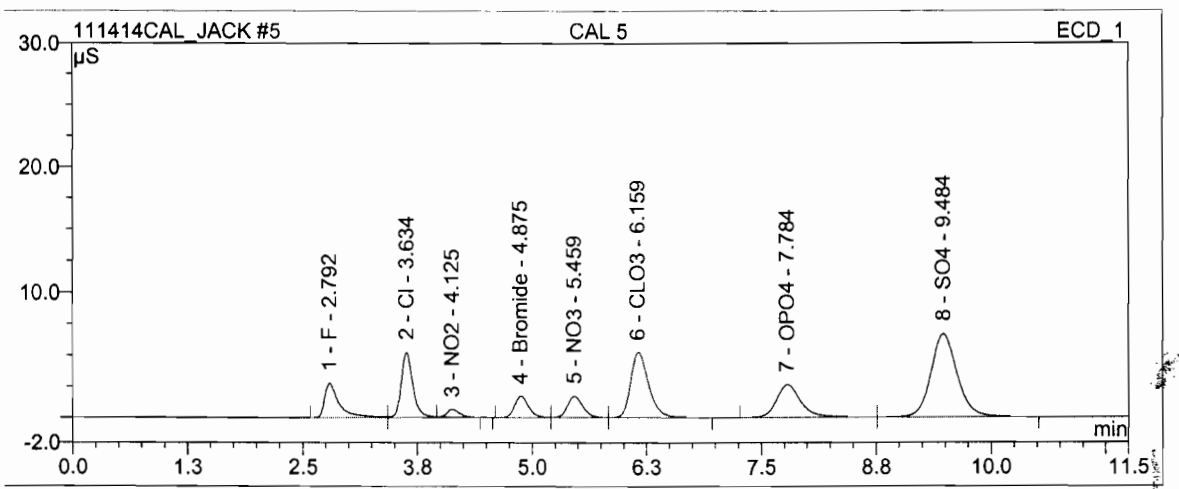


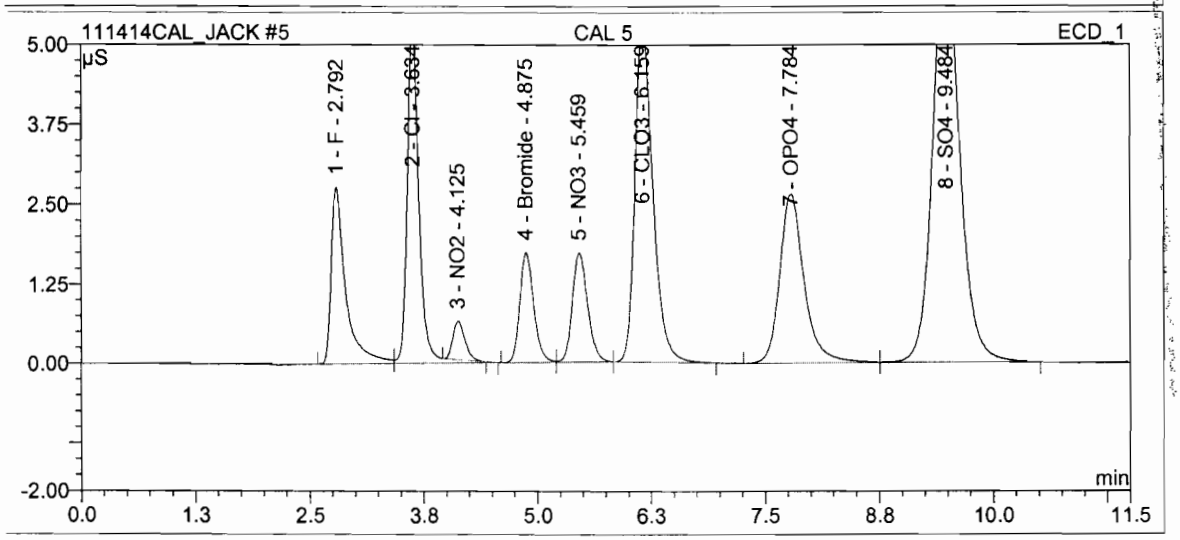


Integration Report - ECD_1

Sample Name:	**CAL 5**	*Inj. Vol.:*	**50.0**
Sample Type:	**standard**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 09:54**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.79	F	BM	0.511	2.769	1227.8269
2	3.63	Cl	MB	0.792	5.250	2409.6675
3	4.13	NO2	Rd	0.095	0.607	197.5217
4	4.88	Bromide	BM	0.308	1.736	2462.9995
5	5.46	NO3	Mb	0.337	1.726	491.4665
6	6.16	CLO3	bMB	1.207	5.253	9802.1573
7	7.78	OPO4	BM	0.830	2.654	9613.2696
8	9.48	SO4	MB	2.243	6.684	9593.0847
		TOTAL:		6.32	26.68	35797.99

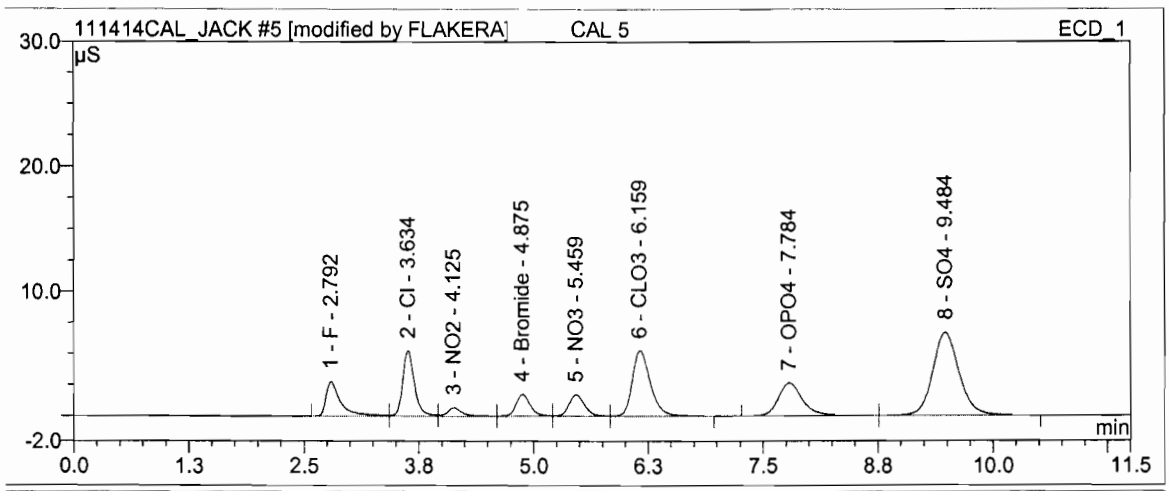


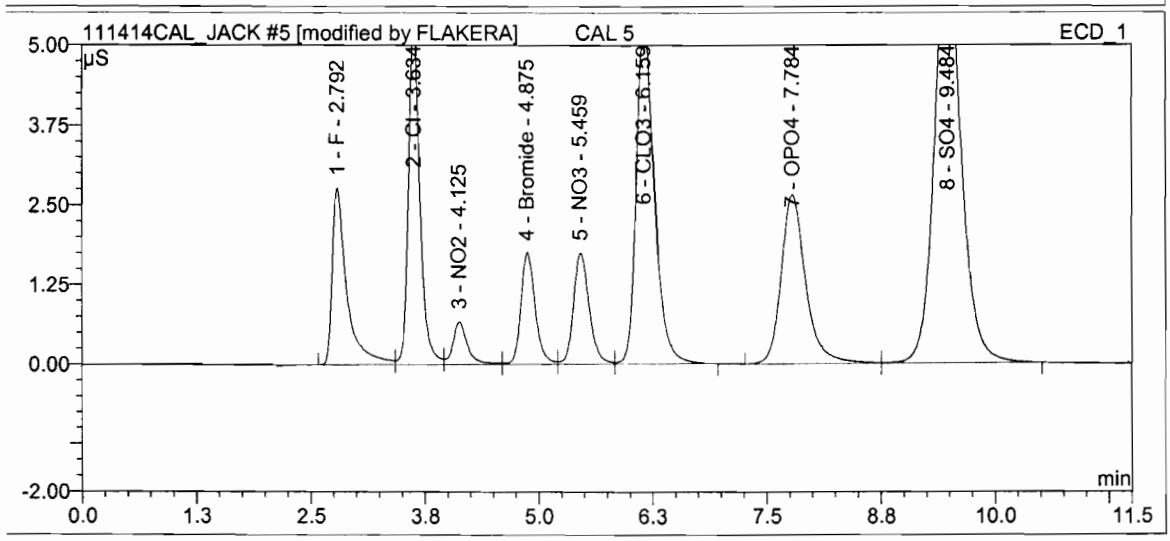


Integration Report - ECD_1

Sample Name:	**CAL 5**	*Inj. Vol.:*	**50.0**
Sample Type:	**standard**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 09:54**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.79	F	BM *	0.514	2.771	1237.1922
2	3.63	Cl	M *	0.777	5.258	2426.6495
3	4.13	NO2	M *	0.124	0.669	198.2910
4	4.88	Bromide	M *	0.319	1.754	2491.5014
5	5.46	NO3	M *	0.352	1.750	494.7860
6	6.16	CLO3	MB*	1.223	5.273	9823.1009
7	7.78	OPO4	BM	0.830	2.654	9623.5994
8	9.48	SO4	MB	2.243	6.684	9594.2845
		TOTAL:		6.38	26.81	35889.40

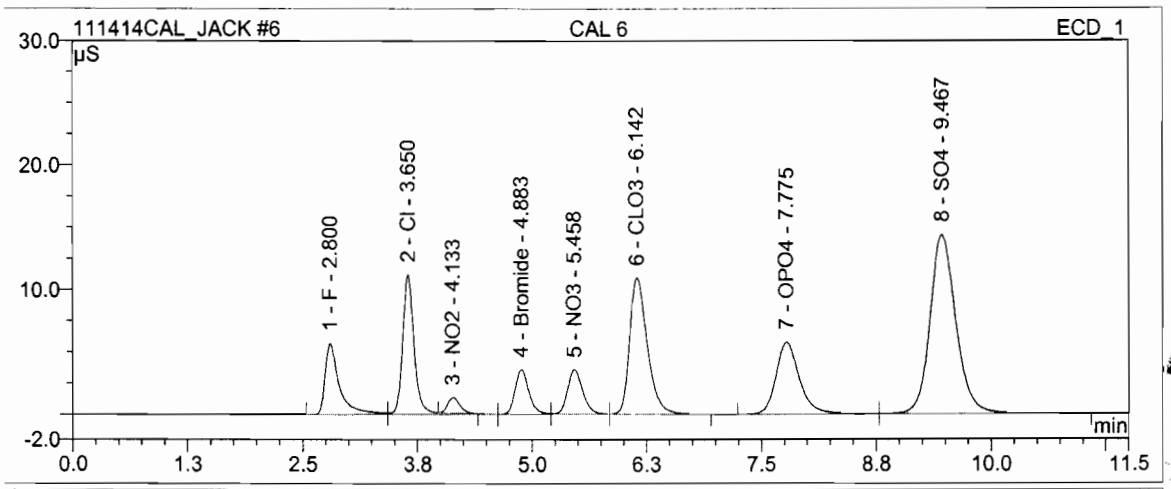


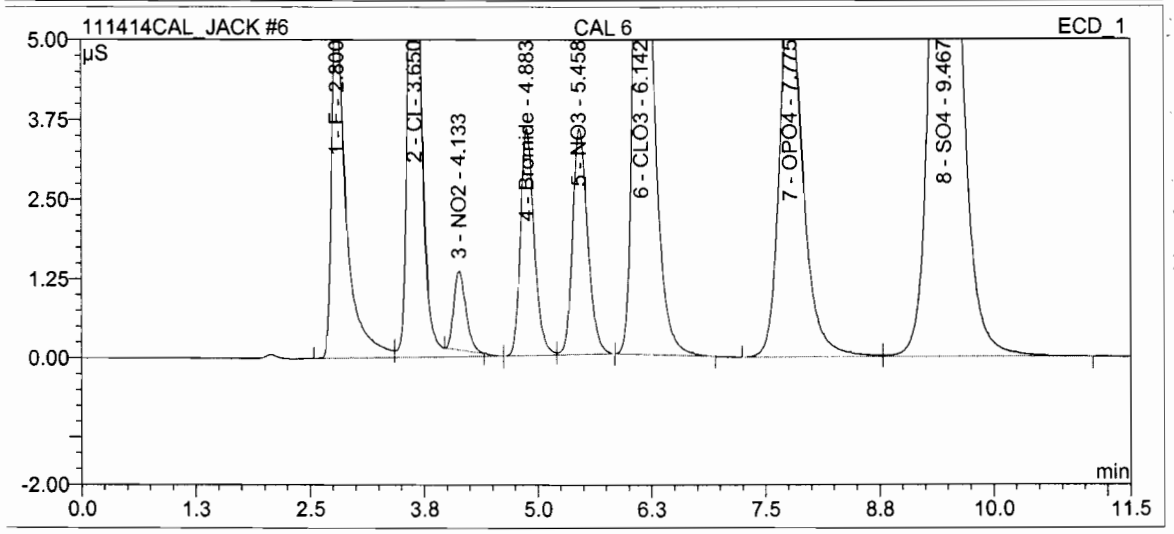


Integration Report - ECD_1

Sample Name:	**CAL 6**	*Inj. Vol.:*	**50.0**
Sample Type:	**standard**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 10:08**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BM	1.038	5.693	2494.3065
2	3.65	Cl	MB	1.652	11.237	5026.2630
3	4.13	NO2	Rd	0.193	1.251	401.8055
4	4.88	Bromide	bM	0.623	3.578	4985.5654
5	5.46	NO3	Mb	0.684	3.559	998.1990
6	6.14	CLO3	bMB	2.473	10.944	20080.0240
7	7.78	OPO4	BM	1.748	5.799	20237.2303
8	9.47	SO4	MB	4.742	14.370	20277.8023
		TOTAL:		13.15	56.43	74501.20





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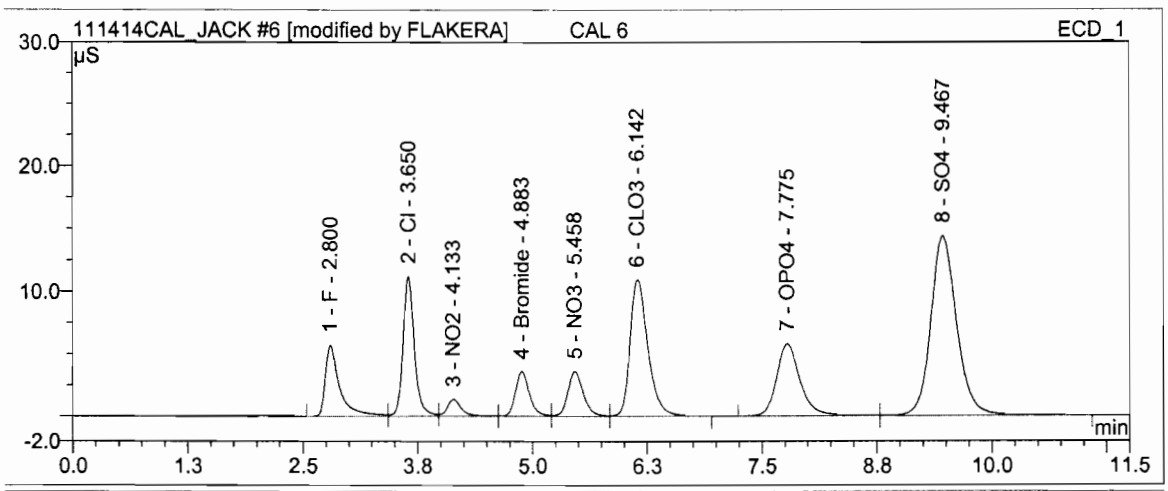
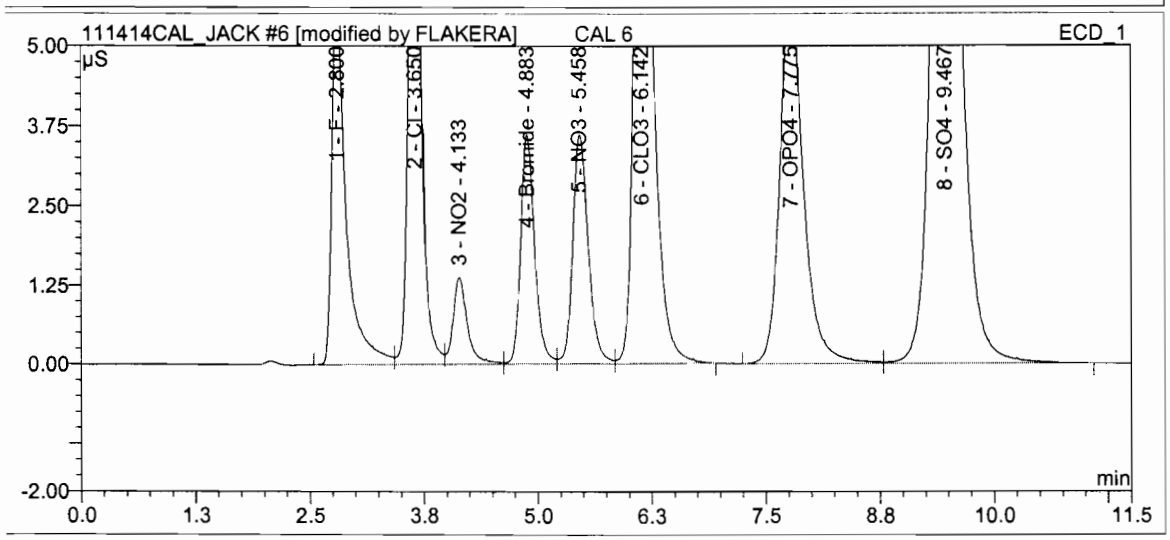
all but OPO4, SO4

Integration Report - ECD_1

Sample Name:	**CAL 6**	*Inj. Vol.:*	**50.0**
Sample Type:	**standard**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 10:08**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BM *	1.042	5.696	2509.7759
2	3.65	Cl	M *	1.615	11.249	5046.7364
3	4.13	NO2	M *	0.250	1.375	399.8247
4	4.88	Bromide	M *	0.641	3.608	5003.7382
5	5.46	NO3	M *	0.714	3.604	1002.2338
6	6.14	CLO3	MB*	2.503	10.984	20107.2656
7	7.78	OPO4	BM	1.748	5.799	20258.9760
8	9.47	SO4	MB	4.742	14.370	20280.3384
		TOTAL:		13.26	56.69	74608.89

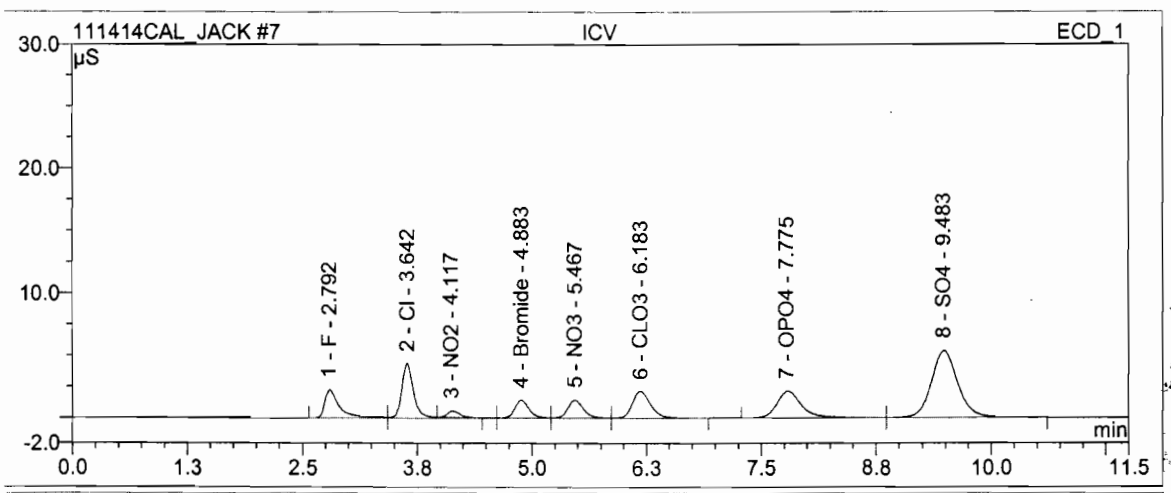


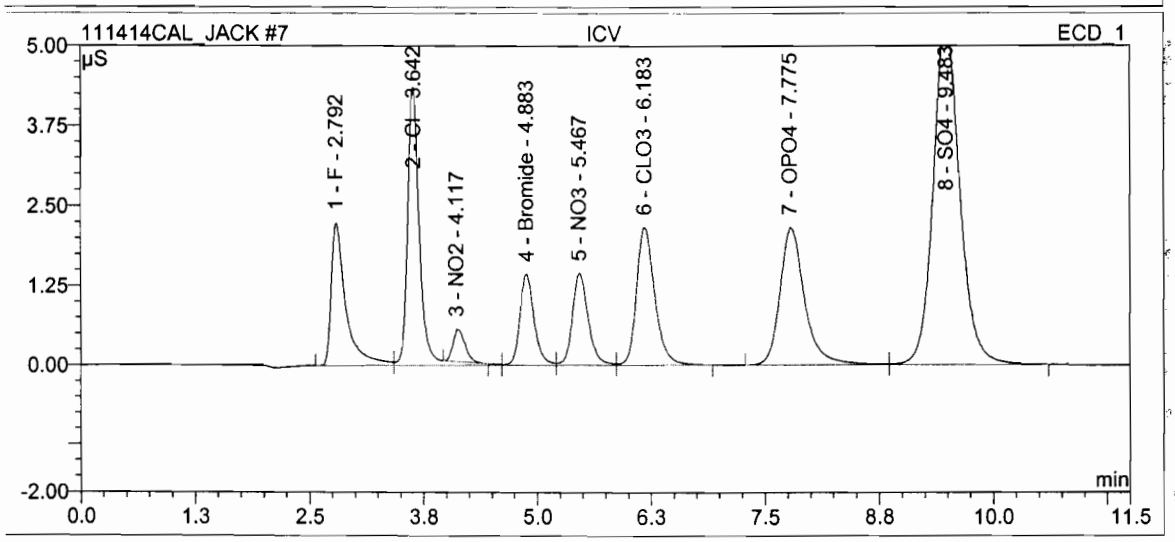


Integration Report - ECD_1

Sample Name:	**ICV**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 10:22**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.79	F	BM	0.418	2.243	1005.8126
2	3.64	Cl	M	0.671	4.352	2096.5211
3	4.12	NO2	Rd	0.079	0.511	126.4242
4	4.88	Bromide	M	0.262	1.440	2044.3875
5	5.47	NO3	M	0.295	1.450	413.9328
6	6.18	CLO3	MB	0.510	2.168	4095.7235
7	7.78	OPO4	BM	0.686	2.167	7953.1744
8	9.48	SO4	MB	1.816	5.392	7766.5395
		TOTAL:		4.74	19.72	25502.52





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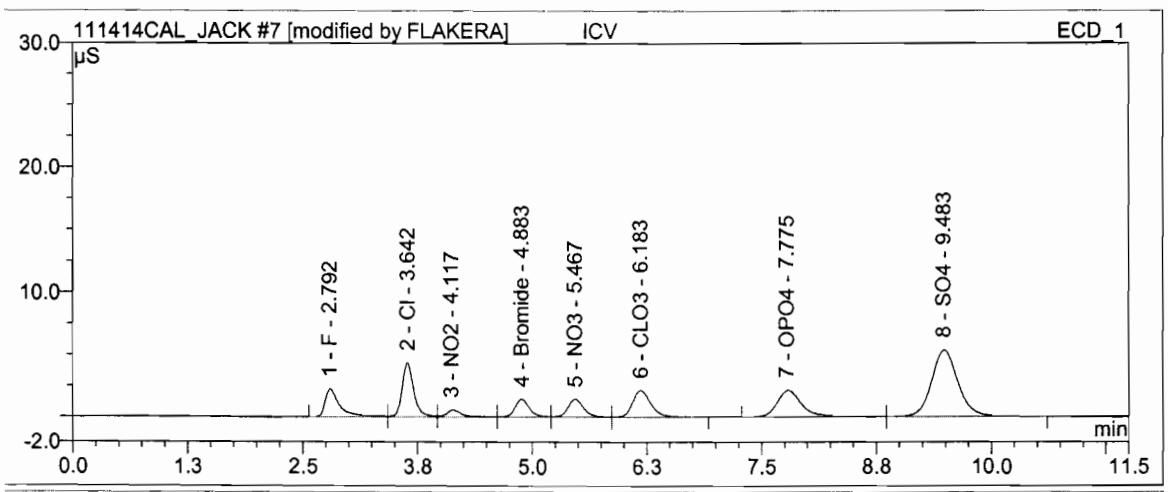
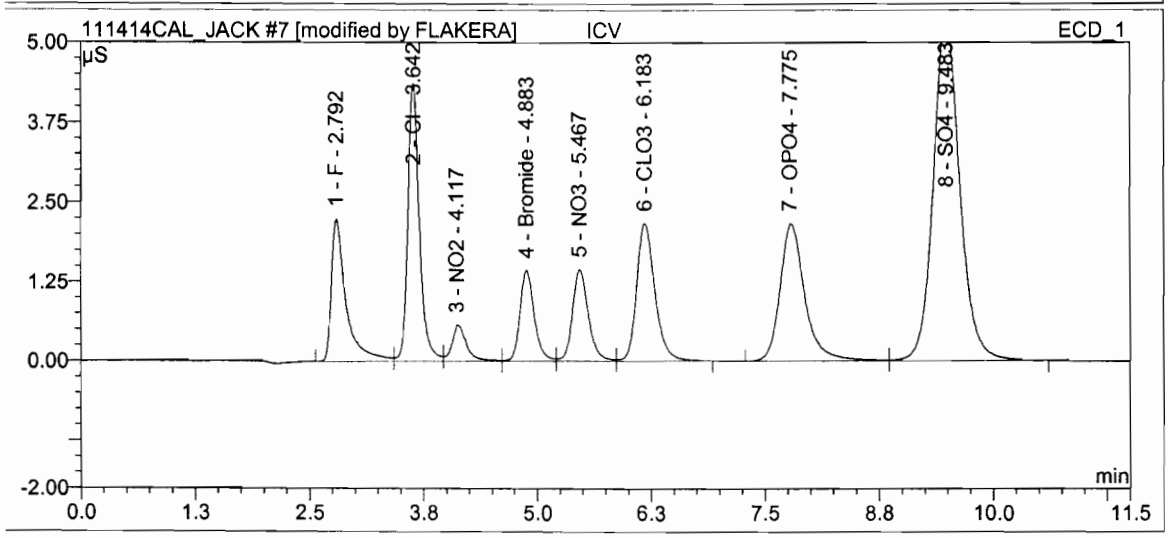
Integration Report - ECD_1

Sample Name:	**ICV**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 10:22**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.79	F	BM	0.418	2.243	1005.8126
2	3.64	Cl	M *	0.644	4.352	2011.1886
3	4.12	NO2	M *	0.106	0.570	170.0521
4	4.88	Bromide	M	0.262	1.440	2044.3875
5	5.47	NO3	M	0.295	1.450	413.9328
6	6.18	CLO3	MB	0.510	2.168	4095.7235
7	7.78	OPO4	BM	0.686	2.167	7953.1744
8	9.48	SO4	MB	1.816	5.392	7766.5395
		TOTAL:		4.74	19.78	25460.81

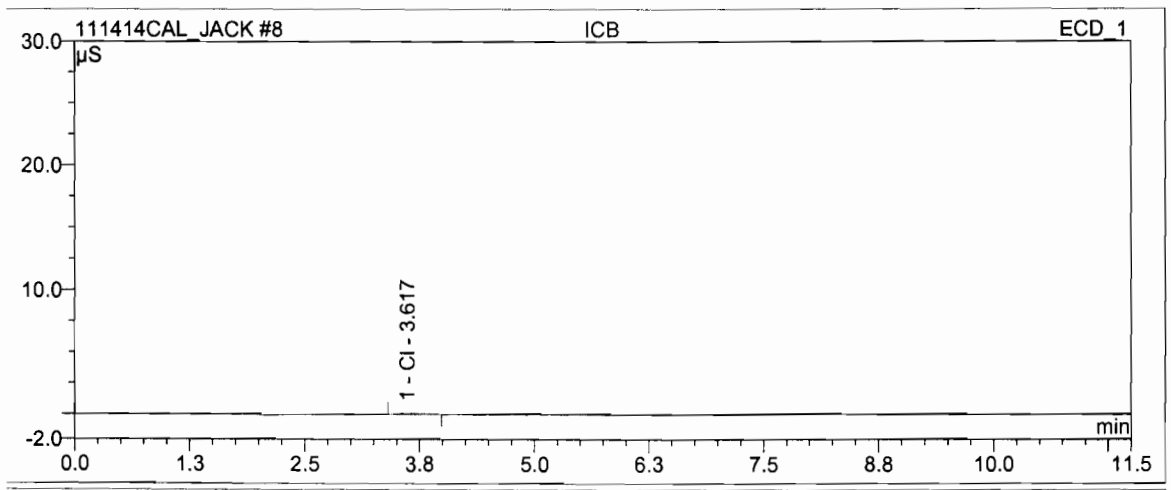


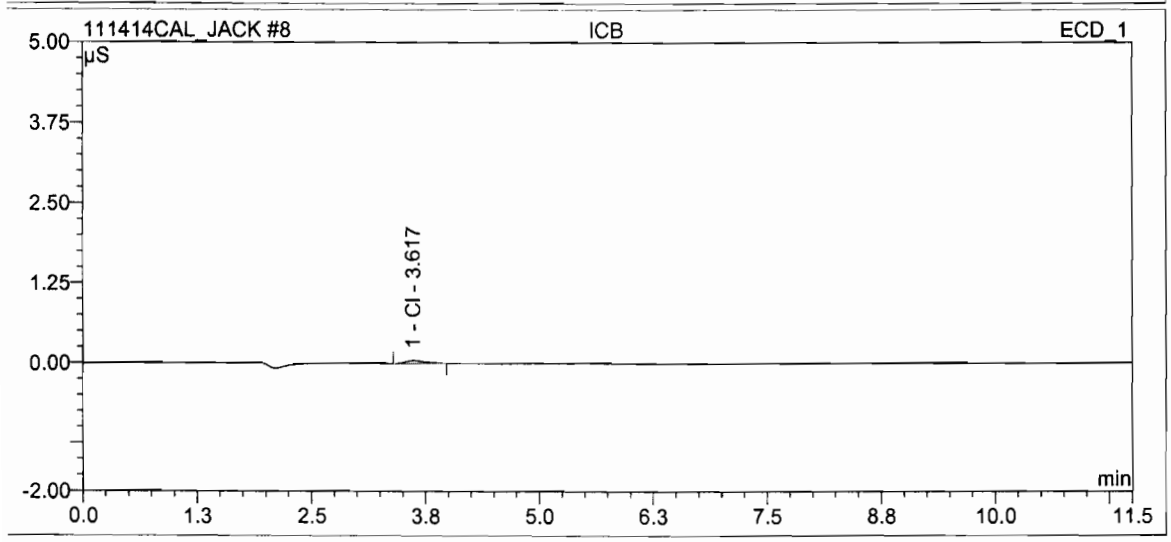


Integration Report - ECD_1

Sample Name:	**ICB**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 10:36**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	3.62	Cl	BMB	0.012	0.047	36.1531
		TOTAL:		0.01	0.05	36.15

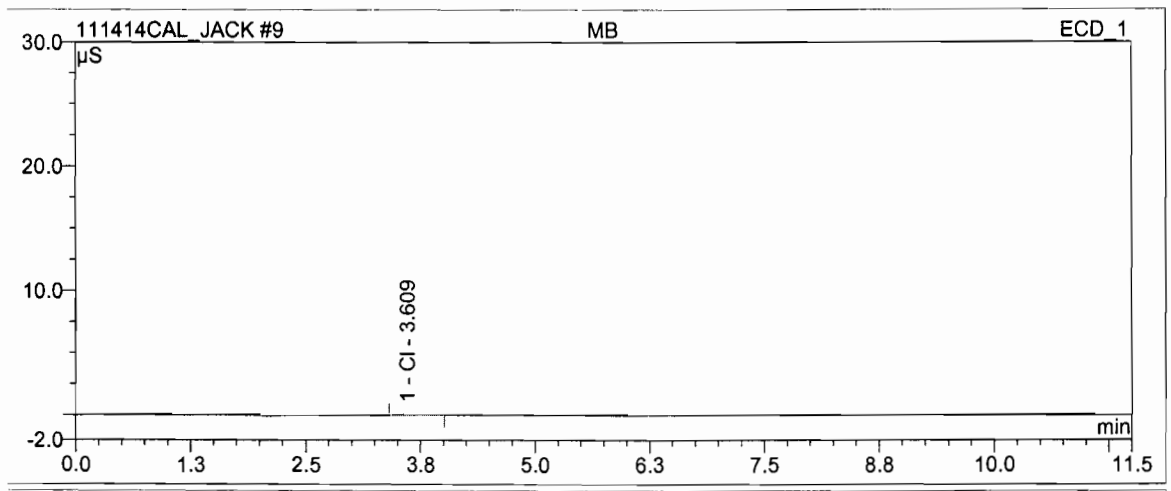


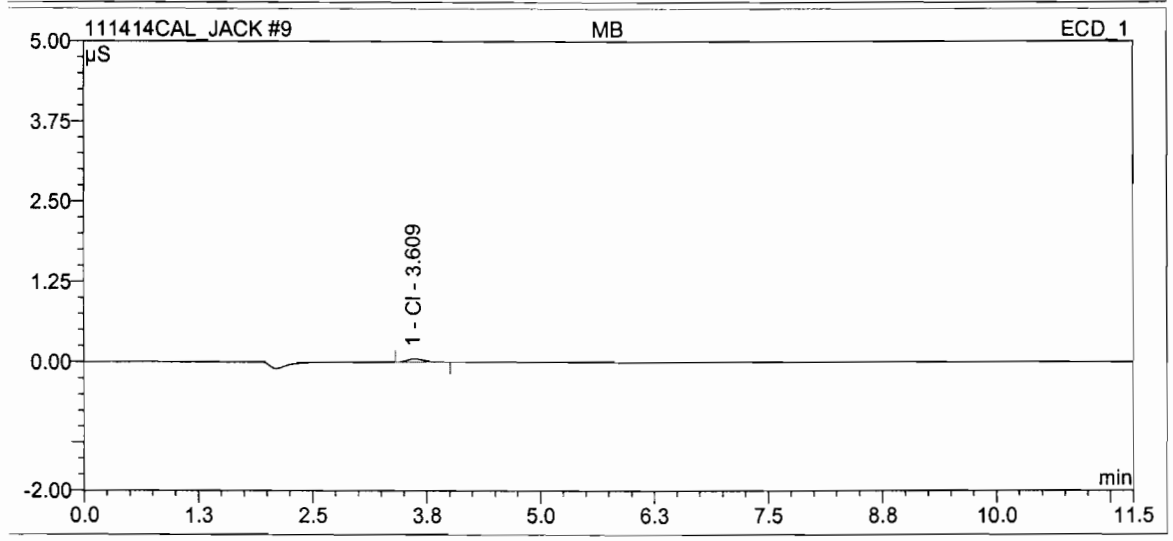


Integration Report - ECD_1

Sample Name:	**MB**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 10:50**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	3.61	Cl	BMB	0.012	0.051	36.7392
		TOTAL:		0.01	0.05	36.74

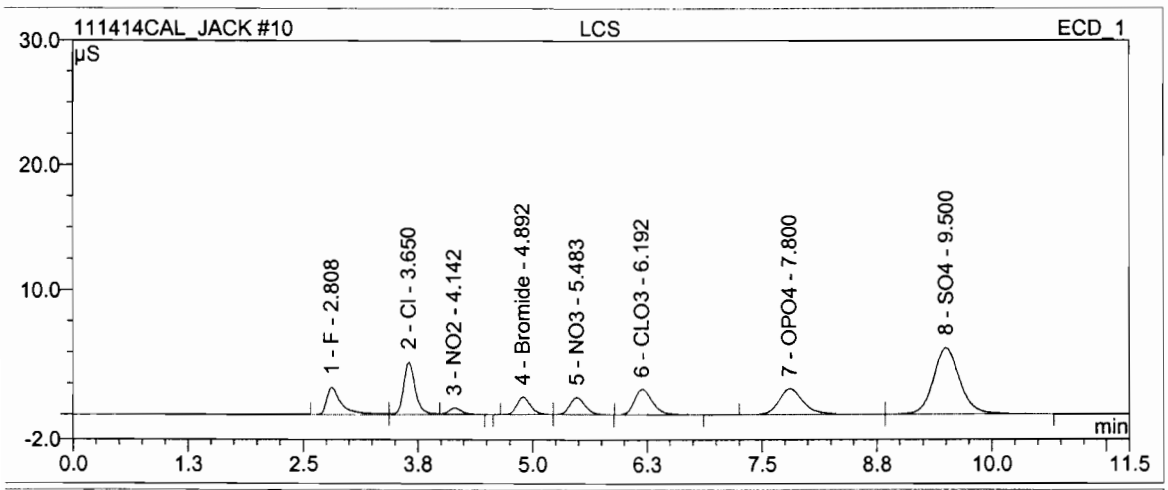


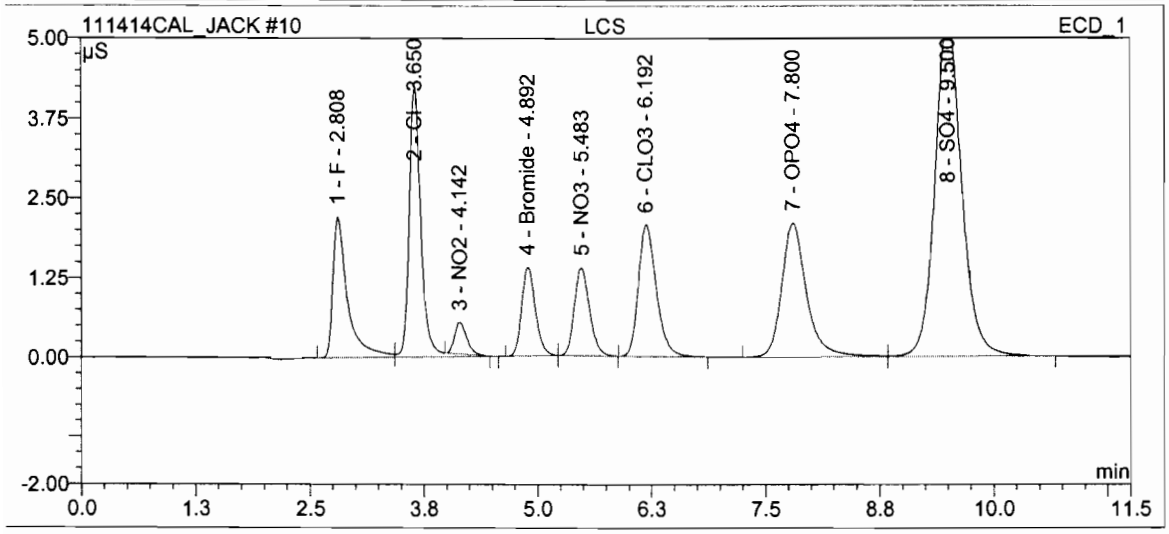


Integration Report - ECD_1

Sample Name:	**LCS**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 11:03**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.81	F	BM	0.412	2.206	991.4494
2	3.65	Cl	MB	0.644	4.256	2011.3762
3	4.14	NO2	Rd	0.077	0.494	122.8340
4	4.89	Bromide	BMb	0.245	1.399	1911.8701
5	5.48	NO3	bMB	0.268	1.382	376.9883
6	6.19	CLO3	BMB	0.477	2.066	3829.0355
7	7.80	OPO4	BM	0.671	2.108	7780.3667
8	9.50	SO4	MB	1.804	5.337	7715.5061
		TOTAL:		4.60	19.25	24739.43





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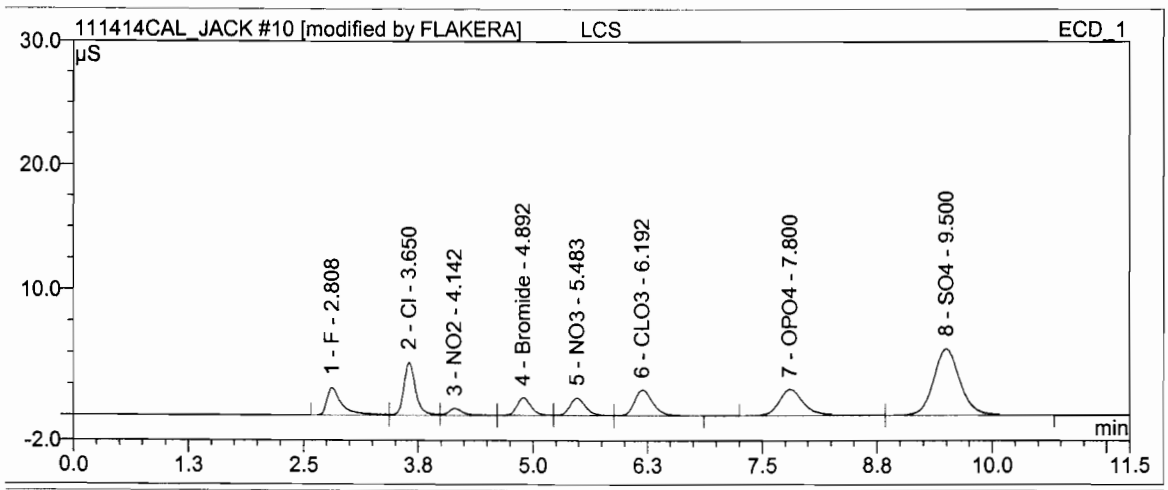
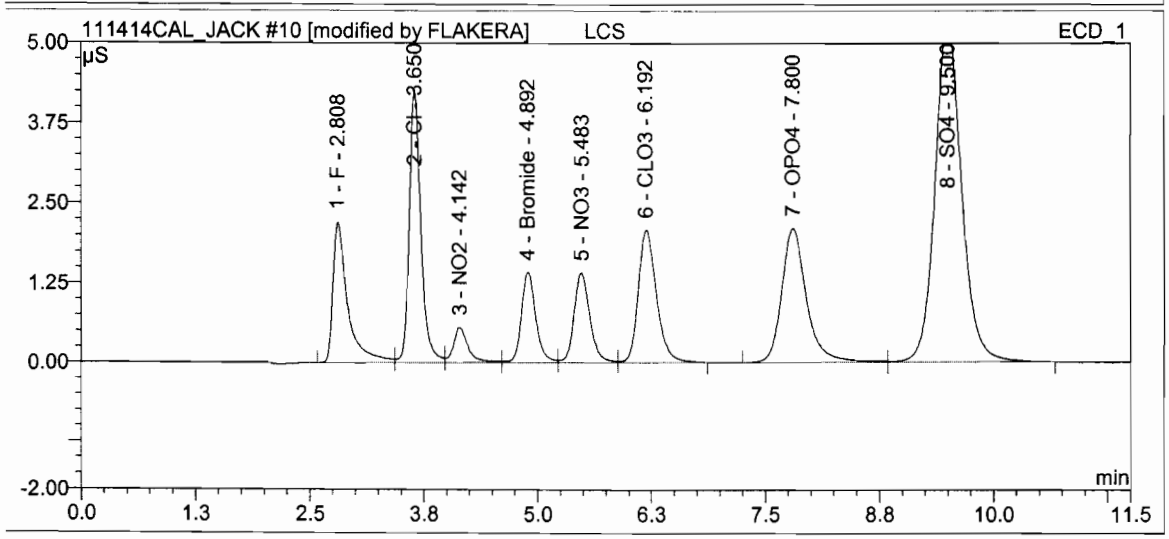
Integration Report - ECD_1

Sample Name:	**LCS**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 11:03**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.81	F	BM *	0.415	2.208	999.1989
2	3.65	Cl	M *	0.632	4.265	1976.1039
3	4.14	NO2	M *	0.103	0.550	164.9155
4	4.89	Bromide	M *	0.260	1.423	2032.3639
5	5.48	NO3	M *	0.286	1.411	402.0025
6	6.19	CLO3	MB*	0.487	2.080	3910.0278
7	7.80	OPO4	BM	0.671	2.108	7780.3667
8	9.50	SO4	MB	1.804	5.337	7715.5061
		TOTAL:		4.66	19.38	24980.49

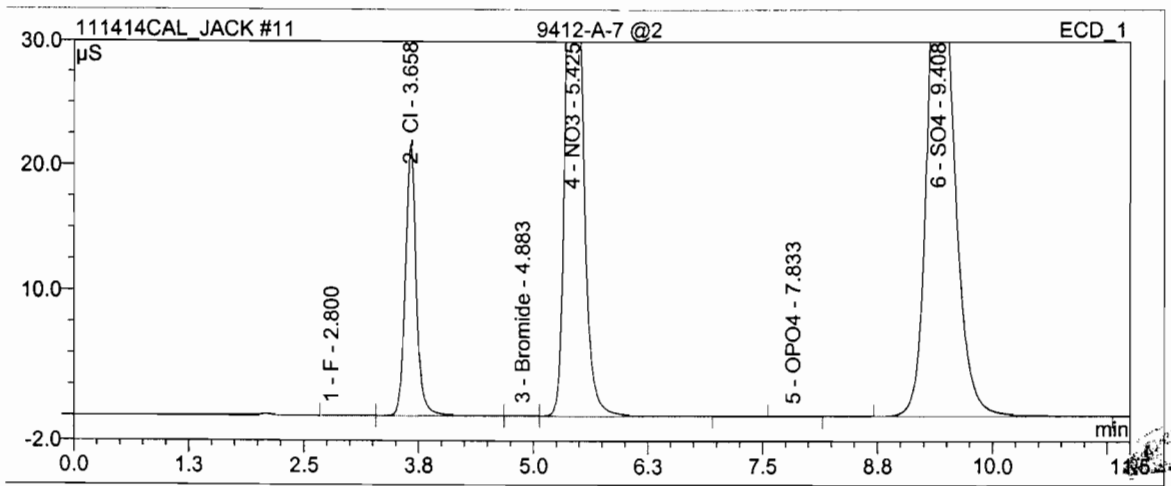


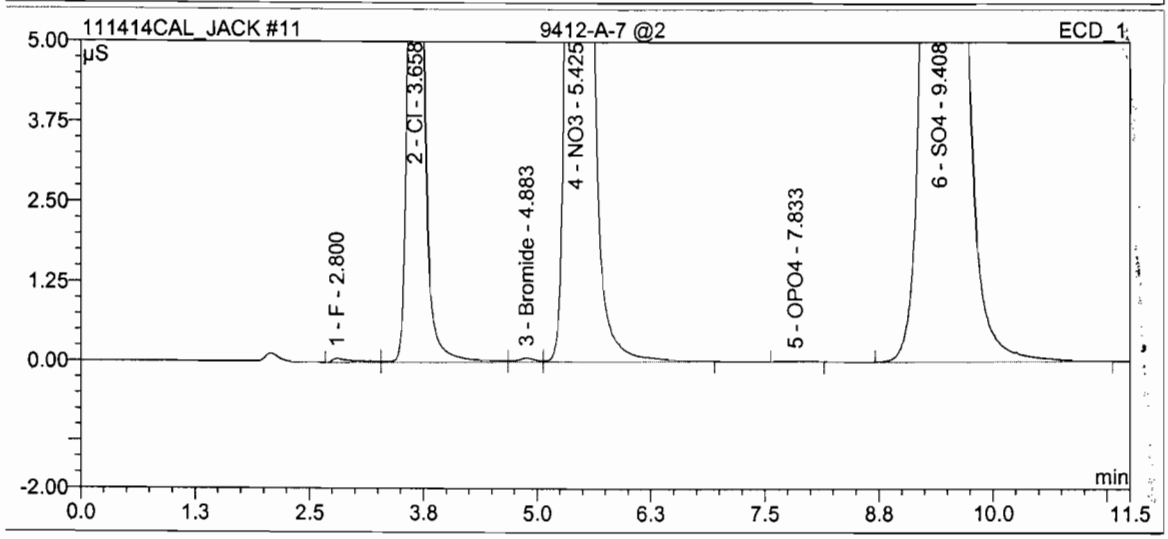


Integration Report - ECD_1

Sample Name:	**9412-A-7 @2**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 11:17**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BM	0.019	0.066	45.9555
2	3.66	Cl	M	3.014	21.716	9420.2361
3	4.88	Bromide	M	0.014	0.064	112.7655
4	5.43	NO3	MB	10.821	57.543	15199.8523
5	7.83	OPO4	BMB	0.006	0.019	70.1378
6	9.41	SO4	BMB	13.863	42.767	59295.4272
		TOTAL:		27.74	122.18	84144.37





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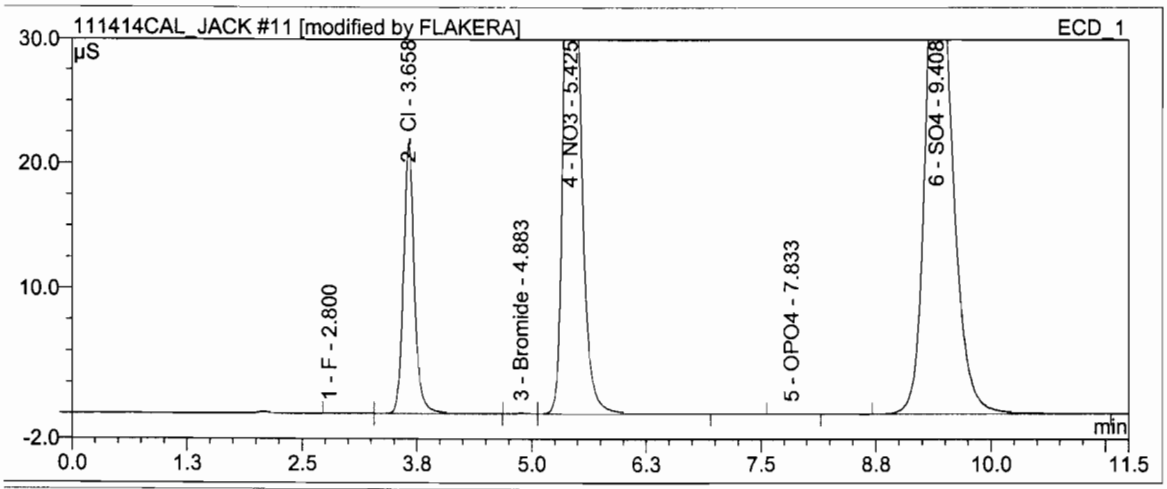
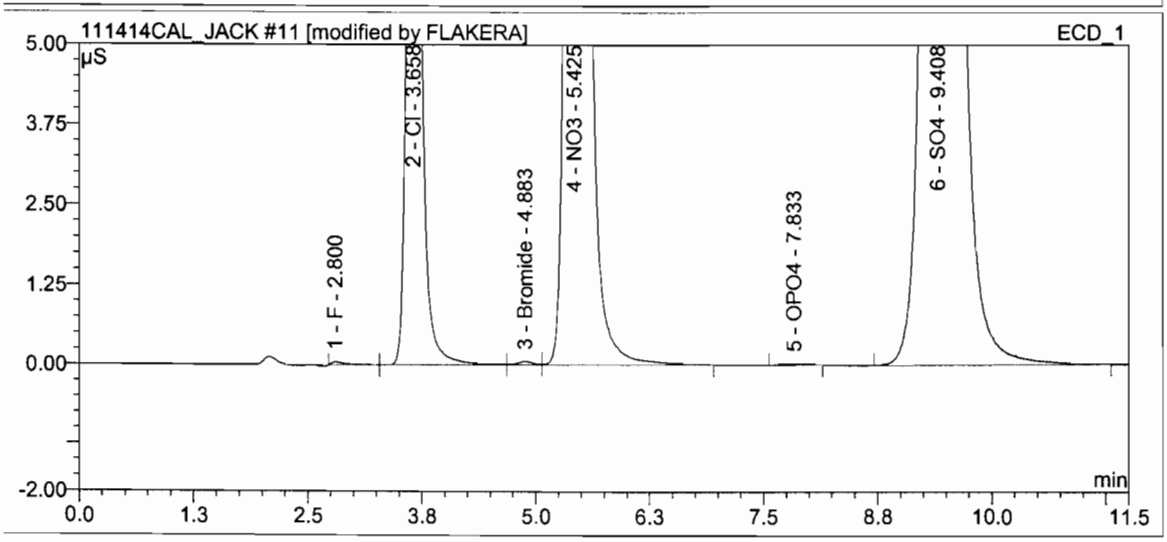
Integration Report - ECD_1

Sample Name:	**9412-A-7 @2**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 11:17**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BM *	0.008	0.046	20.4470
2	3.66	Cl	M *	2.995	21.701	9359.6720
3	4.88	Bromide	M *	0.011	0.055	83.8038
4	5.43	NO3	MB*	10.813	57.536	15188.2286
5	7.83	OPO4	BMB	0.006	0.019	70.1378
6	9.41	SO4	BMB	13.863	42.767	59295.4272
		TOTAL:		27.70	122.12	84017.72

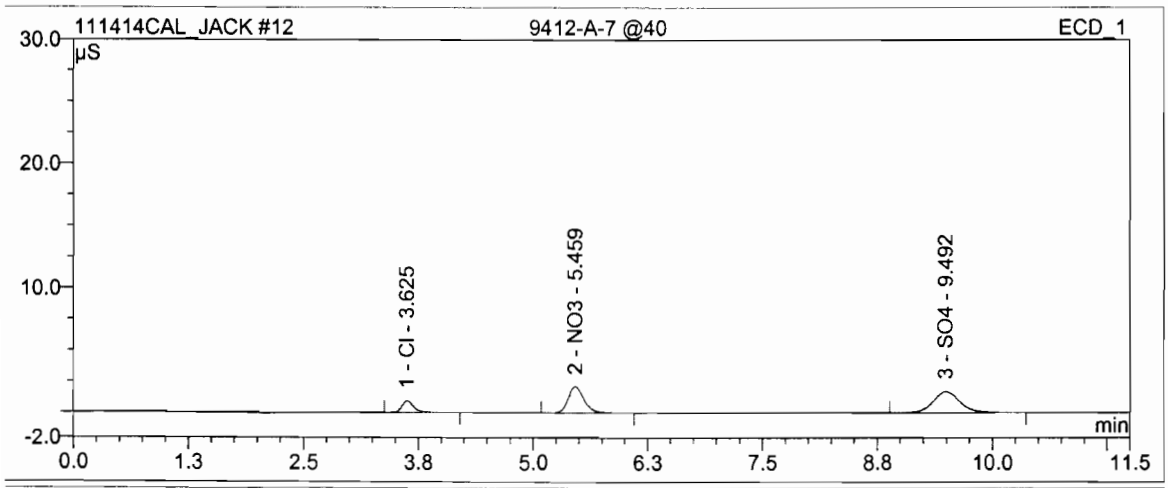


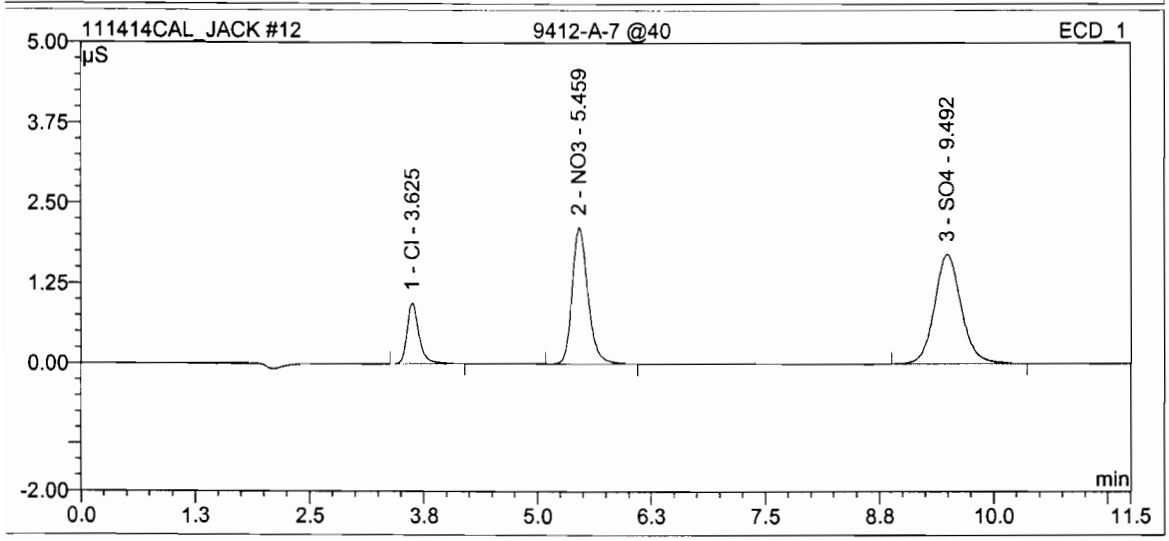


Integration Report - ECD_1

Sample Name:	**9412-A-7 @40**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 11:31**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	3.63	Cl	BMB	0.144	0.946	449.2053
2	5.46	NO3	BMB	0.429	2.124	602.4741
3	9.49	SO4	BMB	0.583	1.703	2493.4188
		TOTAL:		1.16	4.77	3545.10

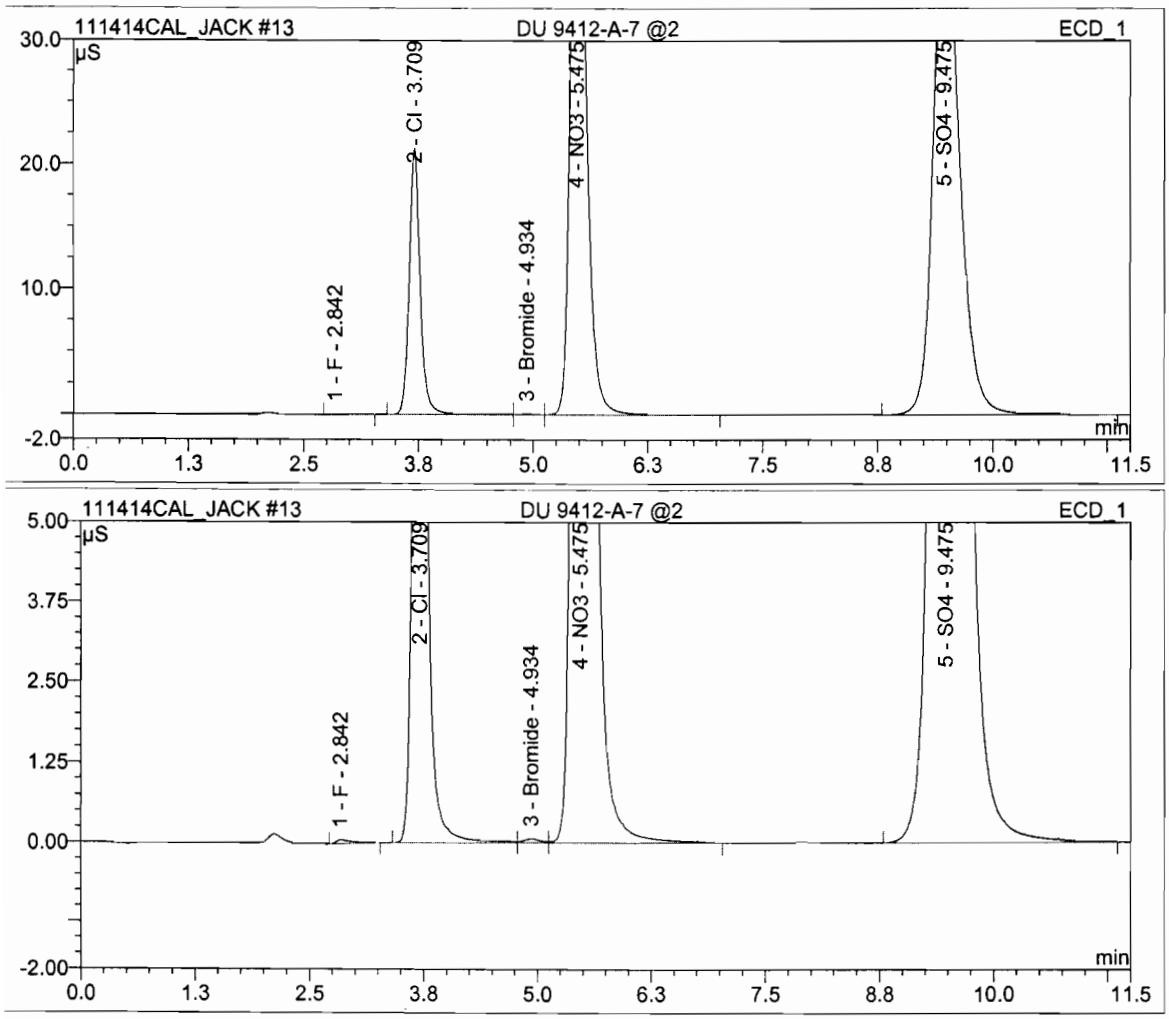




Integration Report - ECD_1

Sample Name:	**DU 9412-A-7 @2**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 11:45**	*Run Time:*	**11.50**

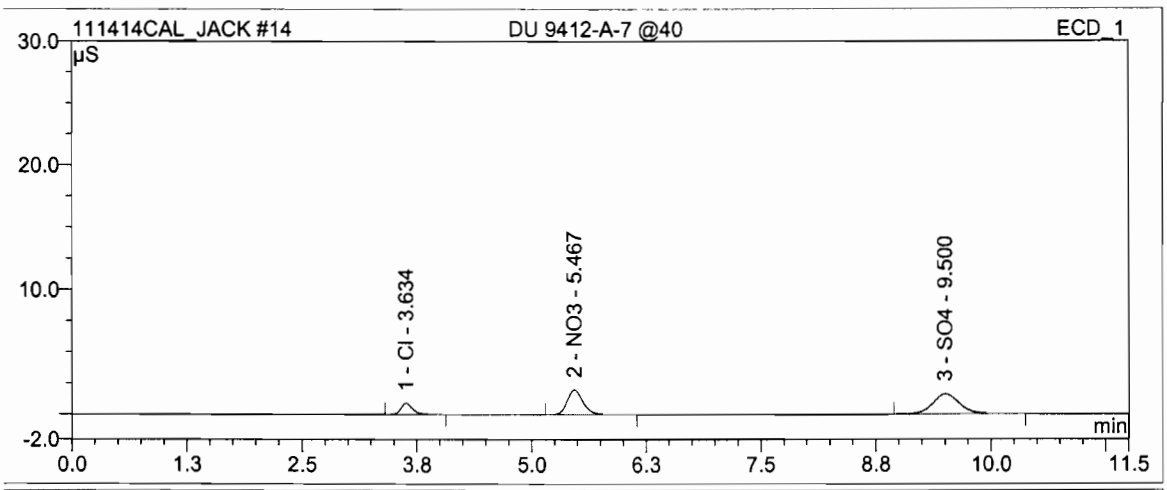
No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.84	F	BMB	0.013	0.063	32.0911
2	3.71	Cl	BM	2.953	21.289	9227.9285
3	4.93	Bromide	M	0.014	0.066	105.5152
4	5.48	NO3	MB	10.589	56.130	14873.9208
5	9.48	SO4	BMB	13.553	41.783	57967.1886
		TOTAL:		27.12	119.33	82206.64

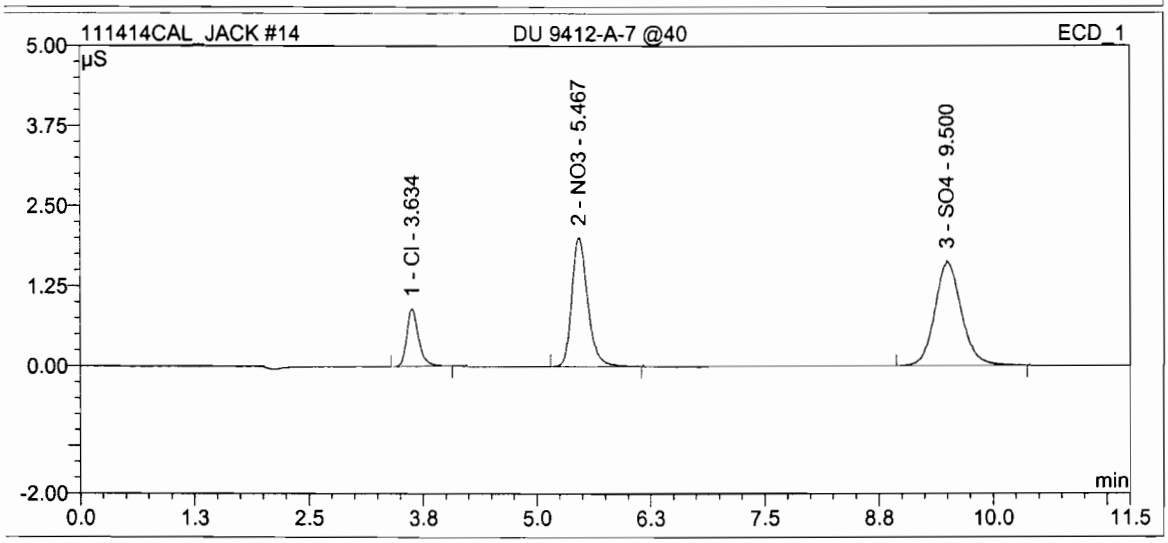


Integration Report - ECD_1

Sample Name:	**DU 9412-A-7 @40**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 11:59**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	3.63	Cl	BMB	0.136	0.899	423.9725
2	5.47	NO3	BMB	0.408	2.009	572.8845
3	9.50	SO4	BMB	0.551	1.634	2357.0222
		TOTAL:		1.09	4.54	3353.88

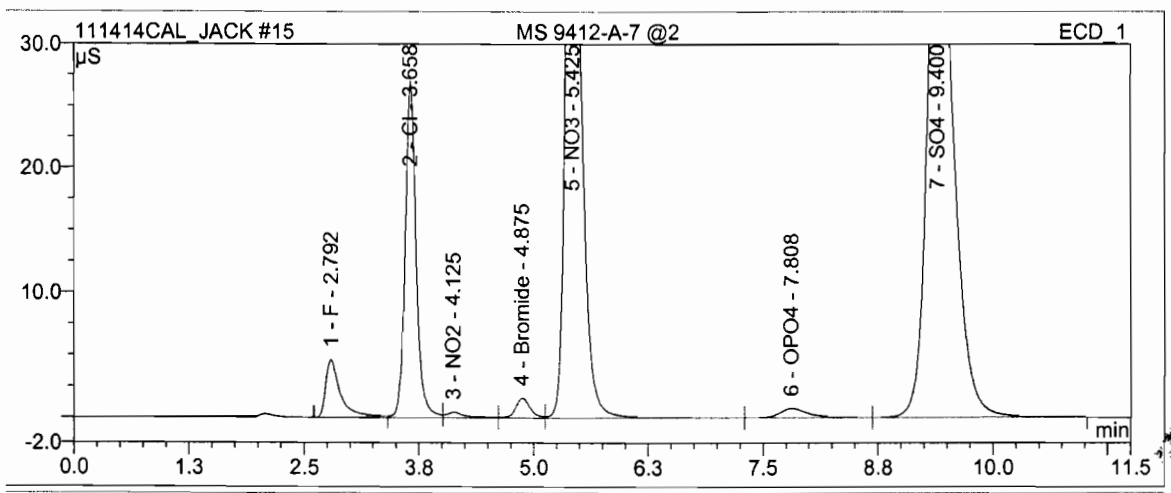


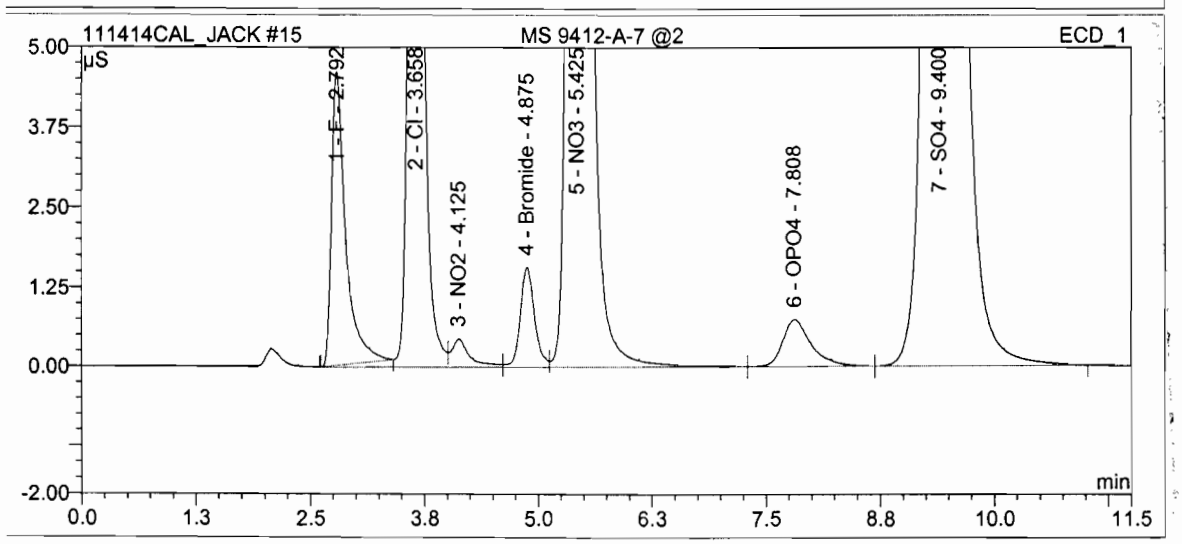


Integration Report - ECD_1

Sample Name:	**MS 9412-A-7 @2**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 12:13**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.79	F	Ru	0.823	4.595	1981.8927
2	3.66	Cl	BM	3.752	27.022	11724.3760
3	4.13	NO2	M	0.103	0.447	165.0735
4	4.88	Bromide	M	0.285	1.572	2226.2492
5	5.43	NO3	M	10.859	57.545	15252.8591
6	7.81	OPO4	Mb	0.269	0.745	3121.1844
7	9.40	SO4	bMB	14.627	44.978	62562.6977
		TOTAL:		30.72	136.90	97034.33





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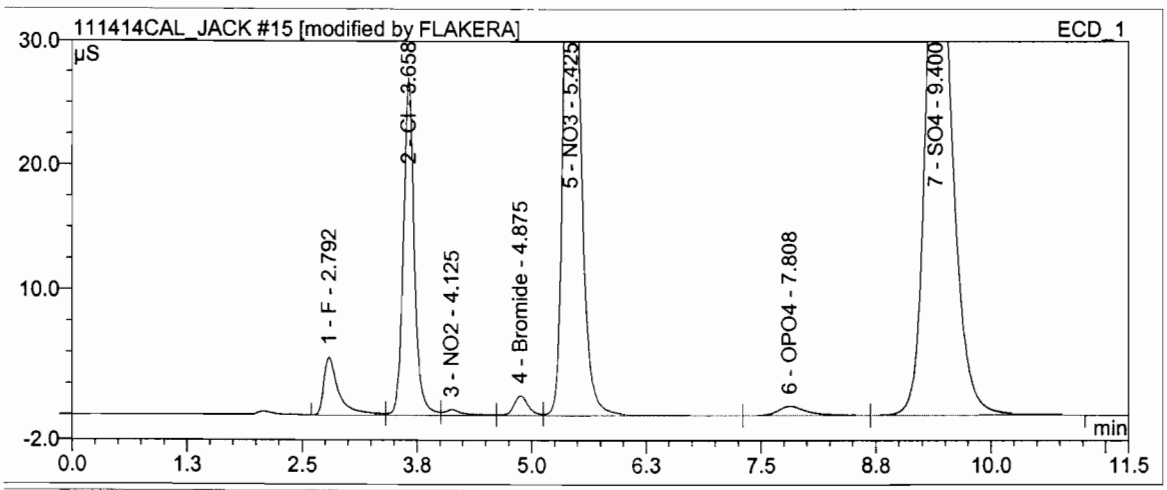
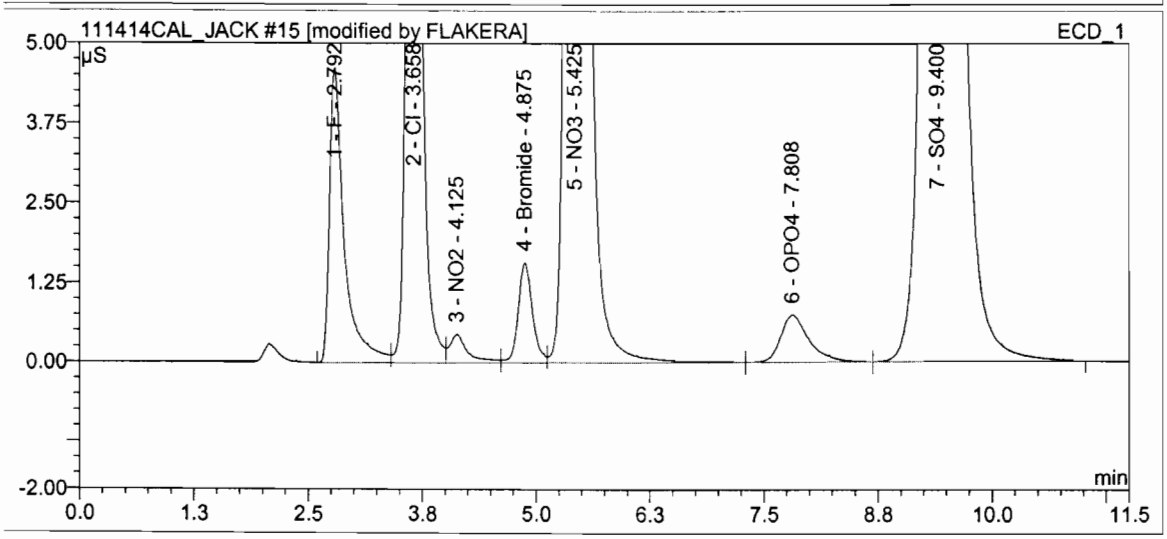
Integration Report - ECD_1

Sample Name:	**MS 9412-A-7 @2**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 12:13**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.79	F	BM *	0.871	4.622	2096.1972
2	3.66	Cl	M *	3.704	27.022	11575.9989
3	4.13	NO2	M	0.103	0.447	165.0735
4	4.88	Bromide	M	0.285	1.572	2226.2492
5	5.43	NO3	M	10.859	57.545	15252.8591
6	7.81	OPO4	Mb	0.269	0.745	3121.1844
7	9.40	SO4	bMB	14.627	44.978	62562.6977
		TOTAL:		30.72	136.93	97000.26

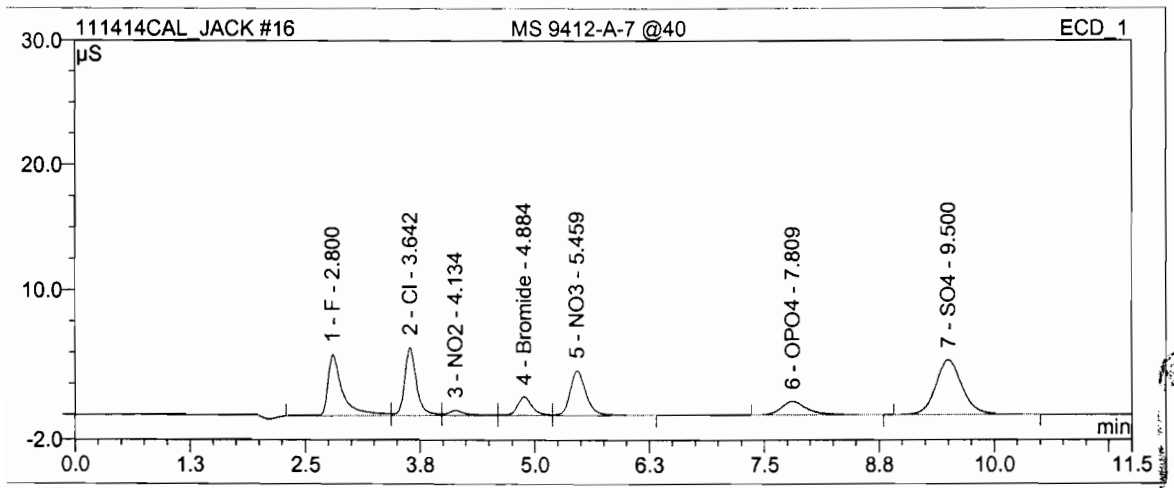


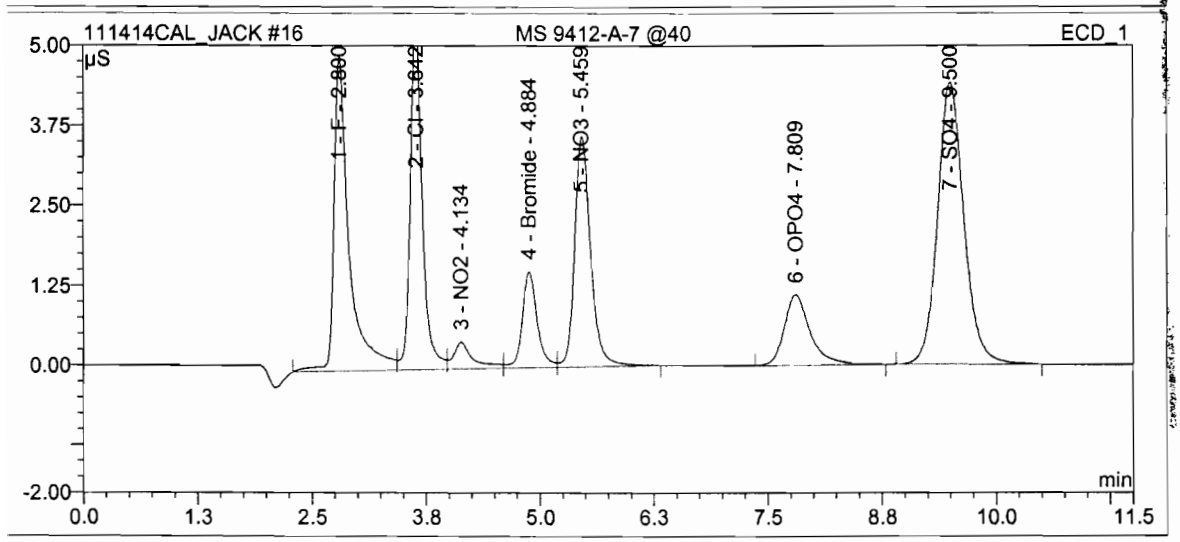


Integration Report - ECD_1

Sample Name:	**MS 9412-A-7 @40**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 12:27**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BM	0.944	4.946	2272.7991
2	3.64	Cl	M	0.830	5.479	2592.5749
3	4.13	NO2	M	0.104	0.421	166.3145
4	4.88	Bromide	M	0.287	1.509	2240.4655
5	5.46	NO3	MB	0.736	3.597	1034.3331
6	7.81	OPO4	BMB	0.369	1.109	4278.3884
7	9.50	SO4	BMB	1.480	4.412	6328.1411
		TOTAL:		4.75	21.47	18913.02

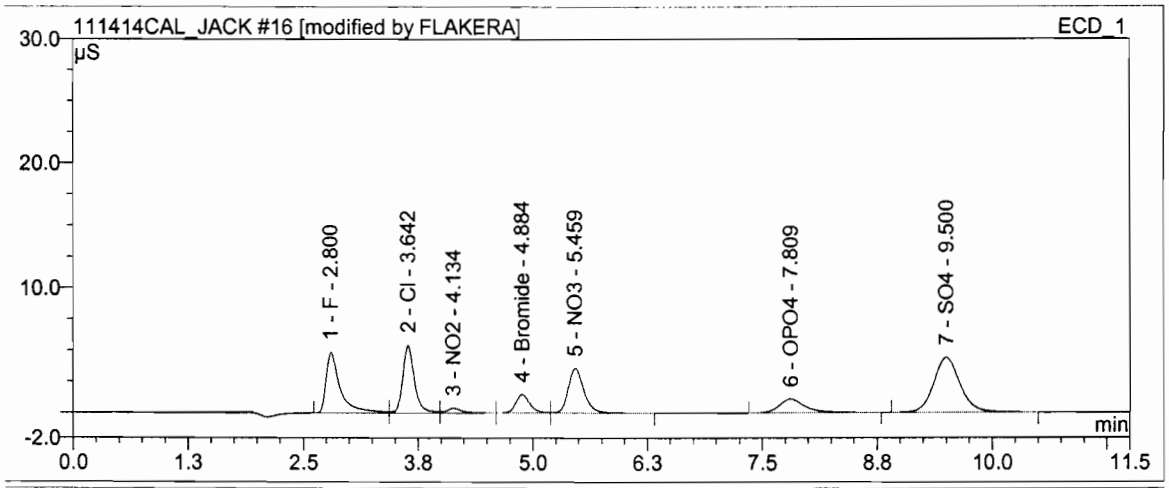


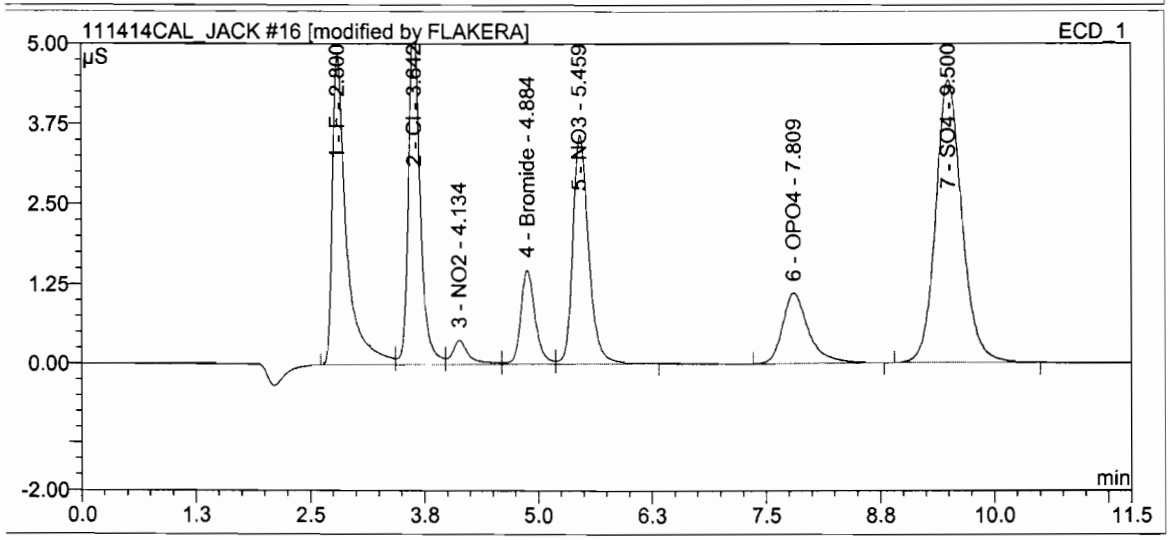


Integration Report - ECD_1

Sample Name:	**MS 9412-A-7 @40**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 12:27**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BM *	0.877	4.880	2112.3361
2	3.64	Cl	M *	0.803	5.429	2508.7260
3	4.13	NO2	M *	0.081	0.380	128.9641
4	4.88	Bromide	M *	0.271	1.483	2117.4413
5	5.46	NO3	MB*	0.724	3.581	1017.5131
6	7.81	OPO4	BMB	0.369	1.109	4278.3884
7	9.50	SO4	BMB	1.480	4.412	6328.1411
		TOTAL:		4.61	21.27	18491.51

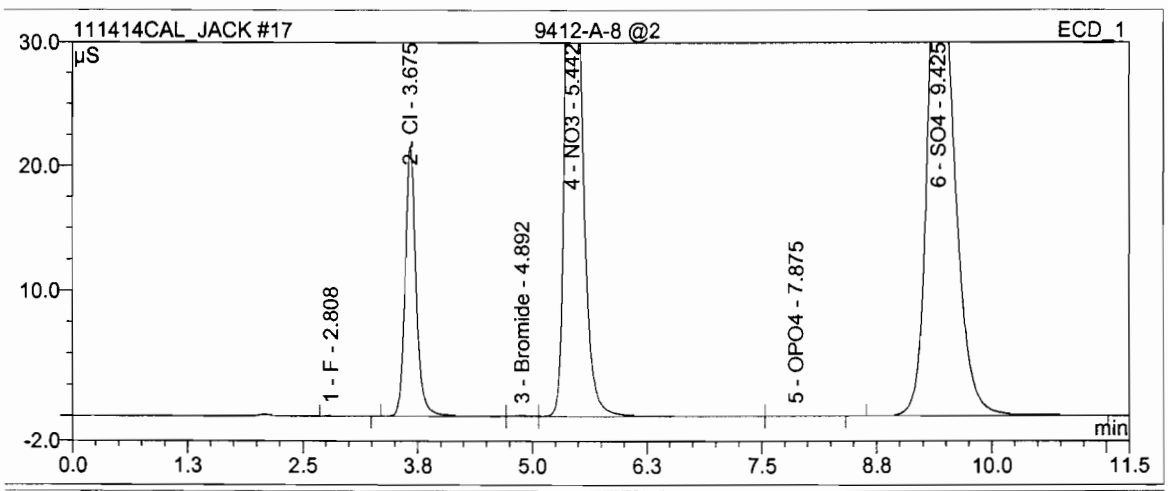


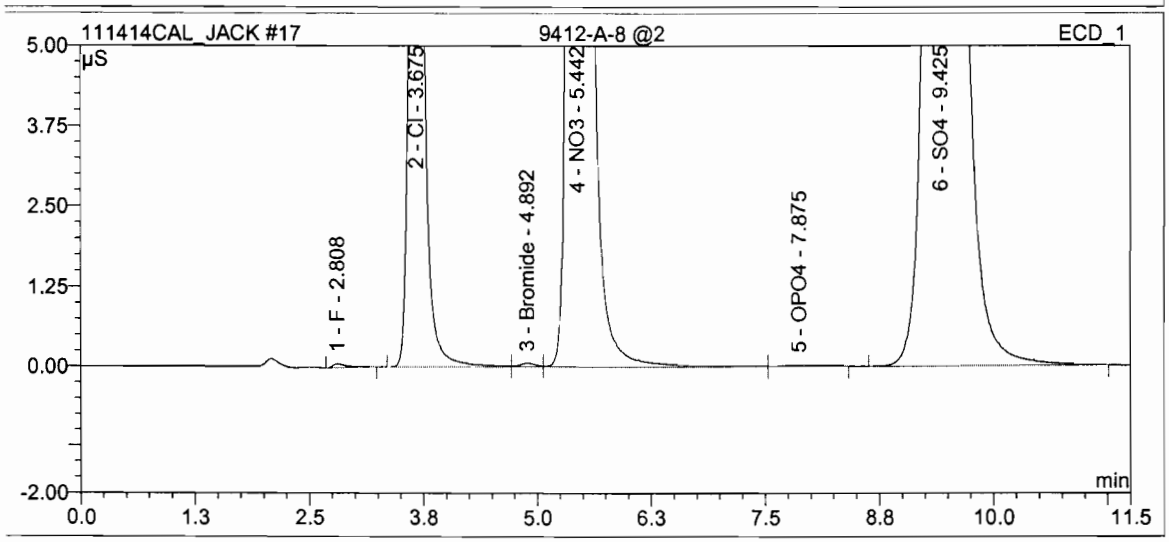


Integration Report - ECD_1

Sample Name:	**9412-A-8 @2**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 12:41**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.81	F	BMB	0.012	0.063	29.5472
2	3.68	Cl	BM	2.982	21.662	9317.7339
3	4.89	Bromide	M	0.012	0.061	92.9483
4	5.44	NO3	M	10.746	57.047	15093.8345
5	7.88	OPO4	MB	0.013	0.026	145.3448
6	9.43	SO4	BMB	13.744	42.390	58785.8628
		TOTAL:		27.51	121.25	83465.27

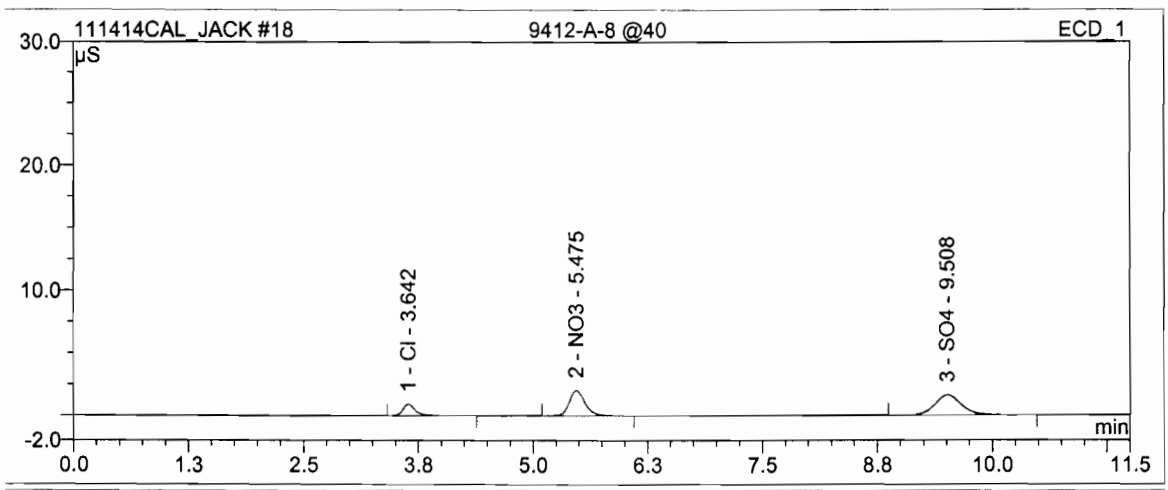


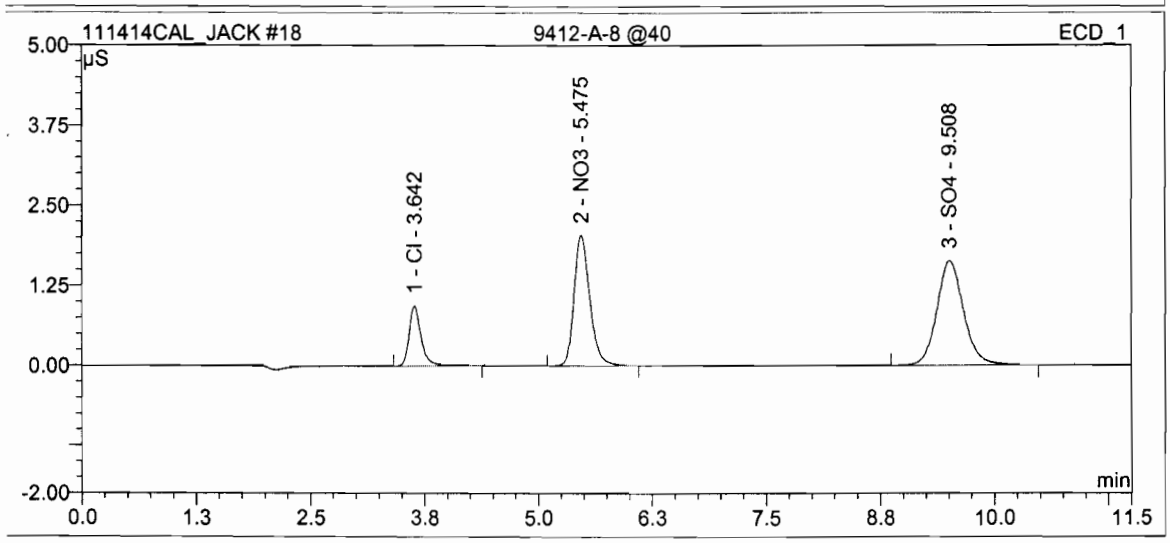


Integration Report - ECD_1

Sample Name:	**9412-A-8 @40**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 12:55**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	3.64	Cl	BMB	0.148	0.941	463.4103
2	5.48	NO3	BMB	0.413	2.043	579.5193
3	9.51	SO4	BMB	0.563	1.637	2408.4593
		TOTAL:		1.12	4.62	3451.39

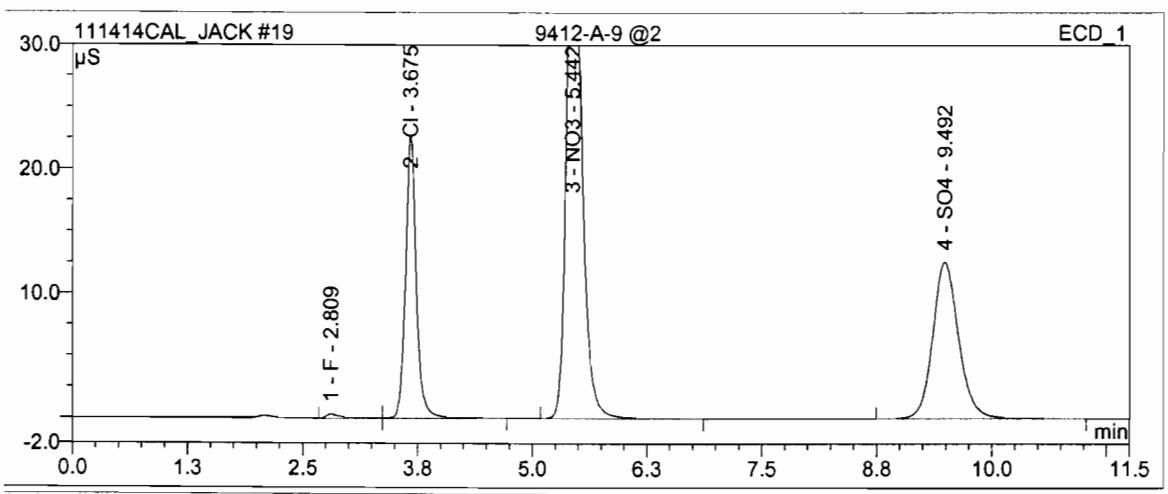


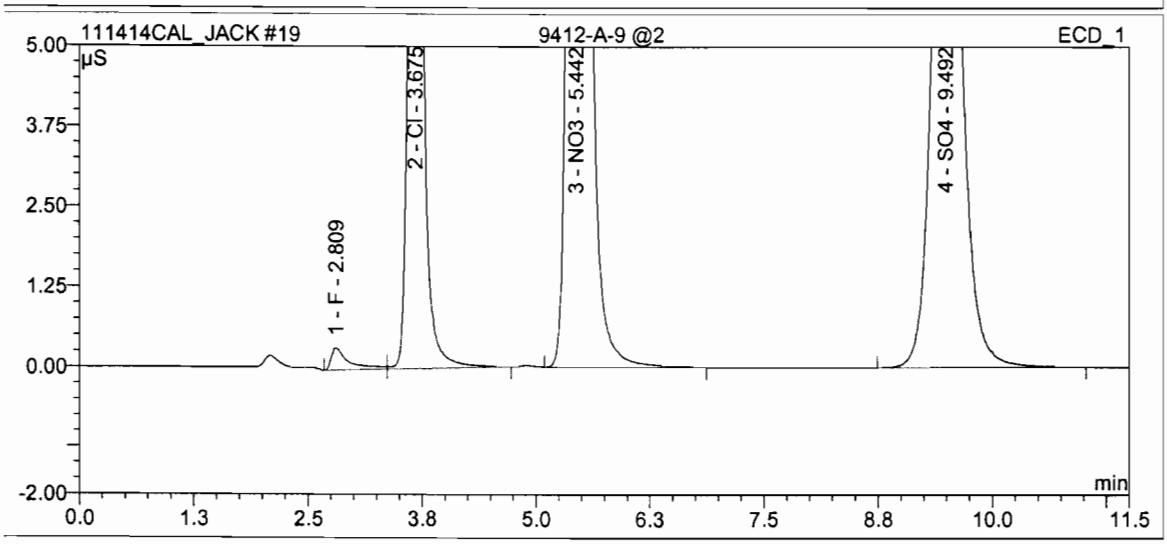


Integration Report - ECD_1

Sample Name:	**9412-A-9 @2**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 13:09**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.81	F	BM	0.080	0.346	192.8693
2	3.68	Cl	MB	3.105	22.798	9702.7372
3	5.44	NO3	BMB	8.267	43.967	11612.0504
4	9.49	SO4	BMB	4.143	12.605	17720.7094
		TOTAL:		15.60	79.72	39228.37

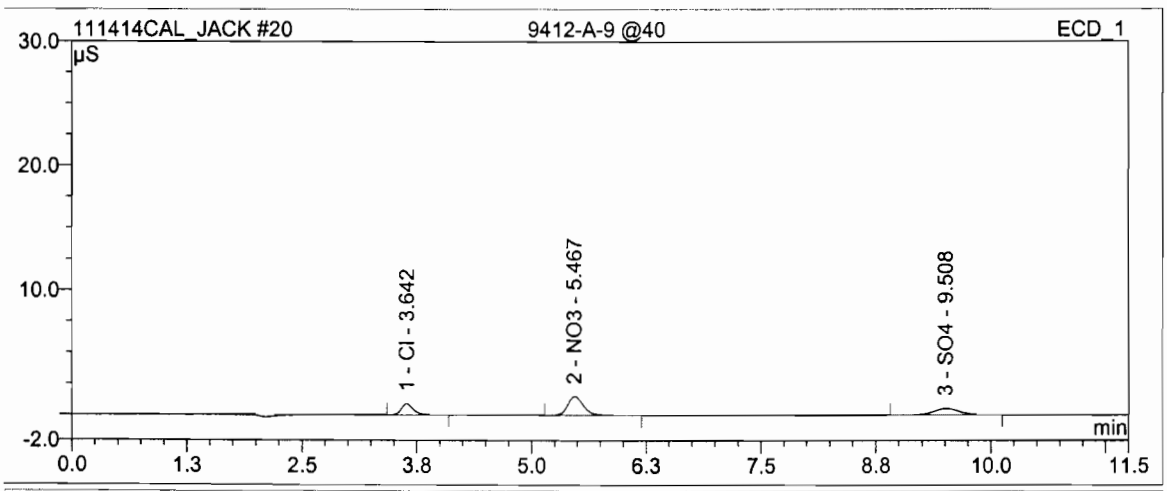


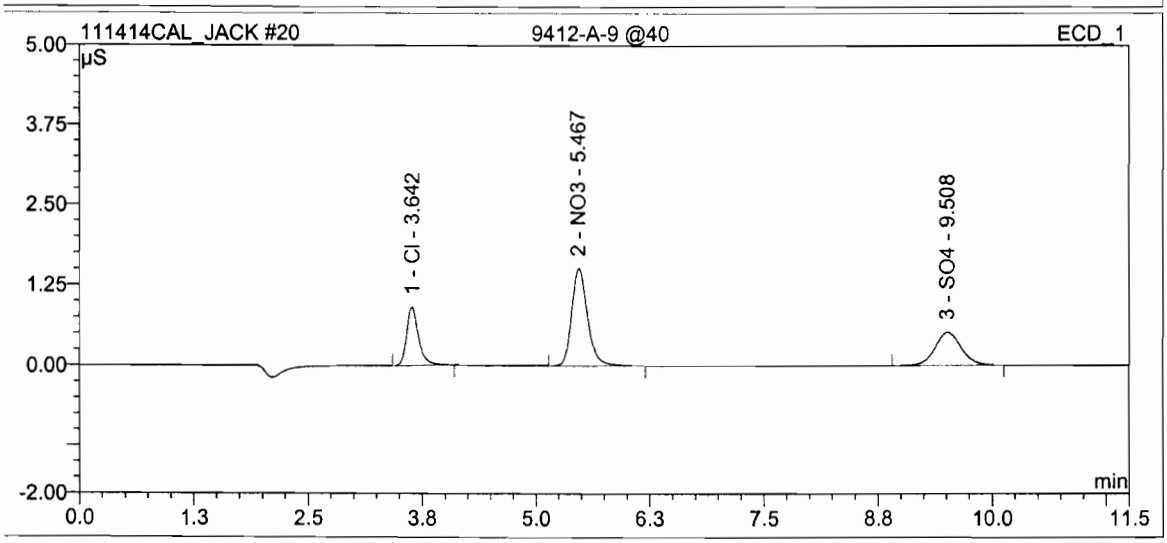


Integration Report - ECD_1

Sample Name:	**9412-A-9 @40**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 13:23**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	3.64	Cl	BMB	0.138	0.906	431.2618
2	5.47	NO3	BMB	0.308	1.511	432.4316
3	9.51	SO4	BMB	0.173	0.515	739.9965
		TOTAL:		0.62	2.93	1603.69

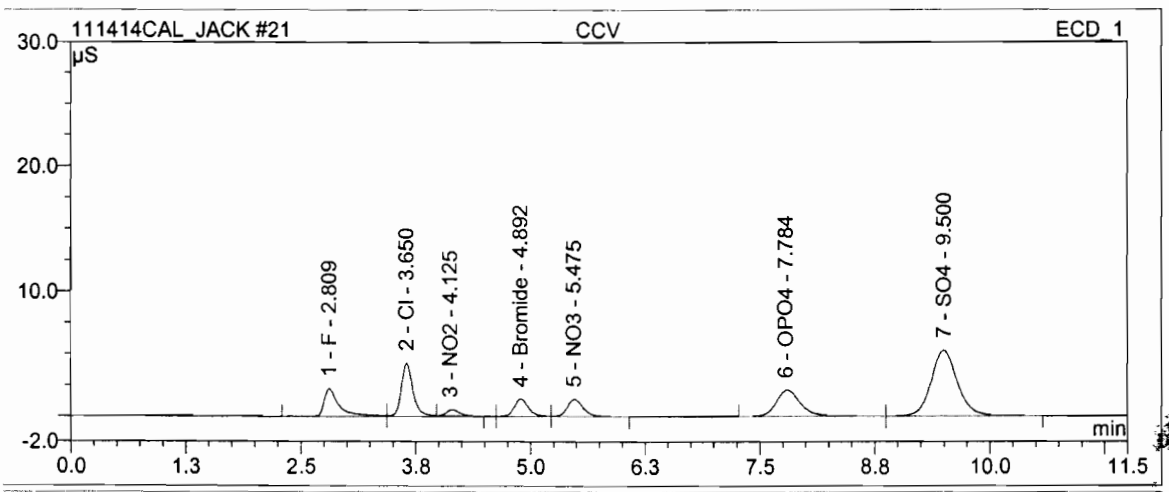


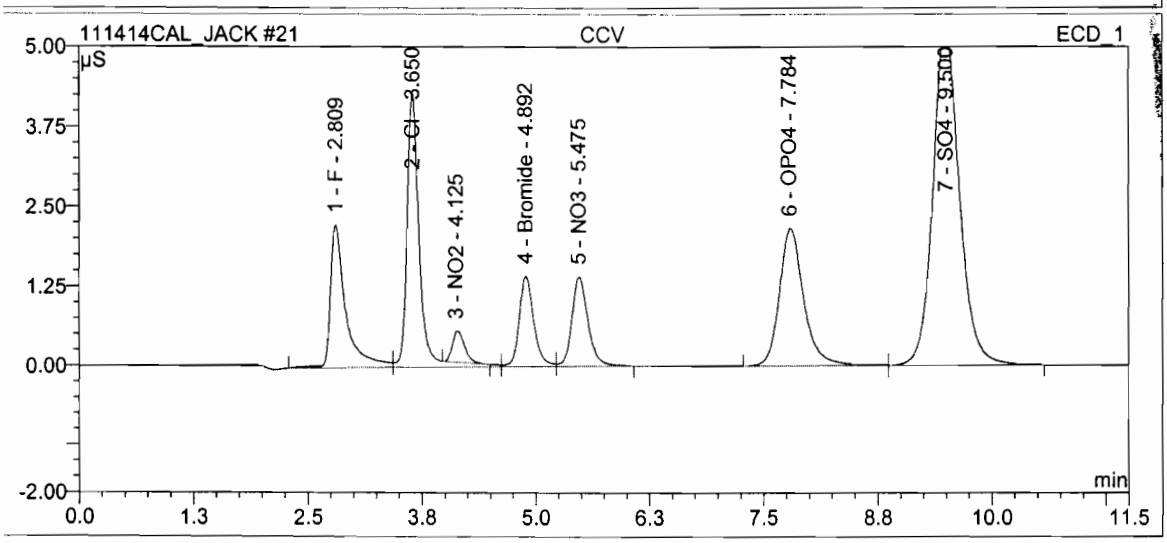


Integration Report - ECD_1

Sample Name:	**CCV**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 13:37**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.81	F	BM	0.438	2.243	1053.5868
2	3.65	Cl	M	0.680	4.323	2123.8797
3	4.13	NO2	Rd	0.076	0.488	121.7825
4	4.89	Bromide	M	0.264	1.426	2059.9006
5	5.48	NO3	MB	0.289	1.403	406.1651
6	7.78	OPO4	BM	0.677	2.163	7843.2847
7	9.50	SO4	MB	1.786	5.308	7637.0652
		TOTAL:		4.21	17.35	21245.66





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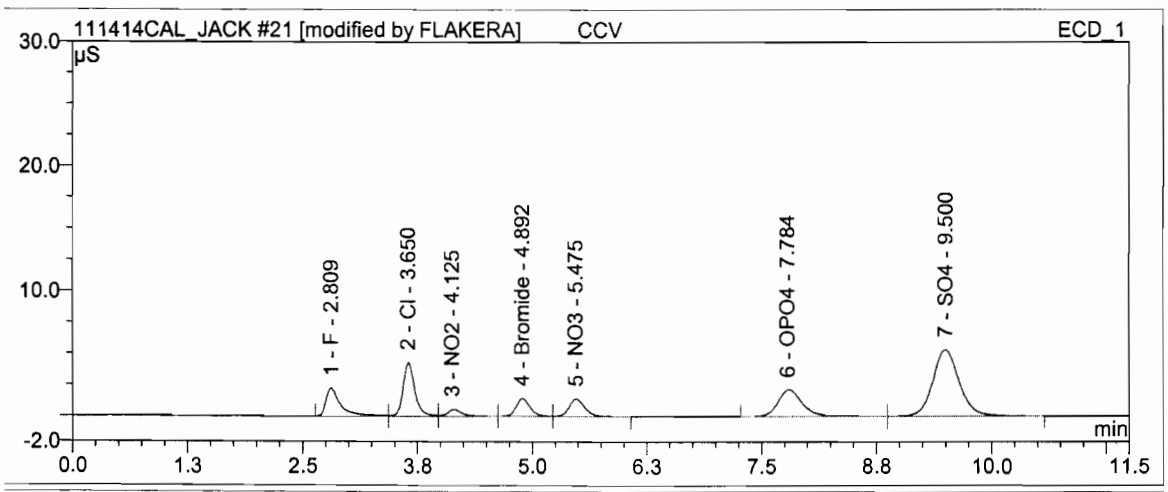
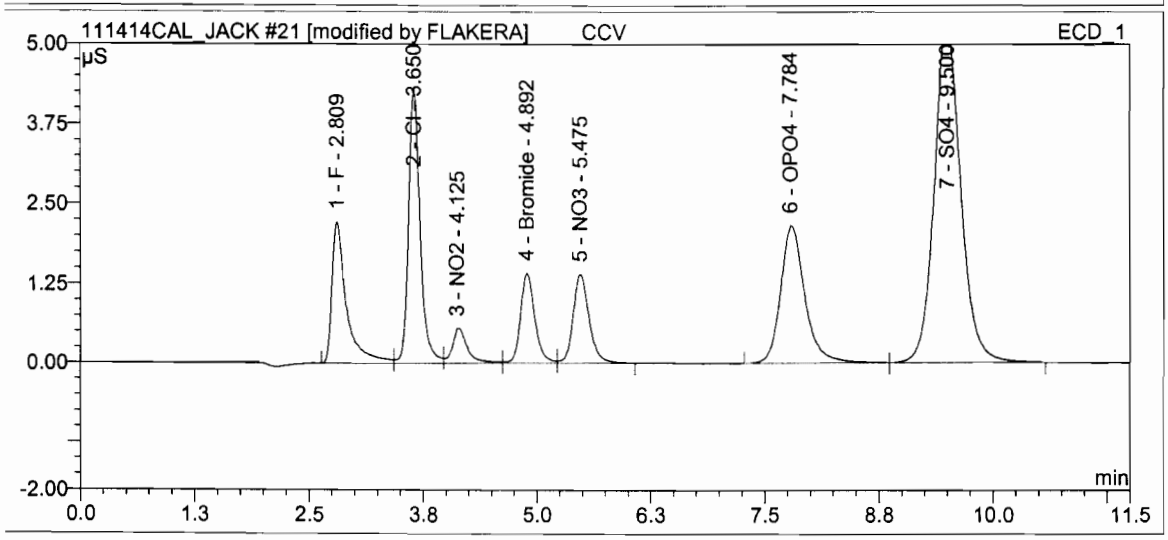
F, Cl, NO2, Br, NO3

Integration Report - ECD_1

Sample Name:	**CCV**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 13:37**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.81	F	BM *	0.413	2.218	993.7684
2	3.65	Cl	M *	0.633	4.305	1977.2010
3	4.13	NO2	M *	0.105	0.548	167.0081
4	4.89	Bromide	M *	0.259	1.417	2018.7551
5	5.48	NO3	MB*	0.286	1.398	402.2873
6	7.78	OPO4	BM	0.677	2.163	7843.2847
7	9.50	SO4	MB	1.786	5.308	7637.0652
		TOTAL:		4.16	17.36	21039.37

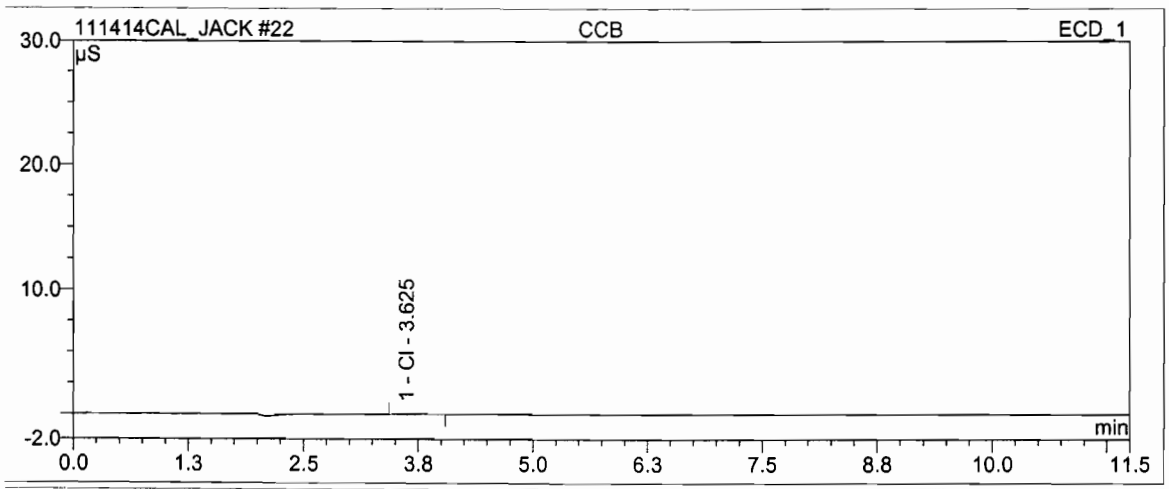


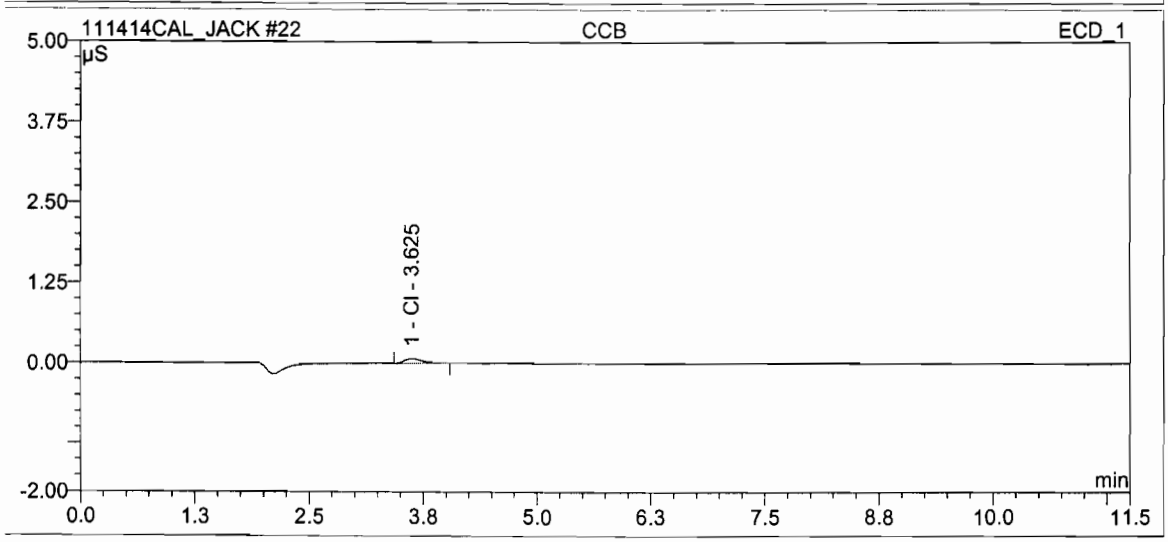


Integration Report - ECD_1

Sample Name:	**CCB**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 13:50**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	3.63	Cl	BMB	0.018	0.074	55.0982
		TOTAL:		0.02	0.07	55.10

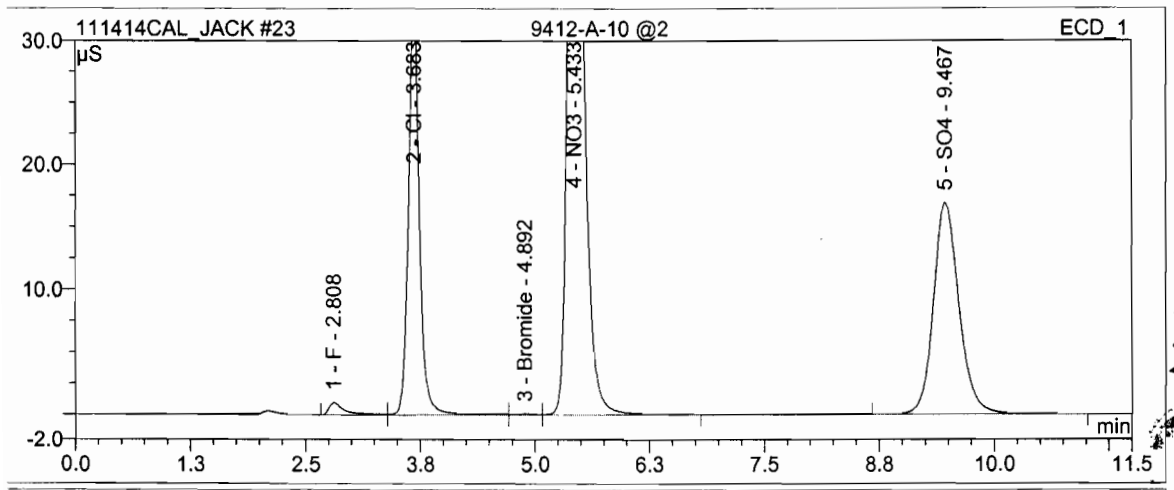


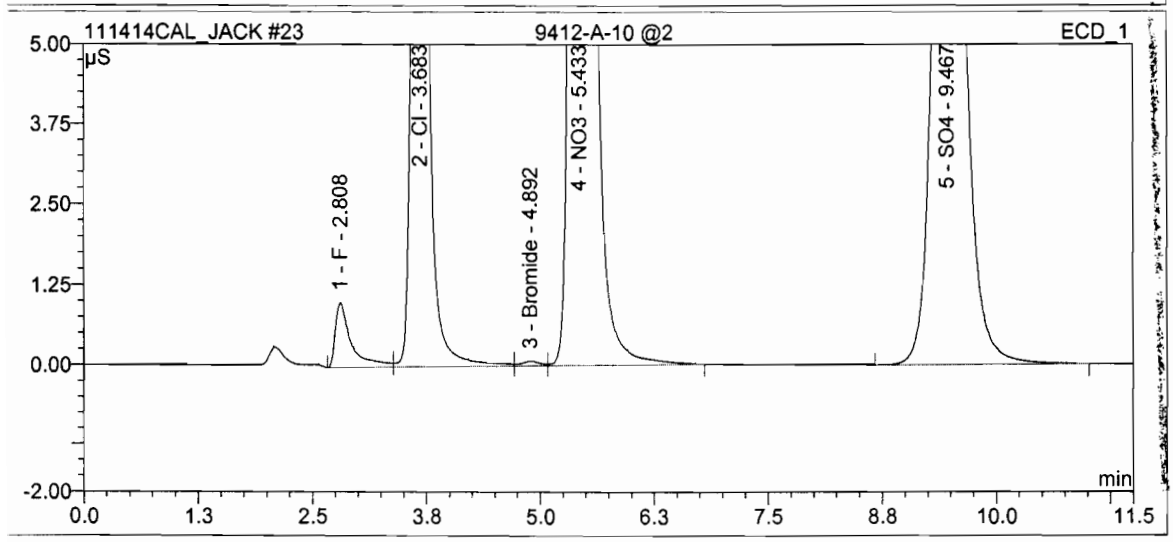


Integration Report - ECD_1

Sample Name:	**9412-A-10 @2**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 14:04**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.81	F	BM	0.208	1.012	500.2861
2	3.68	Cl	M	4.576	33.639	14300.3835
3	4.89	Bromide	M	0.018	0.077	138.4331
4	5.43	NO3	MB	12.543	66.557	17618.4908
5	9.47	SO4	BMB	5.517	16.907	23597.0348
		TOTAL:		22.86	118.19	56154.63





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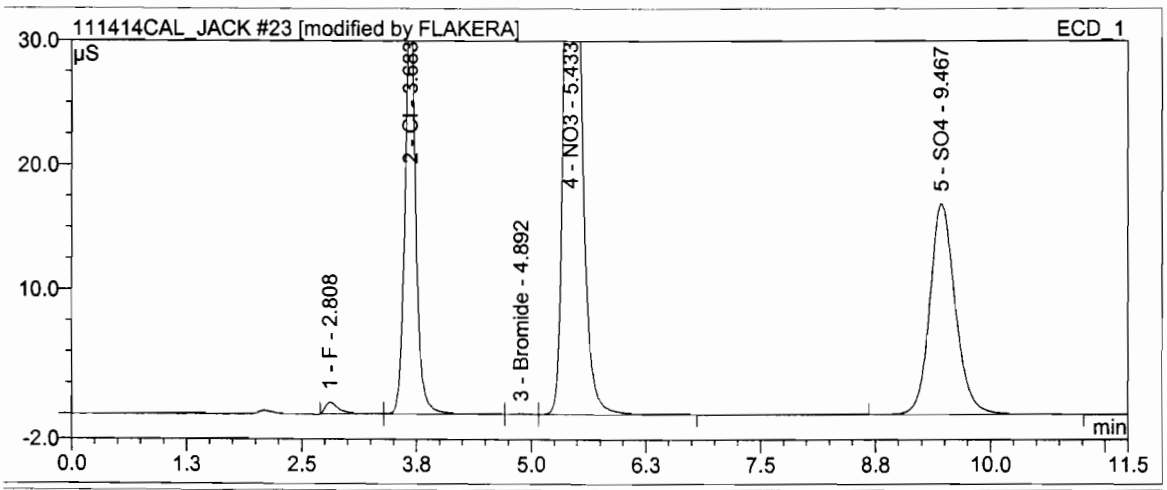
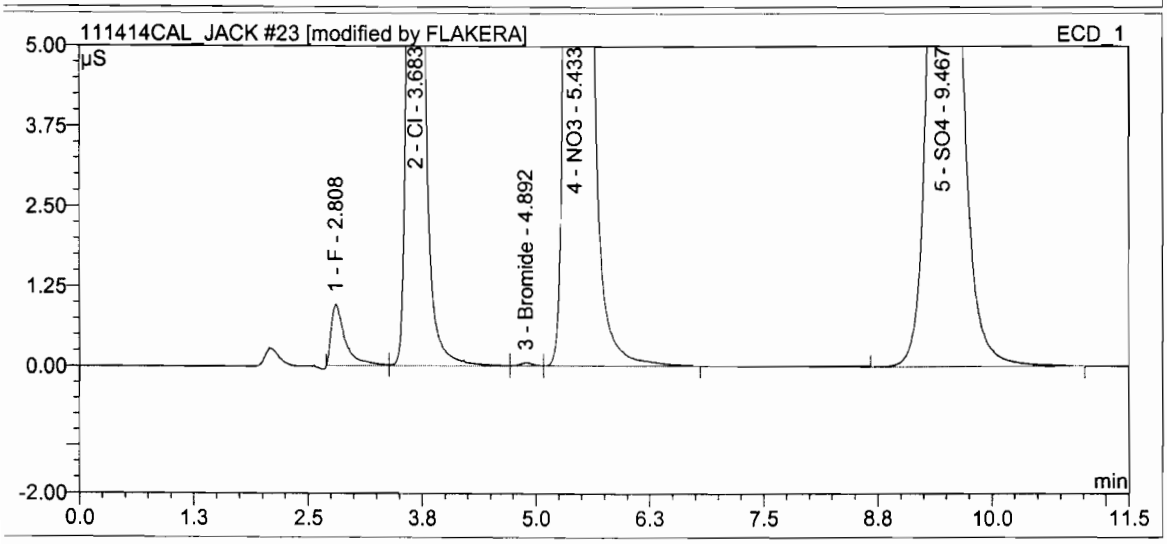
D, F

Integration Report - ECD_1

Sample Name:	**9412-A-10 @2**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 14:04**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.81	F	BM *	0.172	0.958	414.1015
2	3.68	Cl	M *	4.527	33.597	14146.0723
3	4.89	Bromide	M *	0.008	0.051	64.5504
4	5.43	NO3	MB*	12.523	66.538	17590.2125
5	9.47	SO4	BMB	5.517	16.907	23597.0348
		TOTAL:		22.75	118.05	55811.97

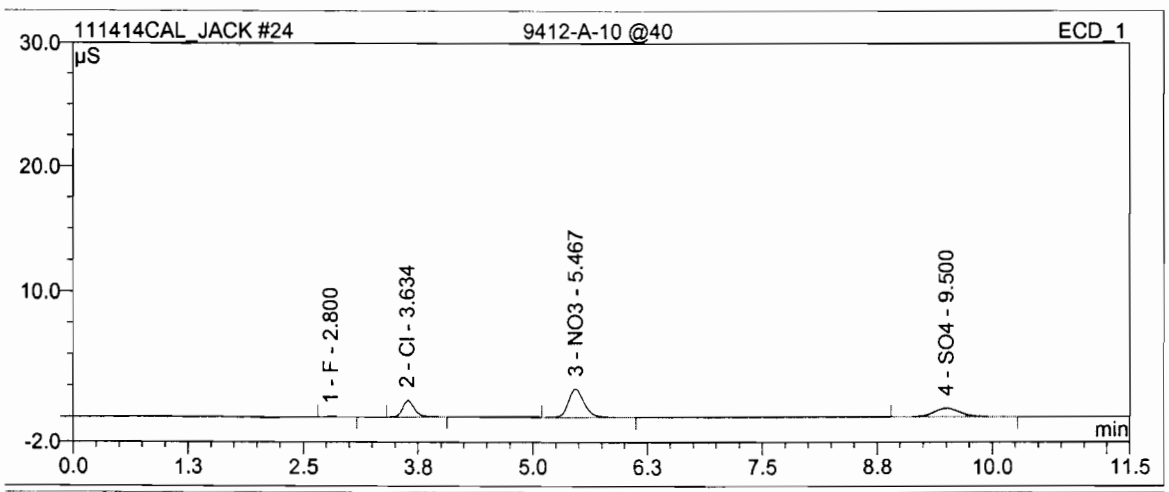


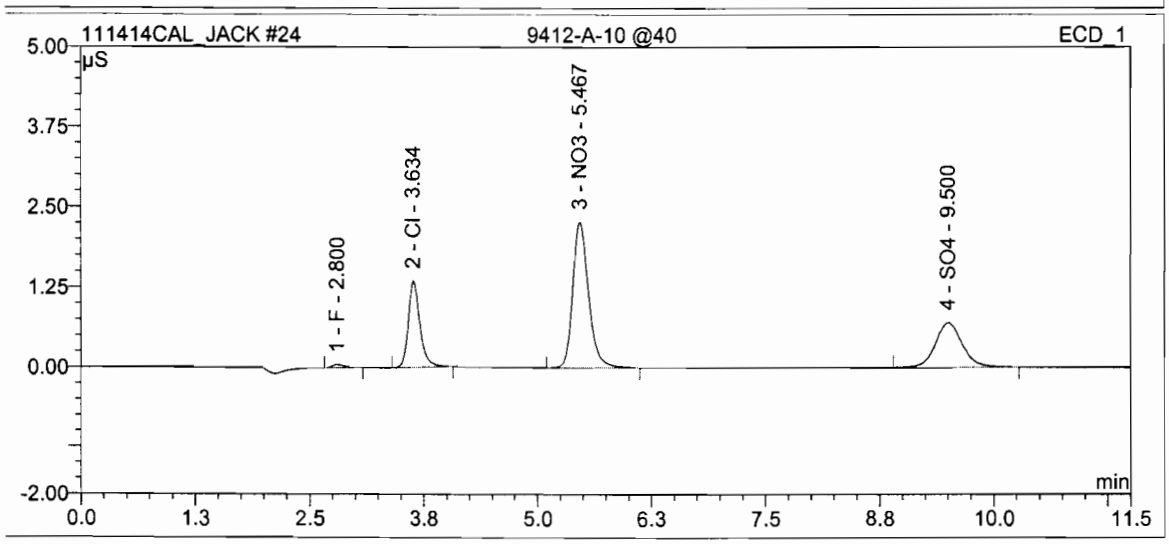


Integration Report - ECD_1

Sample Name:	**9412-A-10 @40**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 14:18**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BMB	0.008	0.050	19.3912
2	3.63	Cl	BMB	0.198	1.347	620.2169
3	5.47	NO3	BMB	0.461	2.274	648.0234
4	9.50	SO4	BMB	0.242	0.698	1033.0050
		TOTAL:		0.91	4.37	2320.64

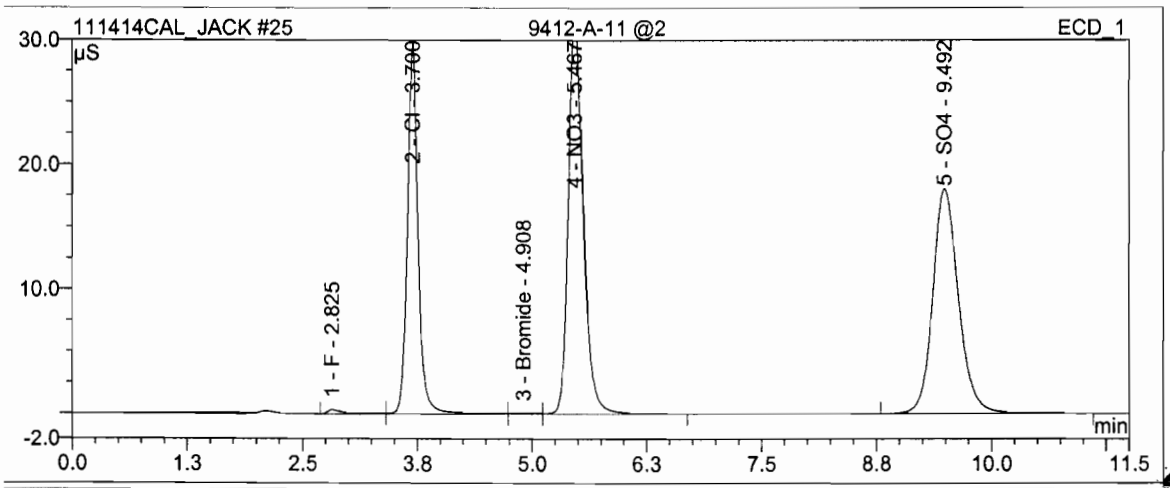


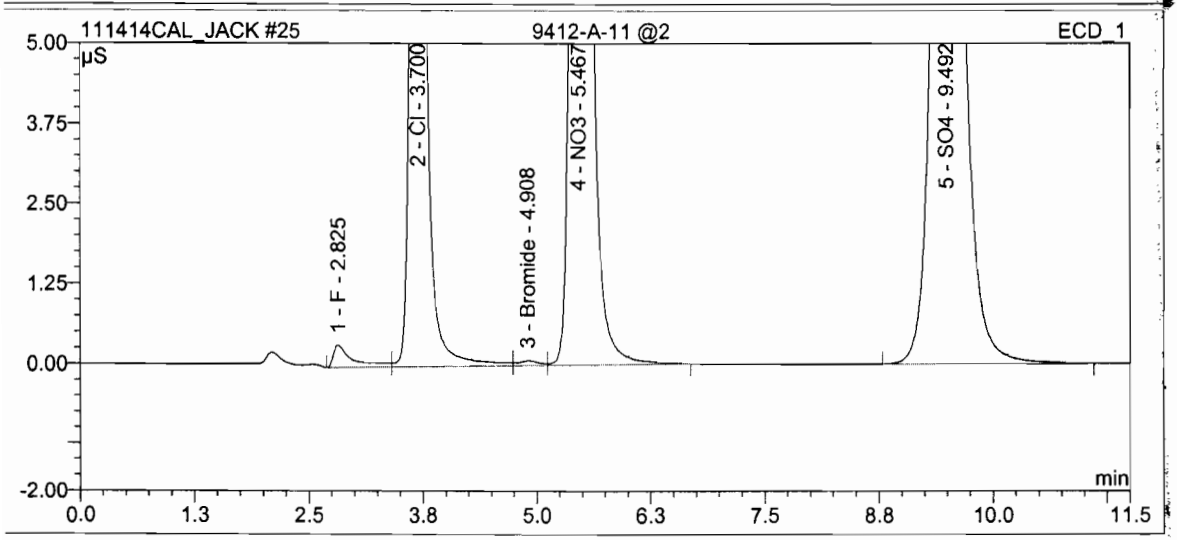


Integration Report - ECD_1

Sample Name:	**9412-A-11 @2**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 14:32**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.83	F	BM	0.088	0.346	210.8647
2	3.70	Cl	M	4.025	29.935	12579.6489
3	4.91	Bromide	M	0.020	0.077	156.2862
4	5.47	NO3	MB	5.920	31.373	8315.5540
5	9.49	SO4	BMB	5.881	18.070	25156.0634
		TOTAL:		15.93	79.80	46418.42





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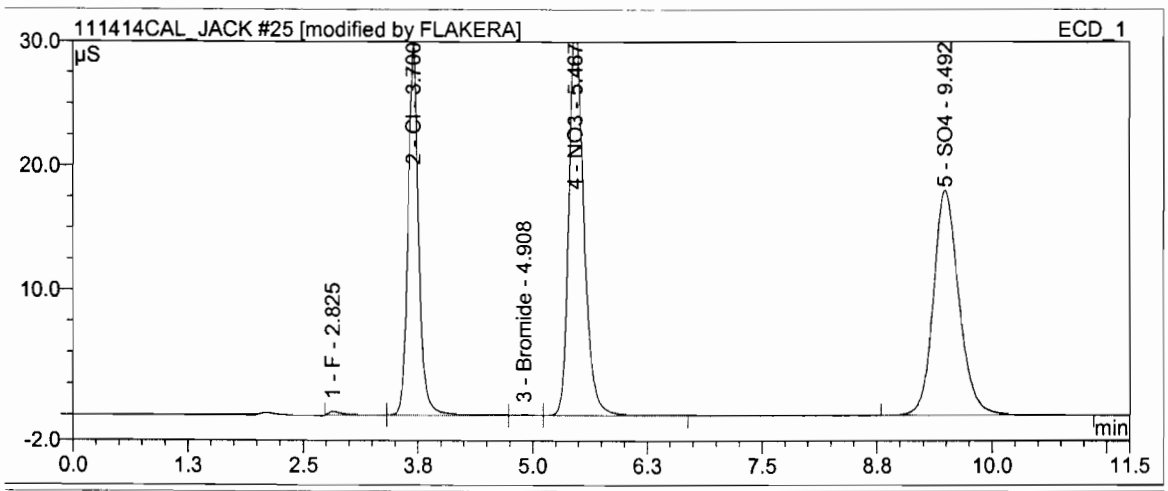
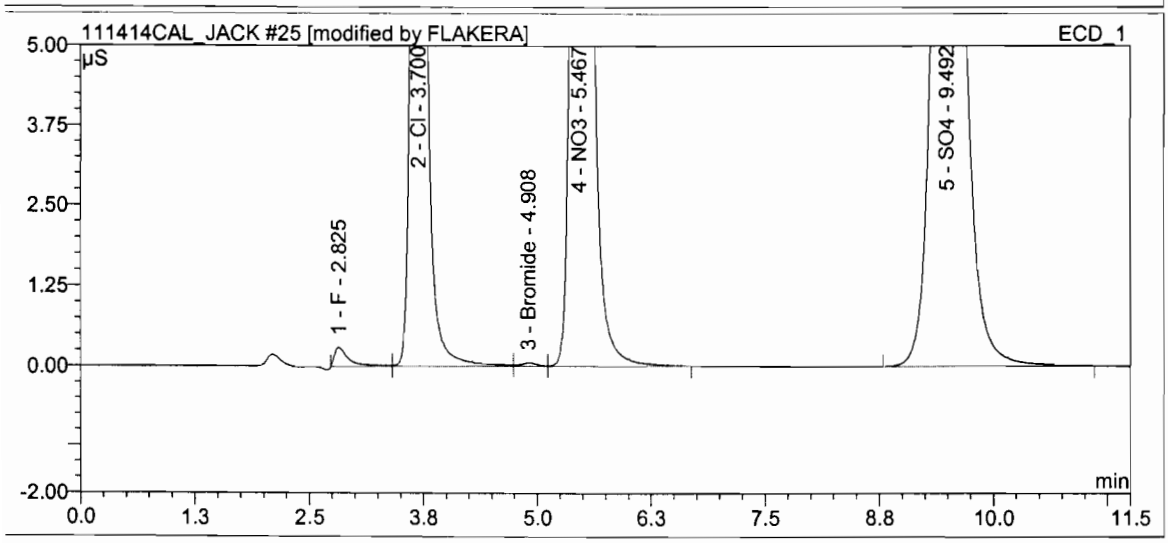
F

Integration Report - ECD_1

Sample Name:	**9412-A-11 @2**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 14:32**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.83	F	BM *	0.056	0.297	135.2870
2	3.70	Cl	M *	3.982	29.897	12442.3966
3	4.91	Bromide	M *	0.012	0.055	91.3613
4	5.47	NO3	MB*	5.905	31.357	8293.6238
5	9.49	SO4	BMB	5.881	18.070	25156.0634
		TOTAL:		15.84	79.68	46118.73

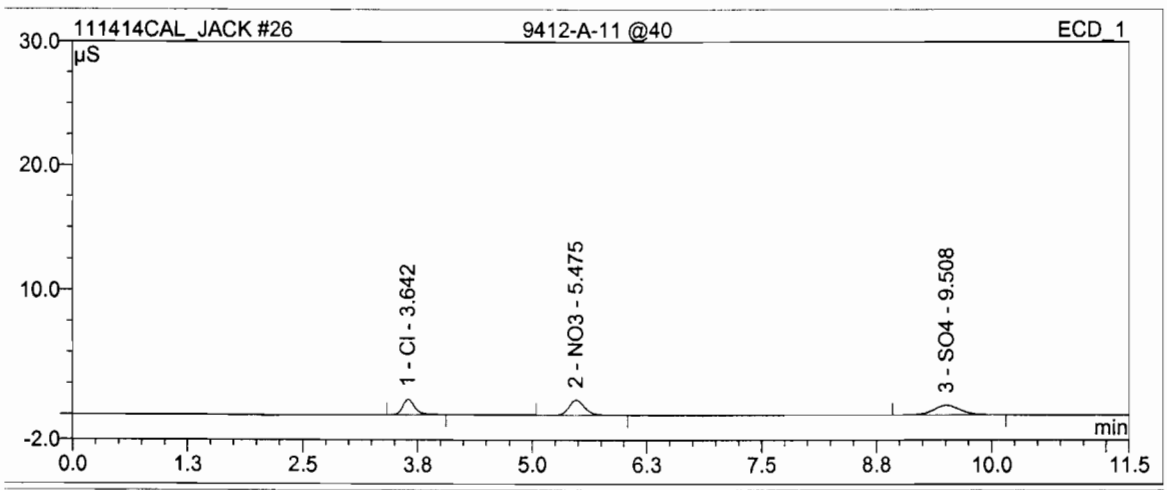


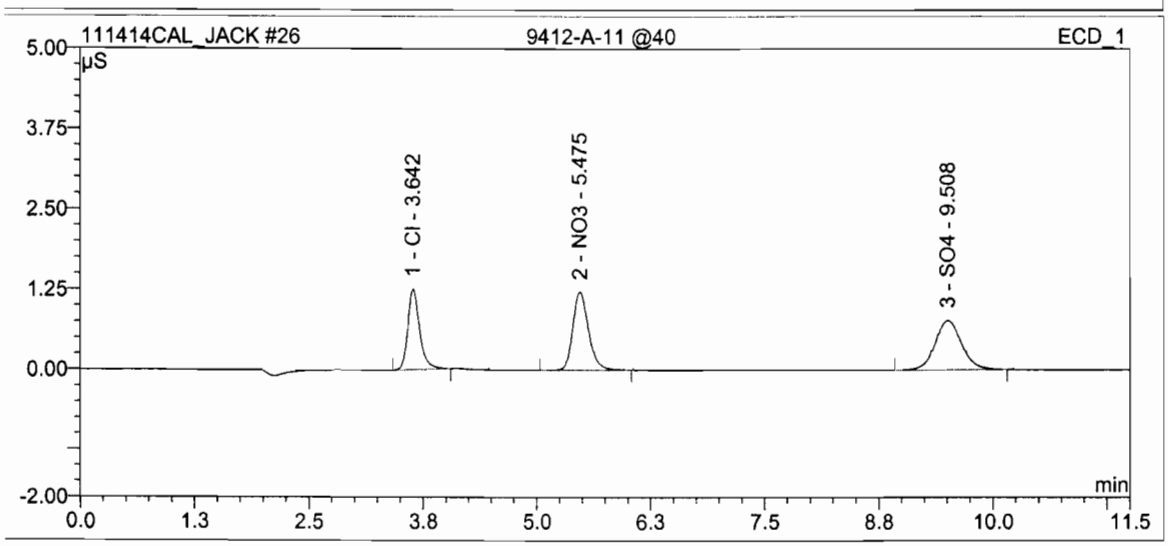


Integration Report - ECD_1

Sample Name:	**9412-A-11 @40**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 14:46**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	3.64	Cl	BMB	0.190	1.257	592.8340
2	5.48	NO3	BMB	0.248	1.224	347.8943
3	9.51	SO4	BMB	0.262	0.772	1121.4345
		TOTAL:		0.70	3.25	2062.16

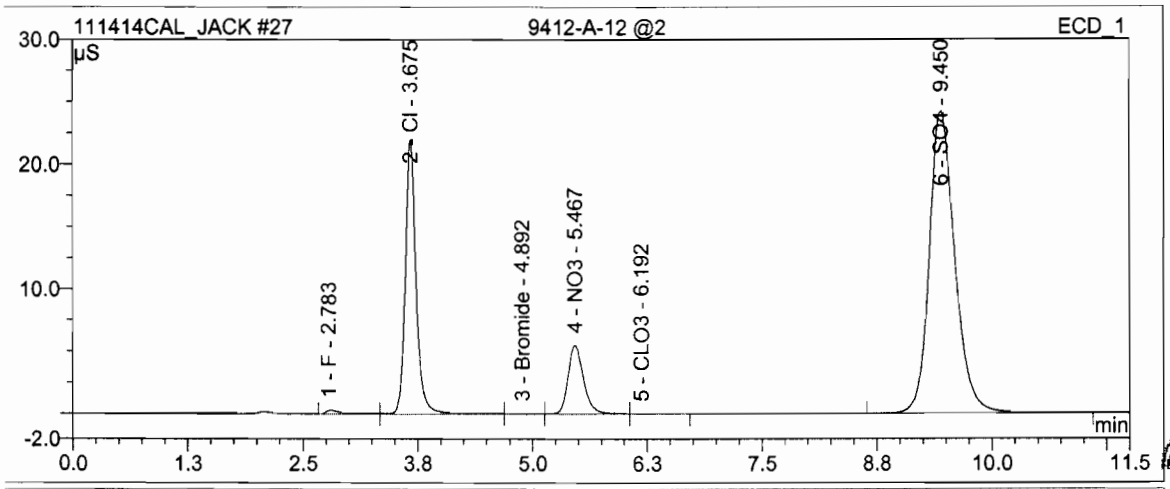


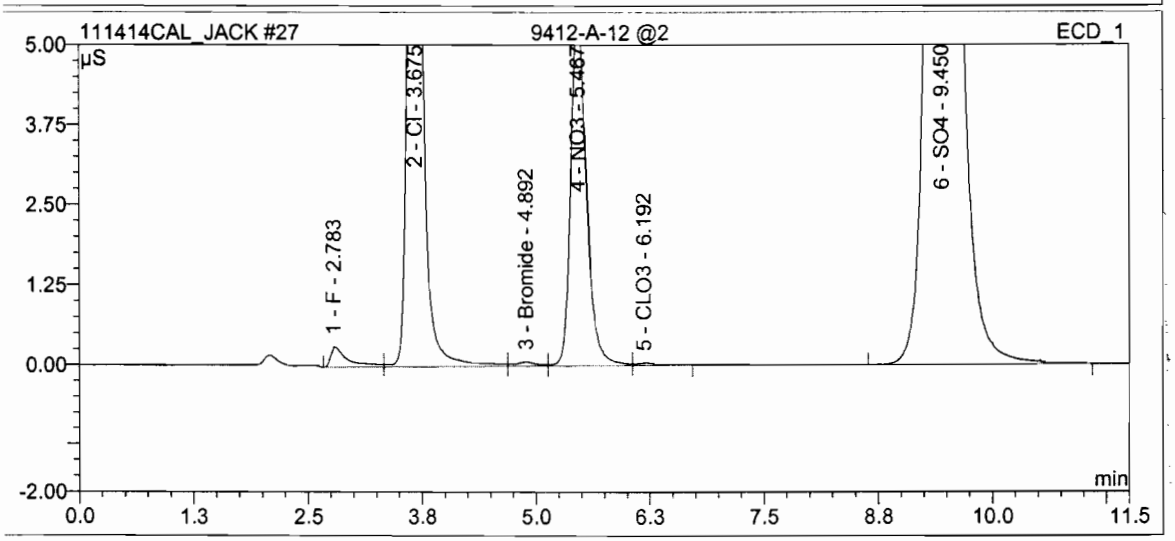


Integration Report - ECD_1

Sample Name:	**9412-A-12 @2**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 15:00**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.78	F	BM	0.072	0.322	172.6559
2	3.68	Cl	M	2.999	22.065	9370.8259
3	4.89	Bromide	M	0.019	0.067	145.1071
4	5.47	NO3	M	1.095	5.520	1538.5170
5	6.19	CLO3	MB	0.012	0.040	97.8212
6	9.45	SO4	BMB	7.844	24.212	33549.4814
		TOTAL:		12.04	52.23	44874.41





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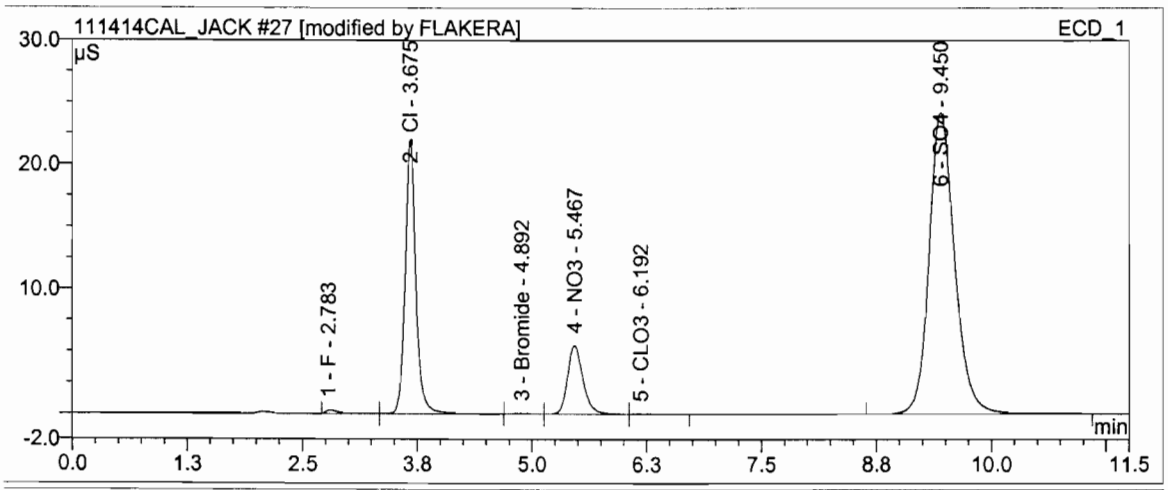
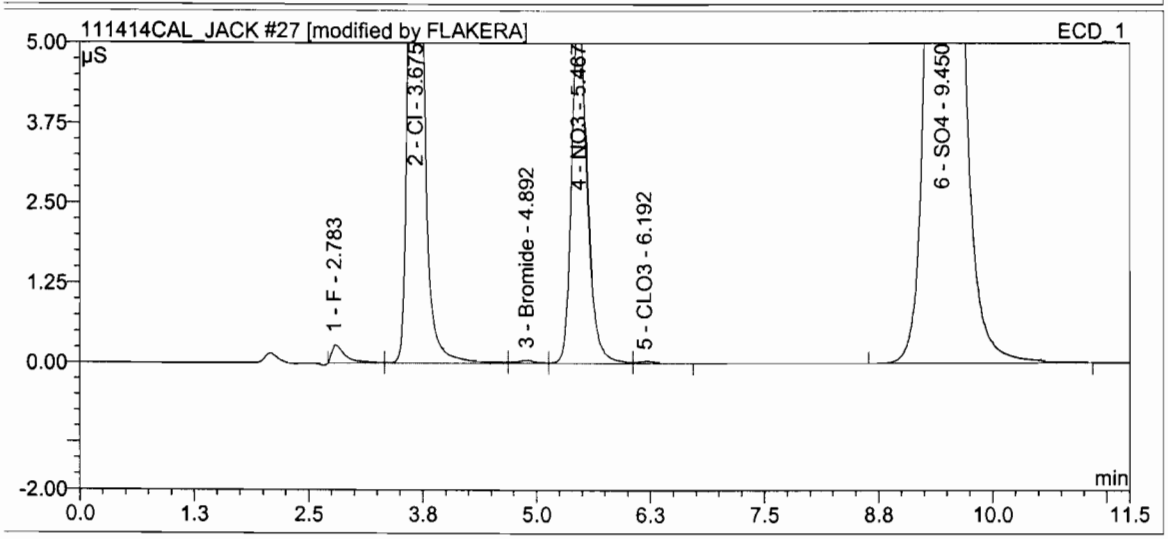
Integration Report - ECD_1

Sample Name:	**9412-A-12 @2**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 15:00**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.78	F	BM *	0.050	0.286	119.4245
2	3.68	Cl	M *	2.964	22.036	9263.2017
3	4.89	Bromide	M *	0.011	0.049	86.8099
4	5.47	NO3	M *	1.086	5.508	1524.8643
5	6.19	CLO3	MB*	0.010	0.035	81.5039
6	9.45	SO4	BMB	7.844	24.212	33549.4814
		TOTAL:		11.96	52.13	44625.29

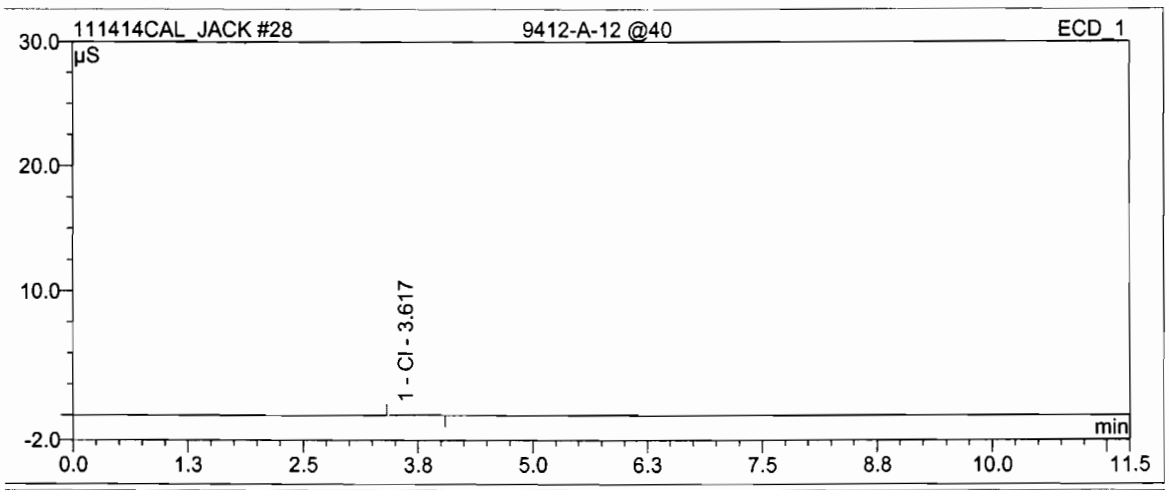


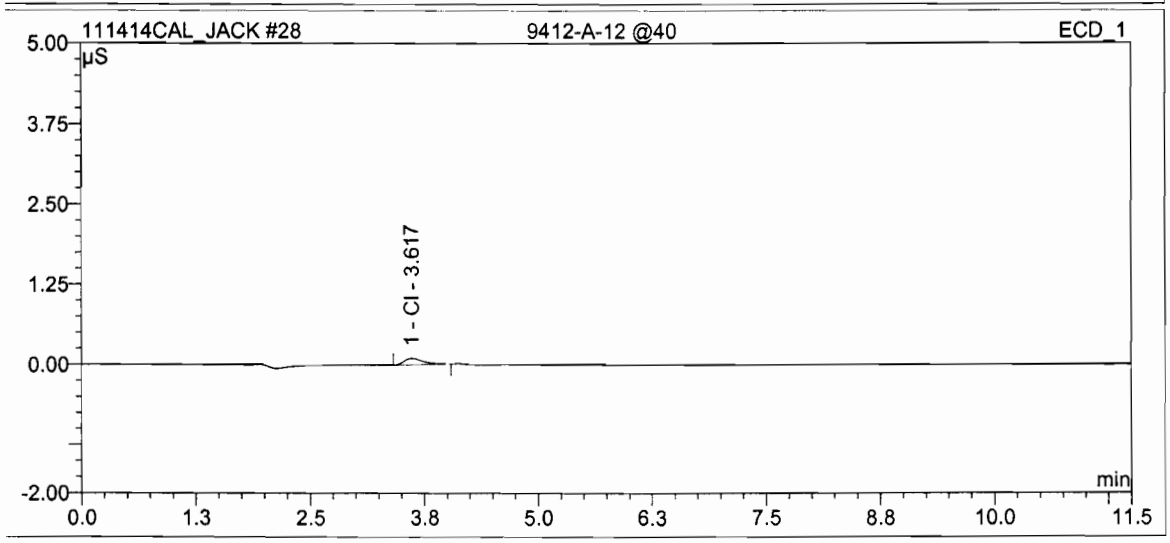


Integration Report - ECD_1

Sample Name:	**9412-A-12 @40**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 15:14**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	3.62	Cl	BMB	0.024	0.101	75.7898
		TOTAL:		0.02	0.10	75.79

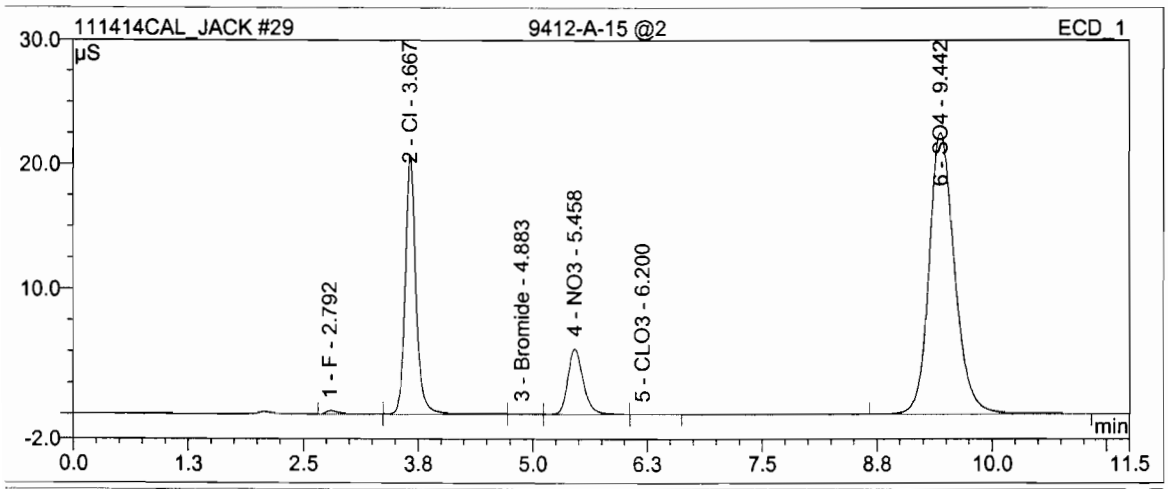


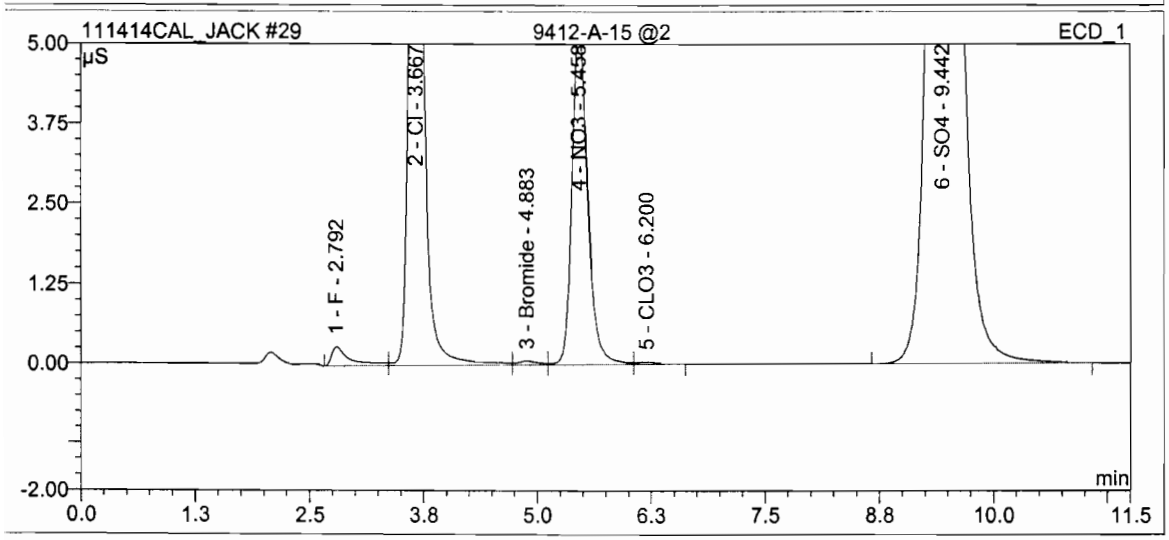


Integration Report - ECD_1

Sample Name:	**9412-A-15 @2**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 15:28**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.79	F	BM	0.071	0.305	171.3437
2	3.67	Cl	M	2.825	20.817	8827.9830
3	4.88	Bromide	M	0.016	0.063	126.6274
4	5.46	NO3	M	1.047	5.273	1470.8150
5	6.20	CLO3	MB	0.010	0.037	80.8095
6	9.44	SO4	BMB	7.318	22.585	31299.1237
		TOTAL:		11.29	49.08	41976.70





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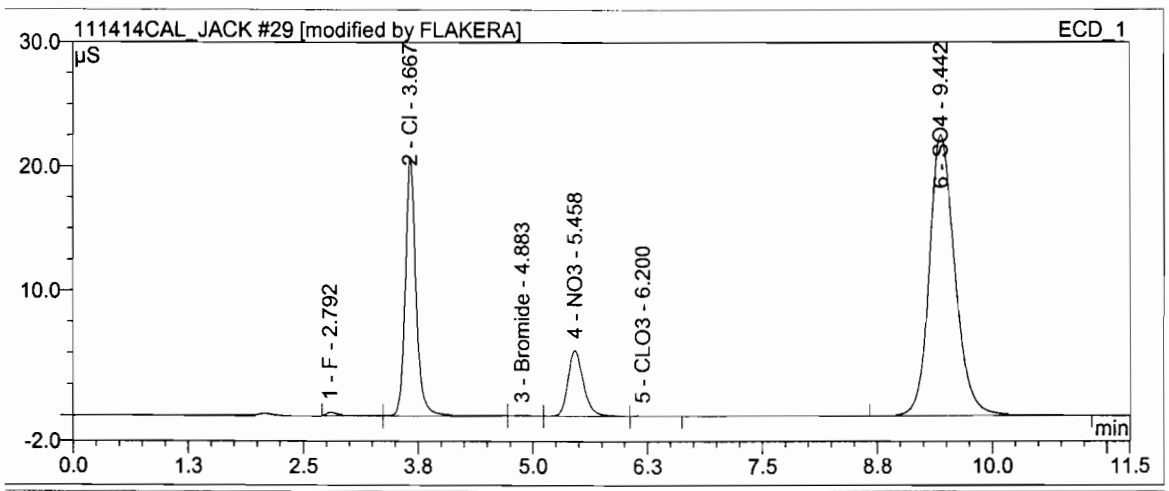
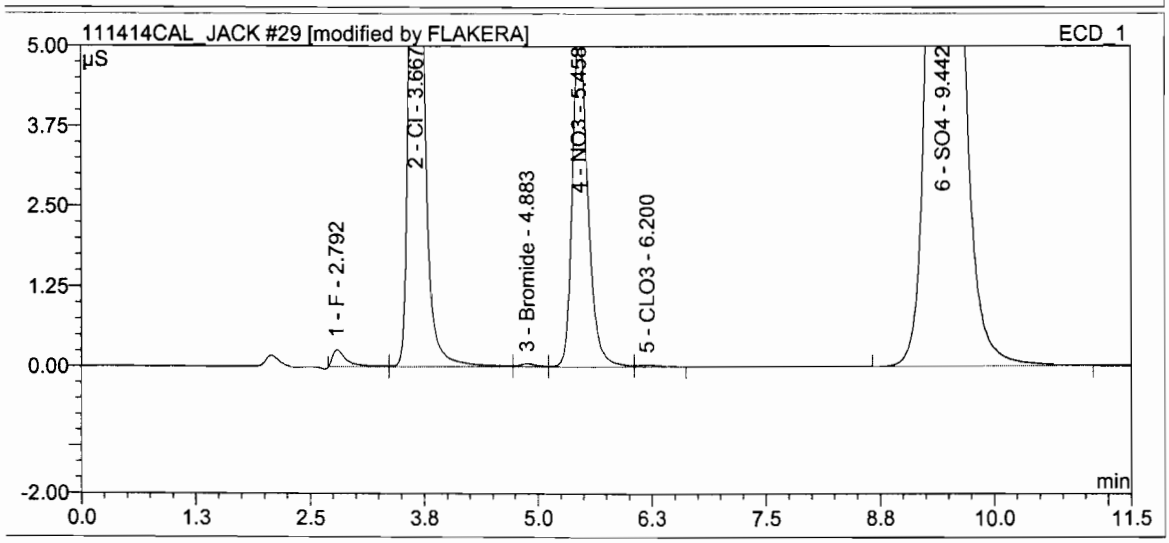
Integration Report - ECD_1

Sample Name:	**9412-A-15 @2**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 15:28**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.79	F	BM *	0.050	0.272	119.8363
2	3.67	Cl	M *	2.794	20.791	8732.1383
3	4.88	Bromide	M *	0.010	0.048	81.0302
4	5.46	NO3	M *	1.039	5.263	1458.8011
5	6.20	CLO3	MB*	0.009	0.033	69.5223
6	9.44	SO4	BMB	7.318	22.585	31299.1237
		TOTAL:		11.22	48.99	41760.45

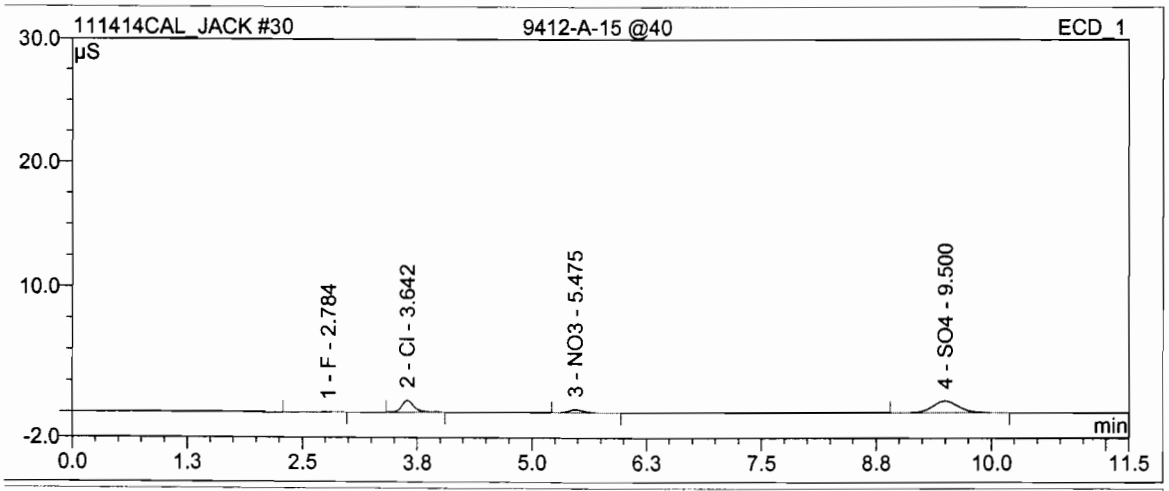


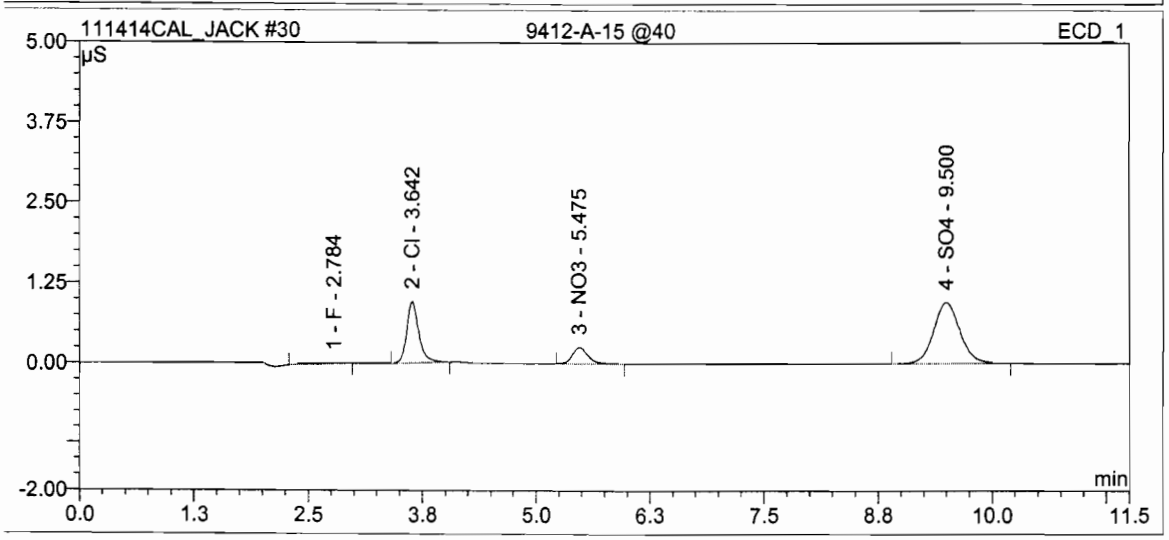


Integration Report - ECD_1

Sample Name:	**9412-A-15 @40**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 15:42**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.78	F	BMB	0.007	0.019	16.9813
2	3.64	Cl	BMB	0.147	0.955	458.8866
3	5.48	NO3	BMB	0.051	0.254	71.6329
4	9.50	SO4	BMB	0.323	0.951	1382.5486
TOTAL:				0.53	2.18	1930.05

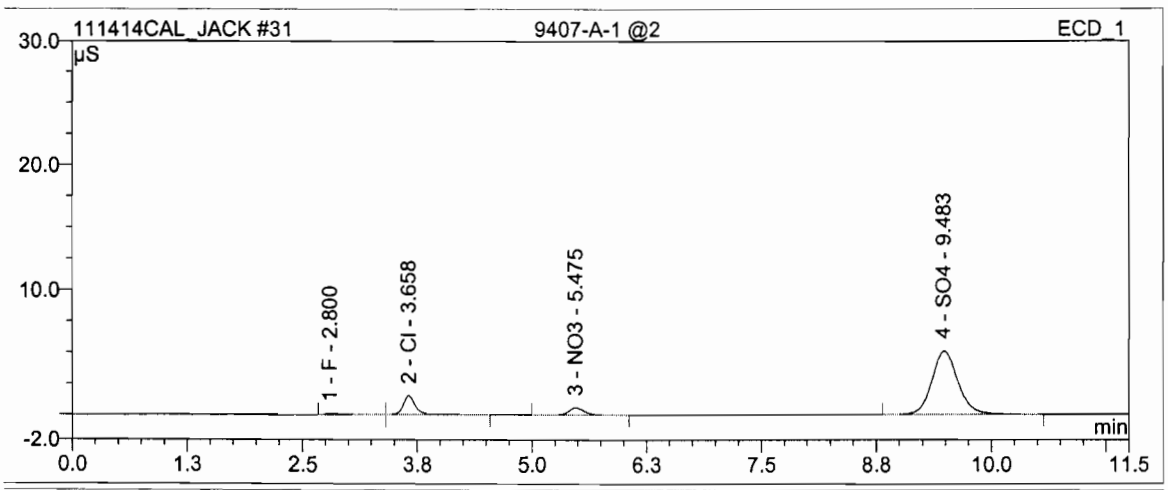


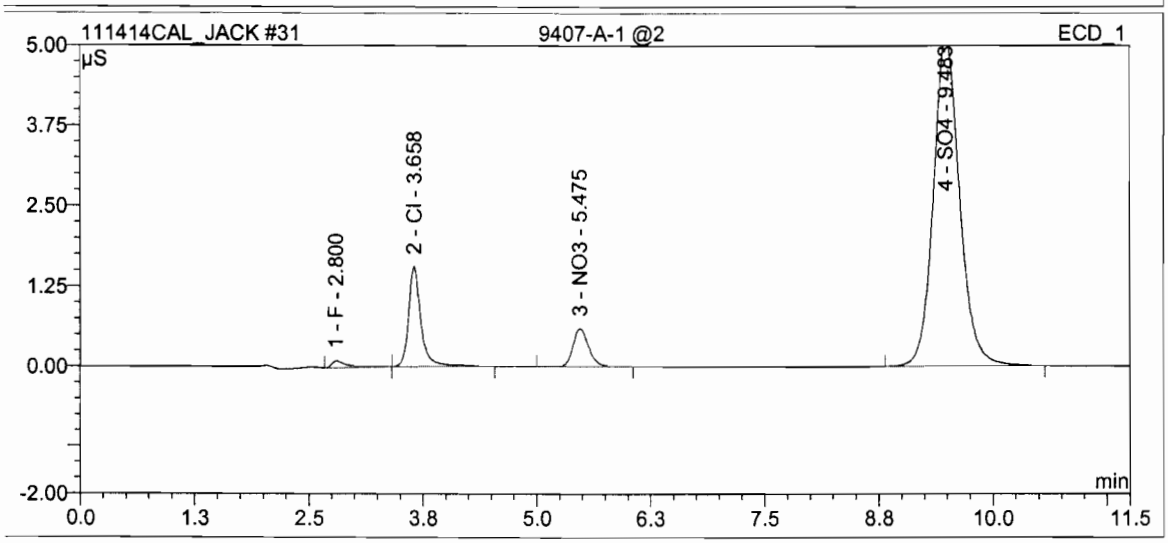


Integration Report - ECD_1

Sample Name:	**9407-A-1 @2**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 15:56**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BMB	0.022	0.109	53.3685
2	3.66	Cl	bMB	0.248	1.560	774.0100
3	5.48	NO3	BMB	0.121	0.596	169.5501
4	9.48	SO4	BMB	1.710	5.117	7316.0289
		TOTAL:		2.10	7.38	8312.96

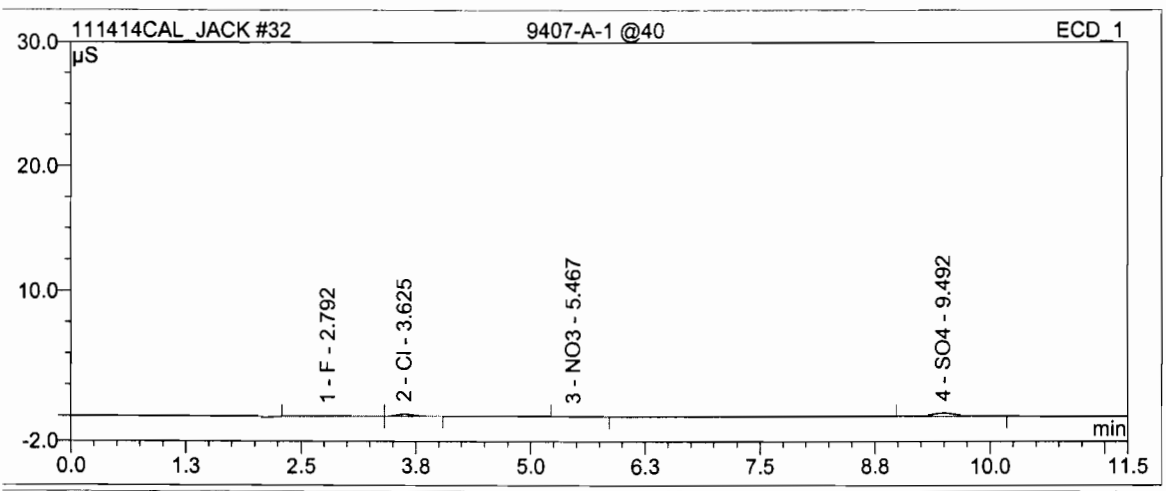


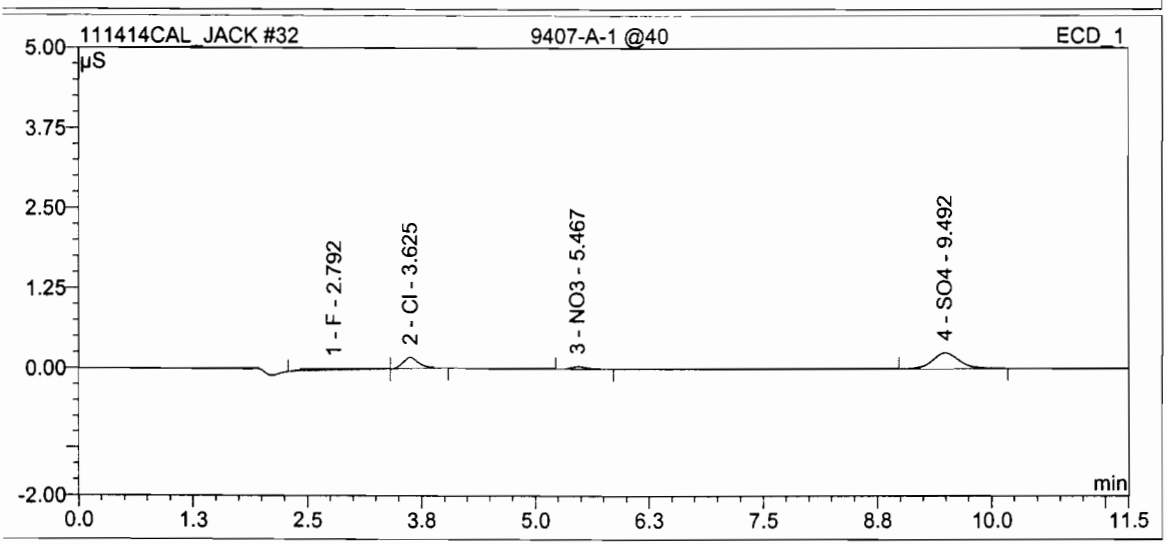


Integration Report - ECD_1

Sample Name:	**9407-A-1 @40**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 16:10**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.79	F	BMB	0.019	0.028	45.9494
2	3.63	Cl	bMB	0.037	0.179	116.0586
3	5.47	NO3	BMB	0.009	0.042	13.1241
4	9.49	SO4	BMB	0.087	0.249	371.2413
TOTAL:				0.15	0.50	546.37

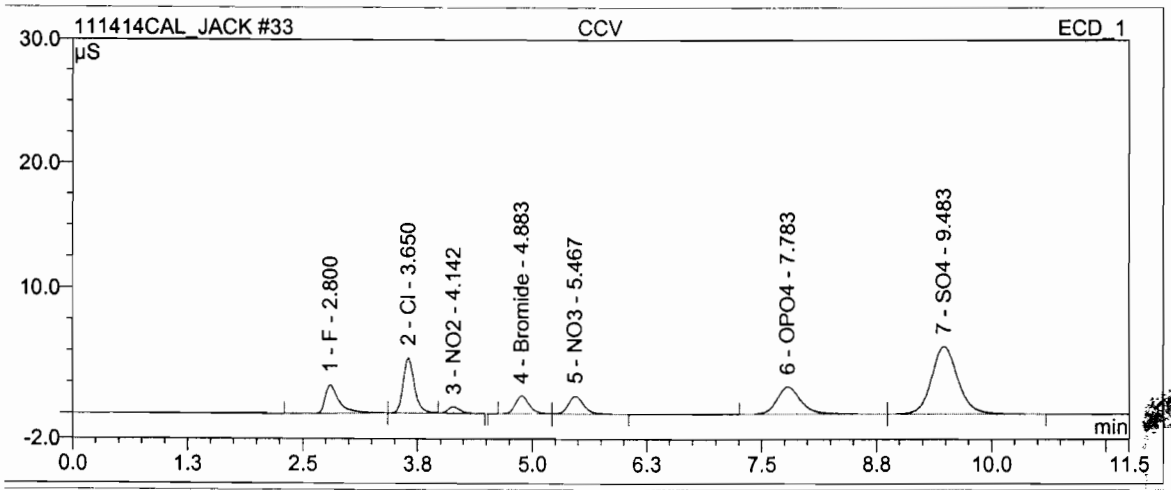


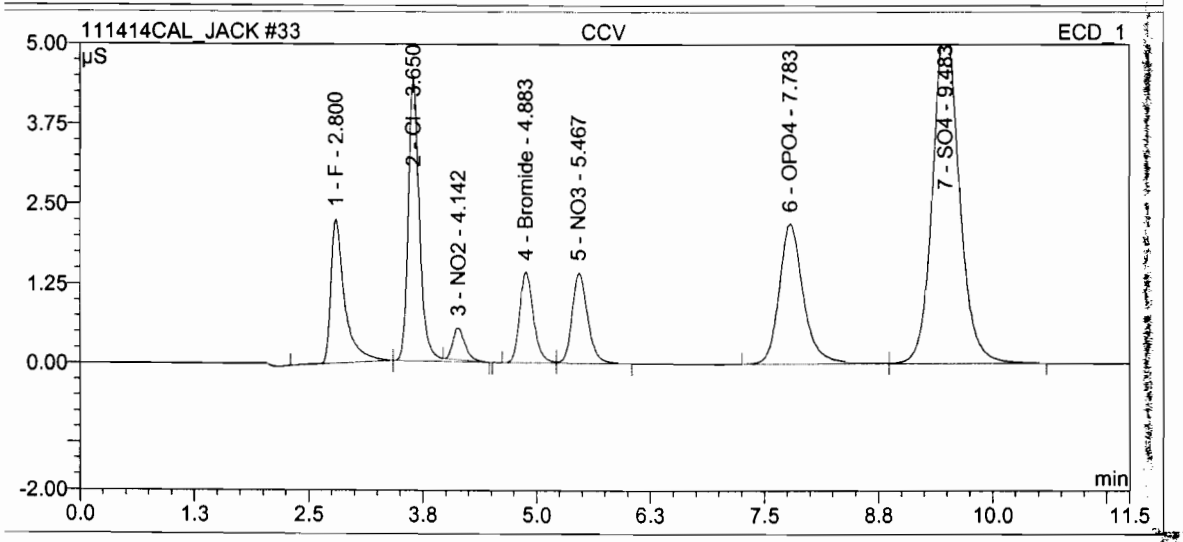


Integration Report - ECD_1

Sample Name:	**CCV**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 16:24**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BMb	0.403	2.260	971.2157
2	3.65	Cl	bMB	0.643	4.410	2008.1876
3	4.14	NO2	Rd	0.077	0.497	122.6129
4	4.88	Bromide	BM	0.254	1.433	1980.7610
5	5.47	NO3	MB	0.285	1.420	399.7891
6	7.78	OPO4	BM	0.686	2.199	7952.4225
7	9.48	SO4	MB	1.815	5.412	7762.0966
		TOTAL:		4.16	17.63	21197.09





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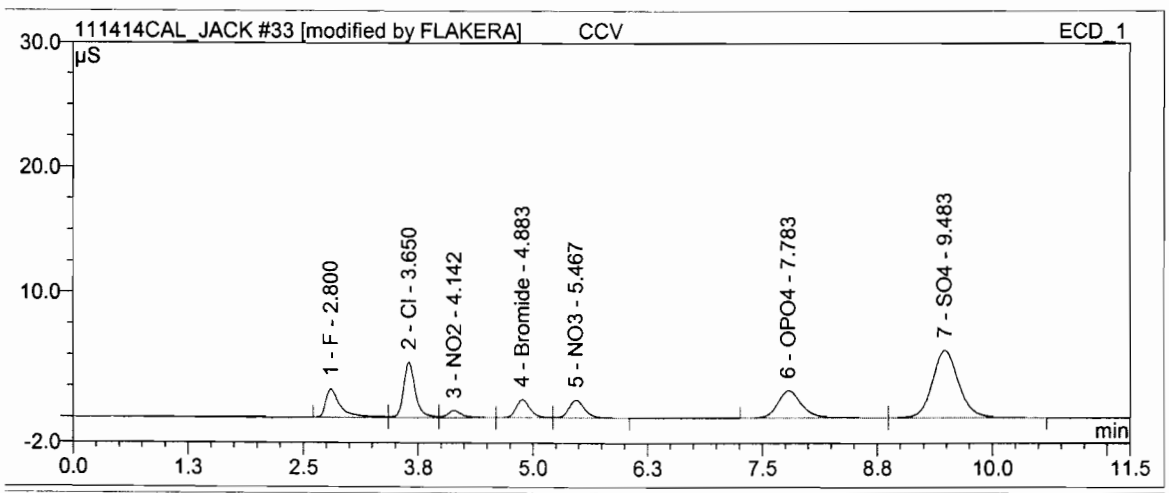
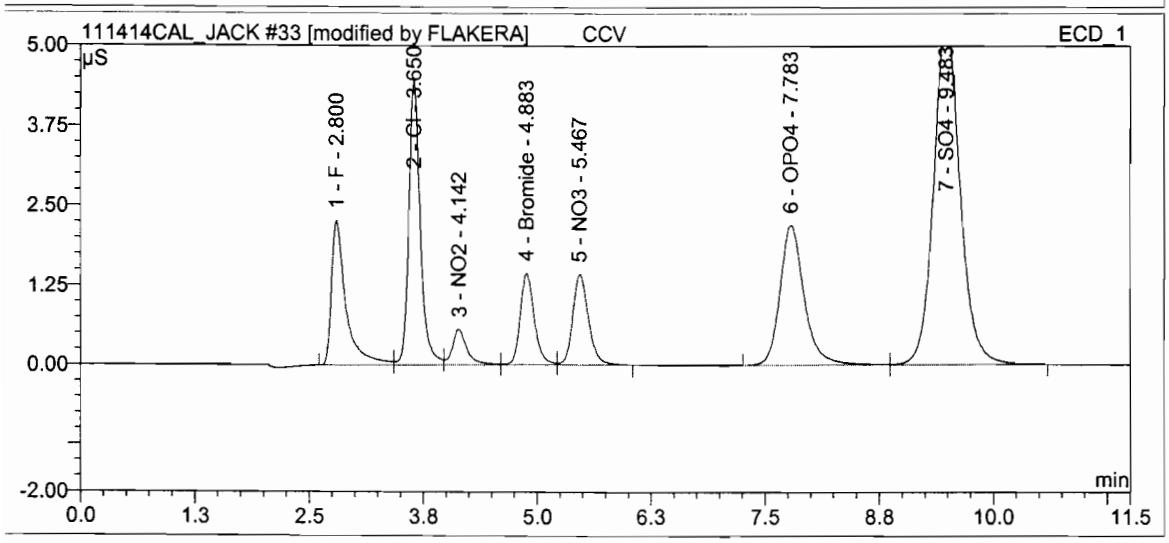
F, Cl, Br, NO2, NO3

Integration Report - ECD_1

Sample Name:	**CCV**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 16:24**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BM *	0.420	2.268	1010.5937
2	3.65	Cl	M *	0.653	4.454	2041.8488
3	4.14	NO2	M *	0.106	0.560	168.6832
4	4.88	Bromide	M *	0.261	1.445	2037.5791
5	5.47	NO3	MB*	0.288	1.426	404.8328
6	7.78	OPO4	BM	0.686	2.199	7952.4225
7	9.48	SO4	MB	1.815	5.412	7762.0966
		TOTAL:		4.23	17.76	21378.06

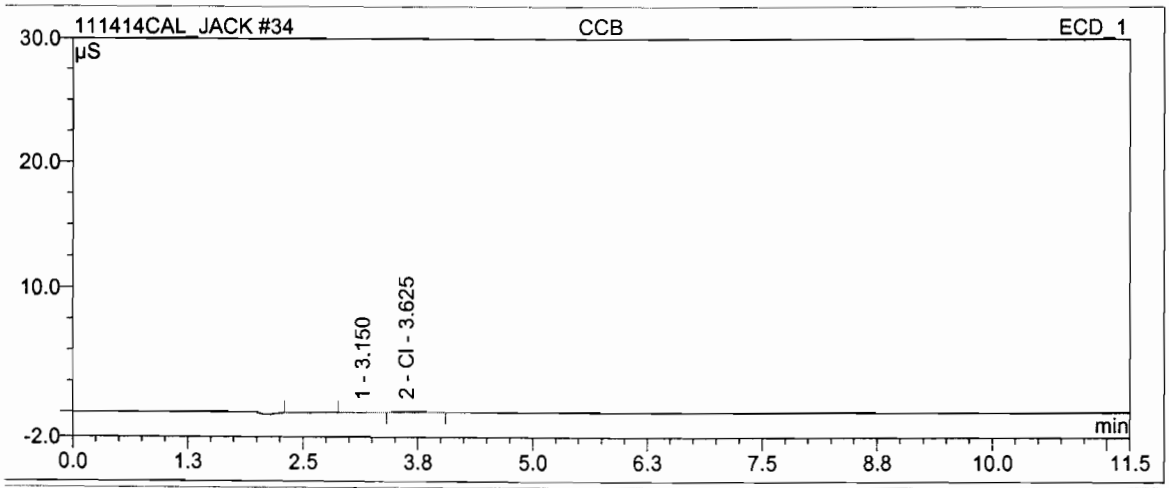


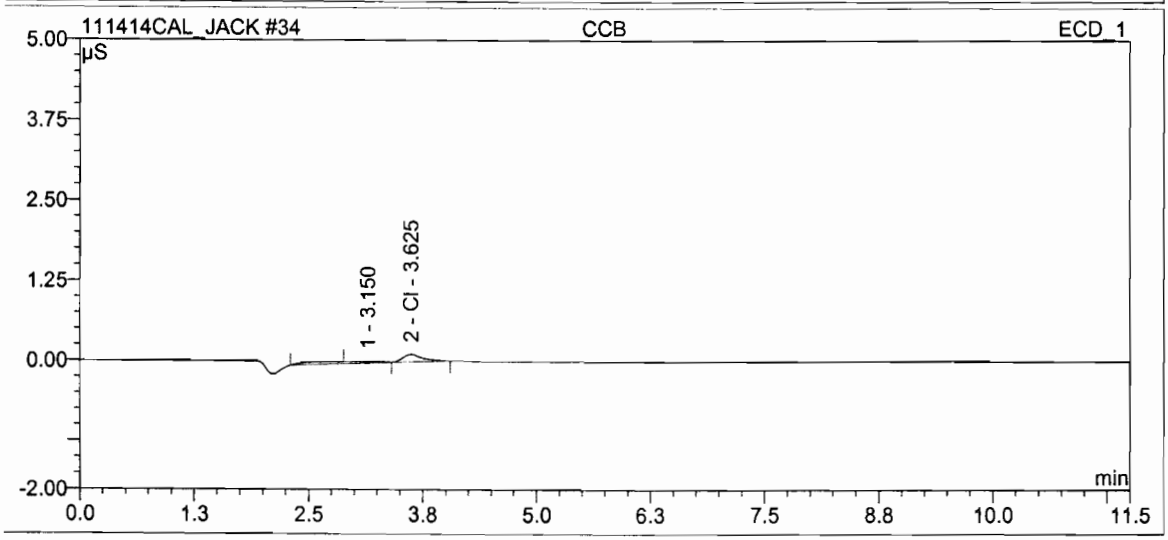


Integration Report - ECD_1

Sample Name:	**CCB**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 16:38**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
2	3.63	Cl	BMB	0.059	0.118	185.9014
		TOTAL:		0.06	0.12	185.90





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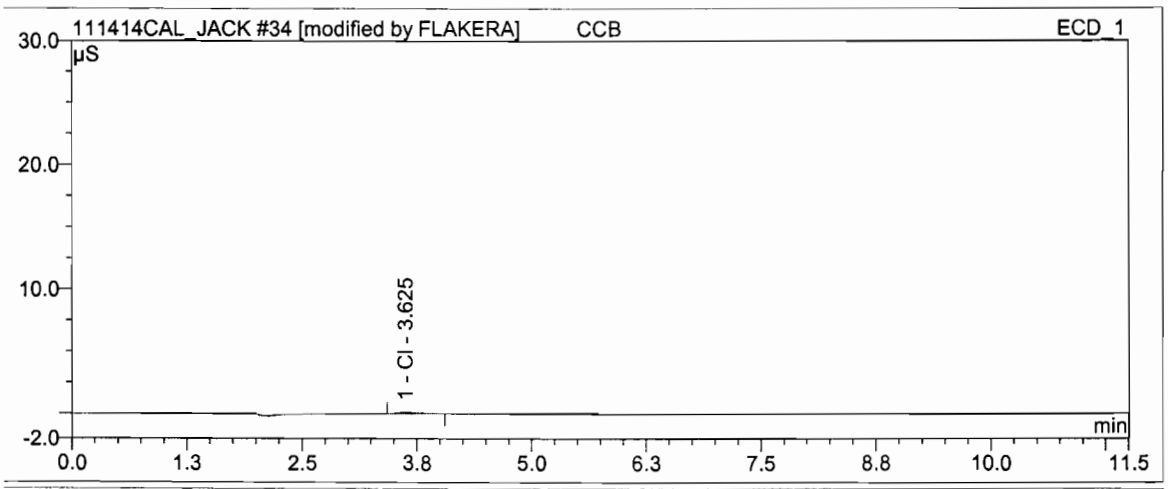
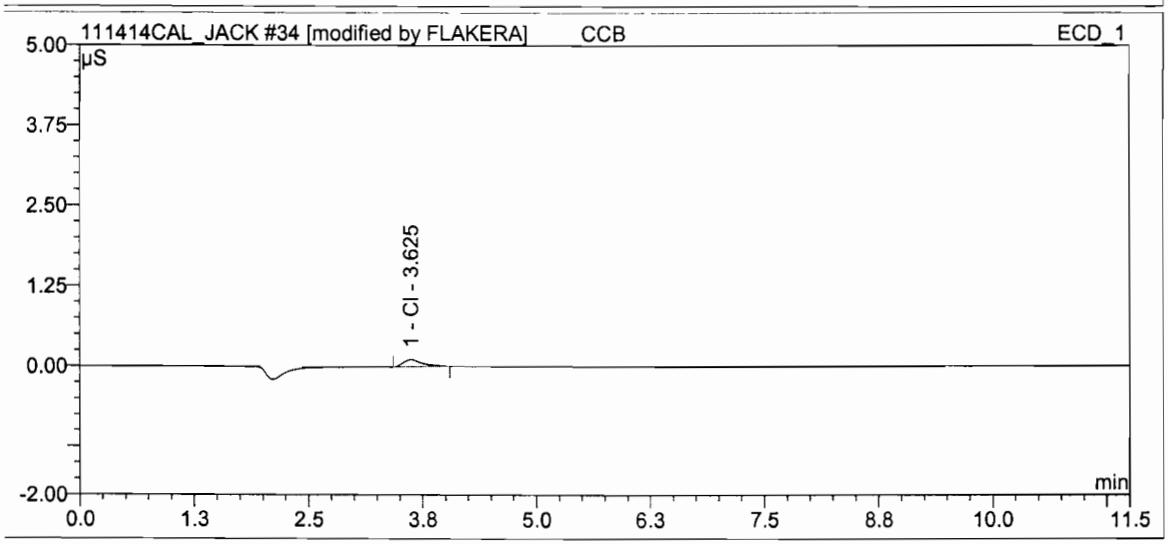
Integration Report - ECD_1

Sample Name:	**CCB**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 16:38**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	3.63	Cl	BMB*	0.027	0.112	85.6381
		TOTAL:		0.03	0.11	85.64

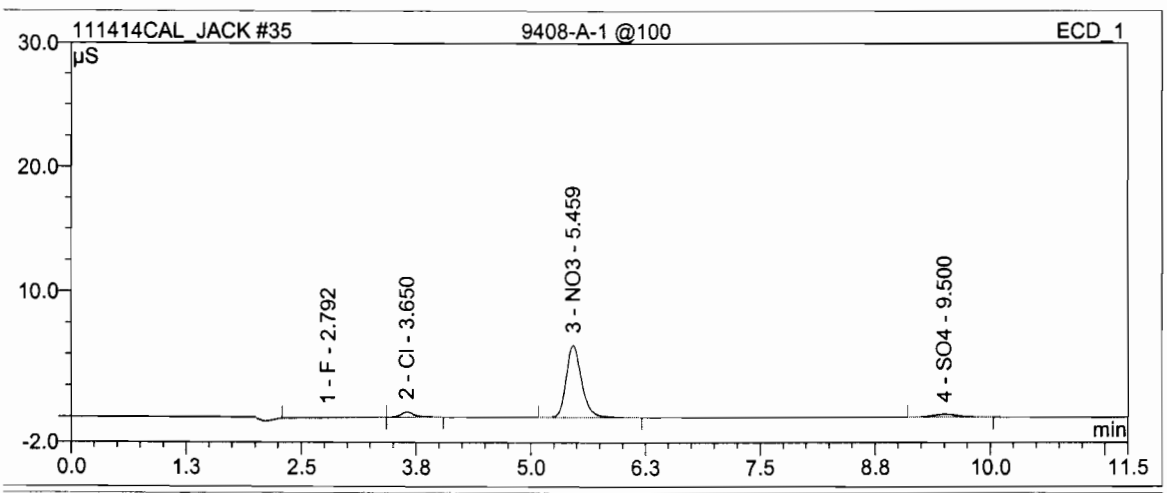


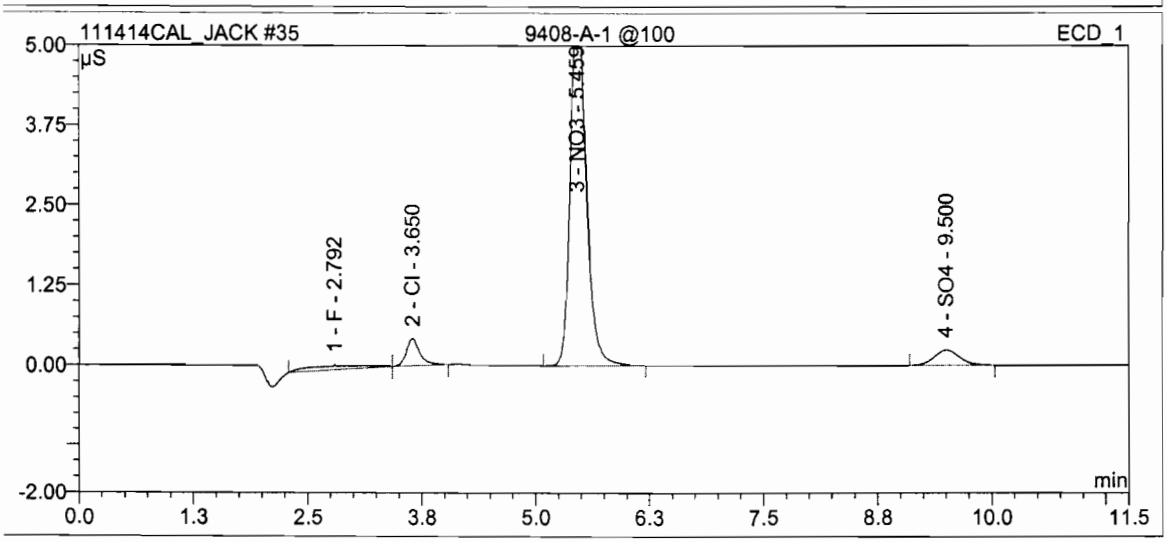


Integration Report - ECD_1

Sample Name:	**9408-A-1 @100**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 16:51**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.79	F	BMB	0.045	0.083	109.4869
2	3.65	Cl	bMB	0.074	0.427	230.0201
3	5.46	NO3	BMB	1.130	5.757	1586.8795
4	9.50	SO4	BMB	0.077	0.236	330.5460
		TOTAL:		1.33	6.50	2256.93

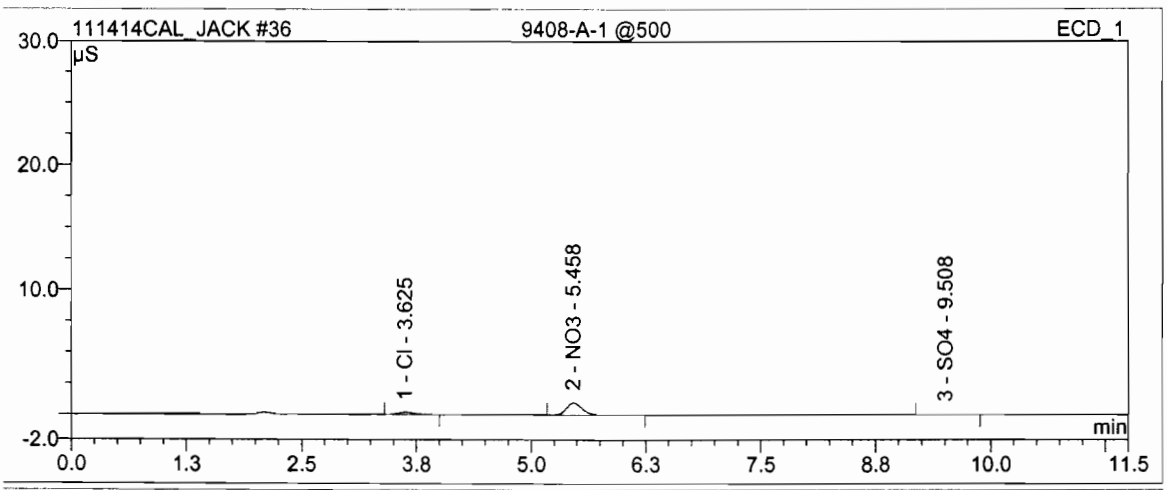


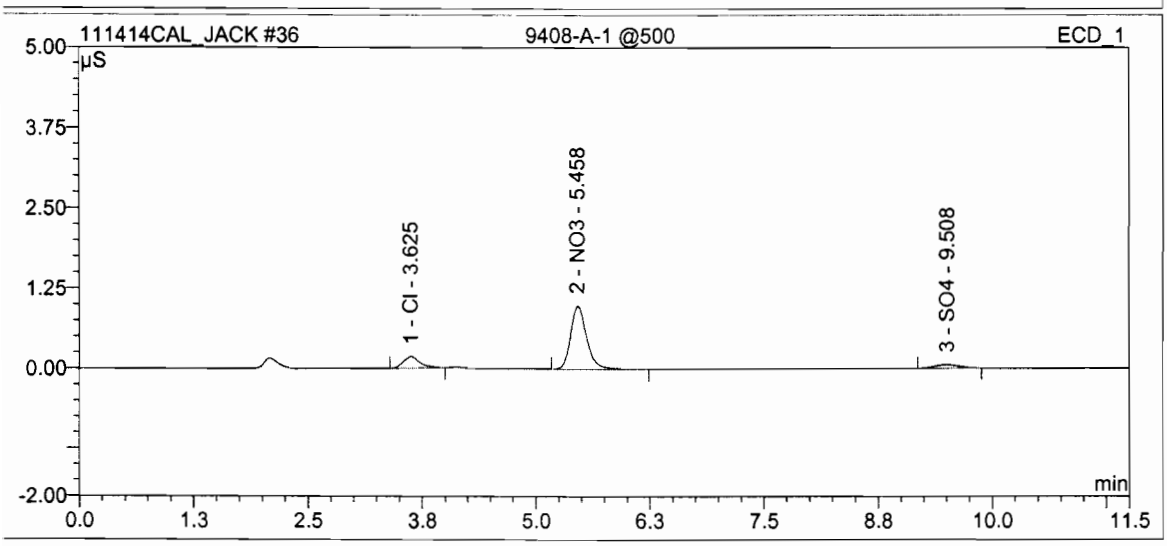


Integration Report - ECD_1

Sample Name:	**9408-A-1 @500**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 17:05**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	3.63	Cl	BMB	0.039	0.182	120.4199
2	5.46	NO3	BMB	0.204	0.987	285.8678
3	9.51	SO4	BMB	0.017	0.055	71.7837
		TOTAL:		0.26	1.22	478.07

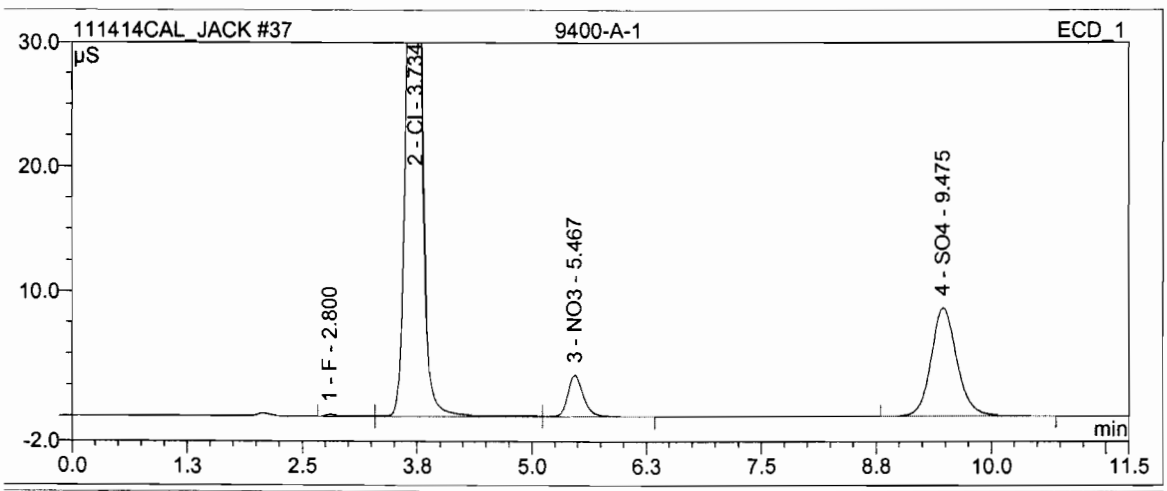


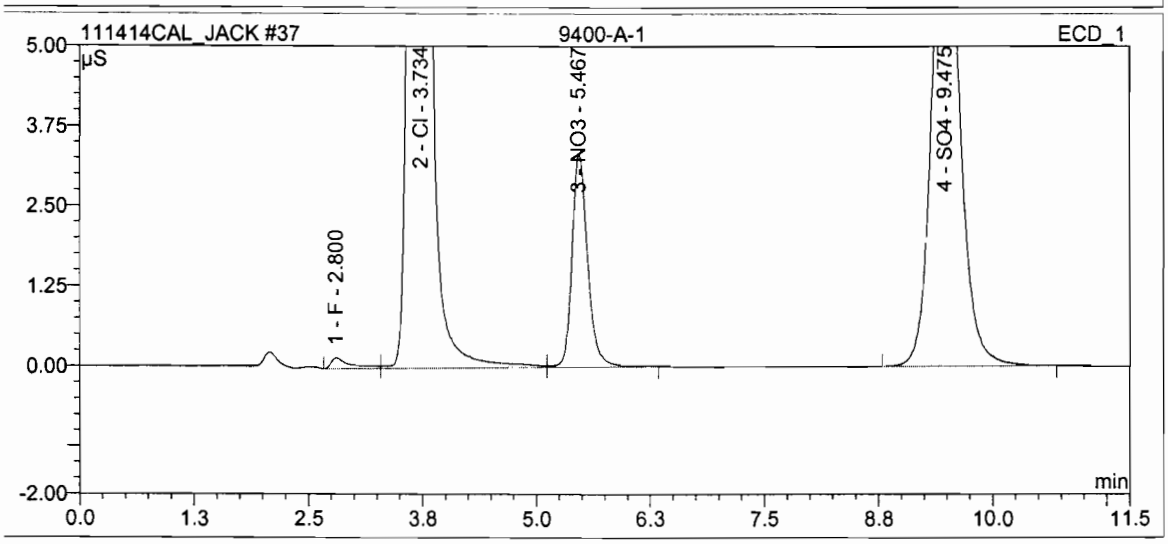


Integration Report - ECD_1

Sample Name:	**9400-A-1**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 17:19**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BM	0.043	0.171	102.5453
2	3.73	Cl	M	12.588	87.816	39337.5279
3	5.47	NO3	MB	0.664	3.323	932.2774
4	9.48	SO4	BMB	2.863	8.692	12244.1623
		TOTAL:		16.16	100.00	52616.51

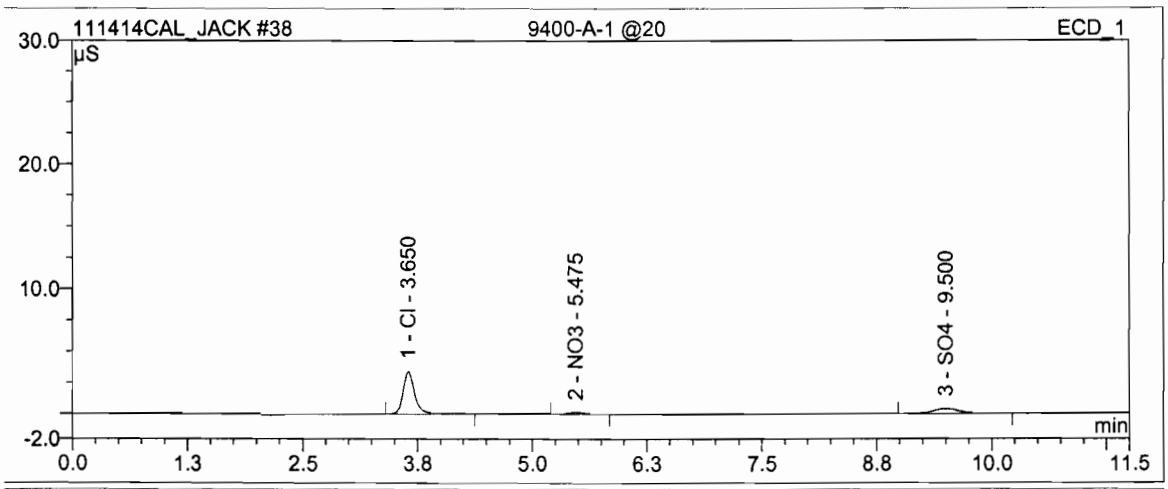


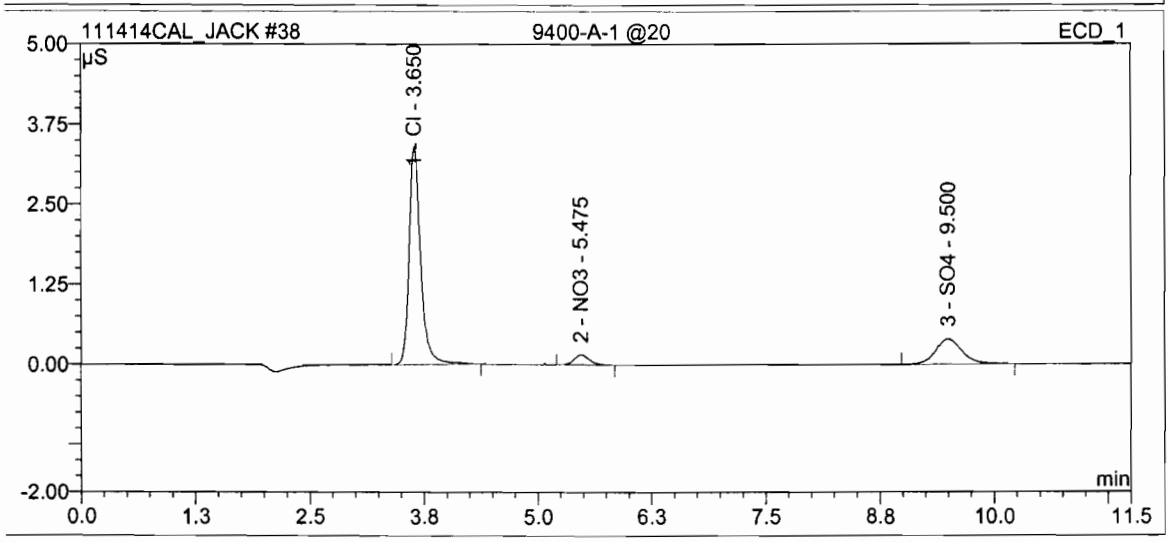


Integration Report - ECD_1

Sample Name:	**9400-A-1 @20**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 17:33**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	3.65	Cl	BMB	0.501	3.413	1565.7612
2	5.48	NO3	BMB	0.031	0.159	43.7752
3	9.50	SO4	BMB	0.134	0.394	574.2018
		TOTAL:		0.67	3.96	2183.74

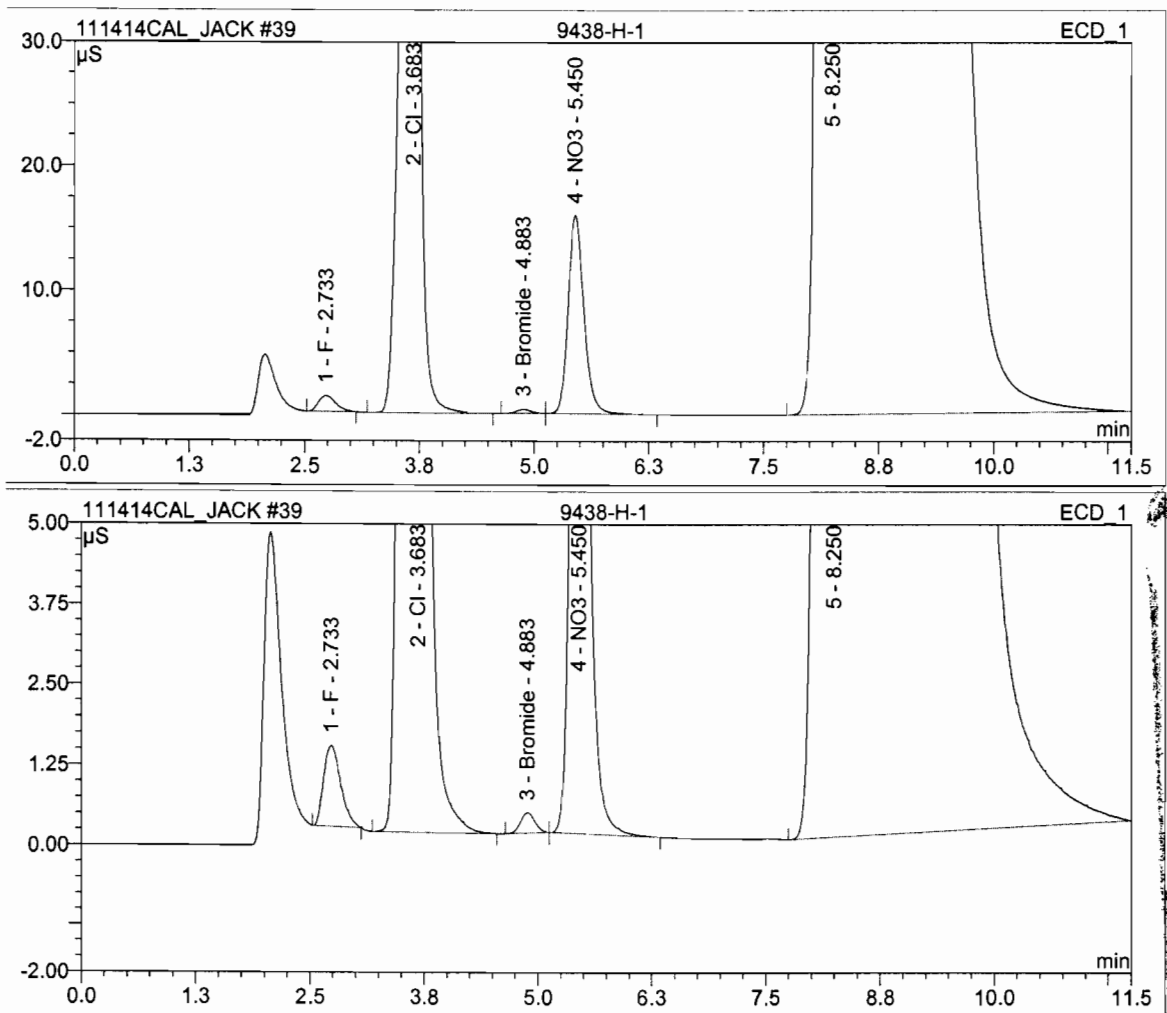




Integration Report - ECD_1

Sample Name:	**9438-H-1**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 17:47**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.73	F	BMB	0.274	1.258	658.6744
2	3.68	Cl	BMB	19.412	97.821	60664.4986
3	4.88	Bromide	BMb	0.058	0.320	453.6045
4	5.45	NO3	bMB	3.172	15.925	4455.6468
		TOTAL:		22.92	115.32	66232.42



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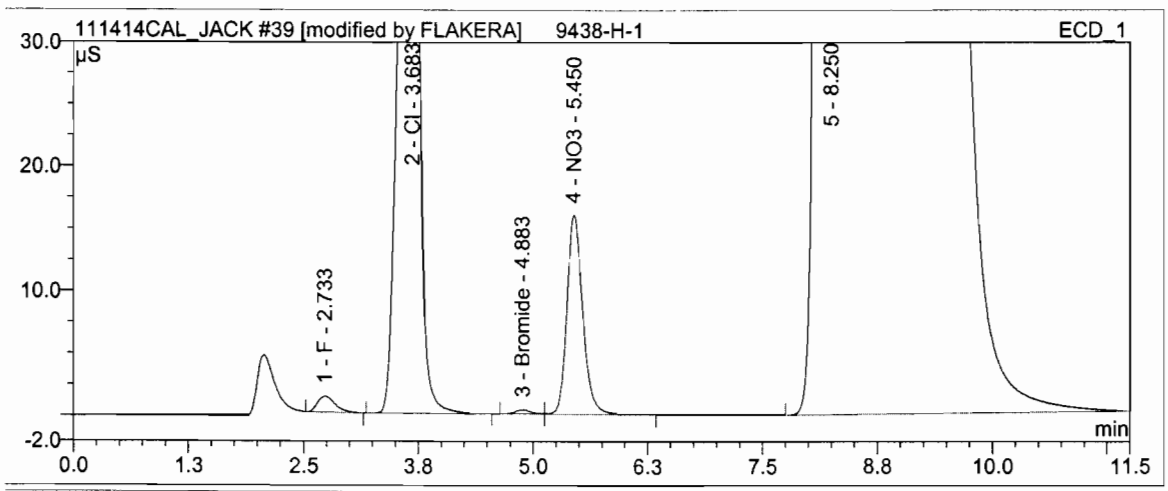
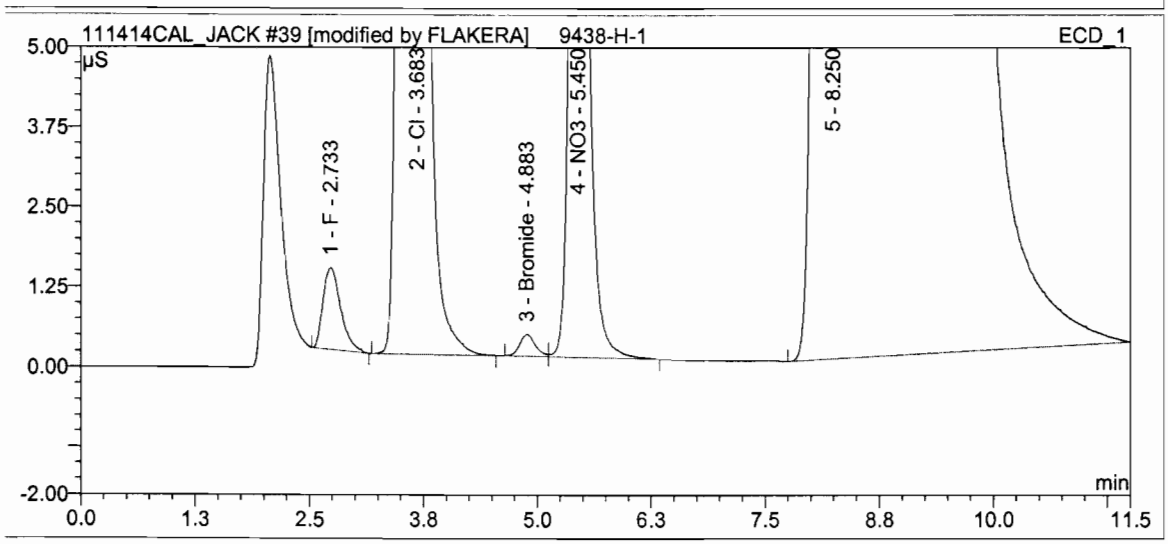
Integration Report - ECD_1

Sample Name:	**9438-H-1**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 17:47**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.73	F	BMB*	0.287	1.275	690.9820
2	3.68	Cl	BMB	19.412	97.821	60664.4986
3	4.88	Bromide	BM *	0.067	0.338	522.0142
4	5.45	NO3	MB*	3.194	15.952	4486.6437
		TOTAL:		22.96	115.39	66364.14

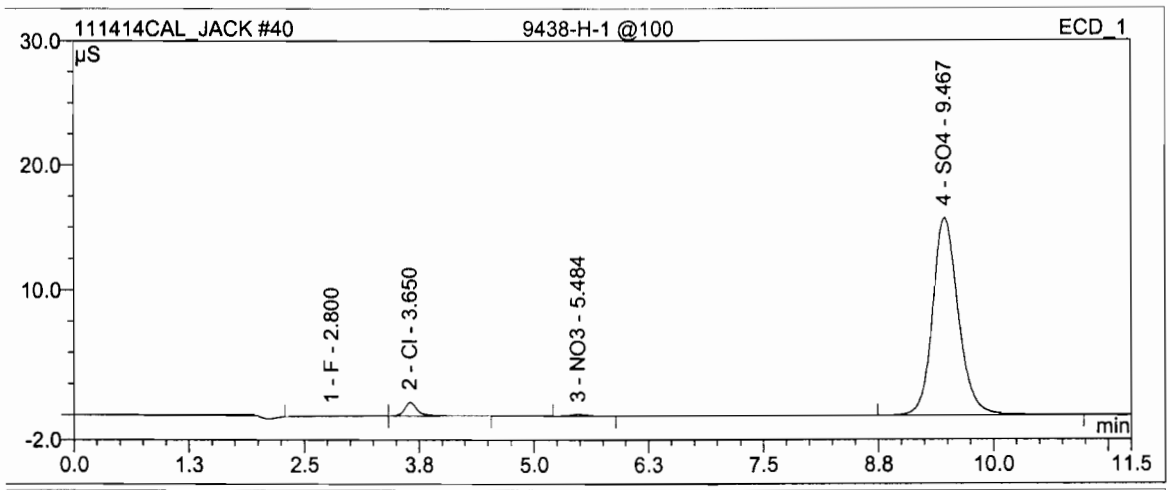


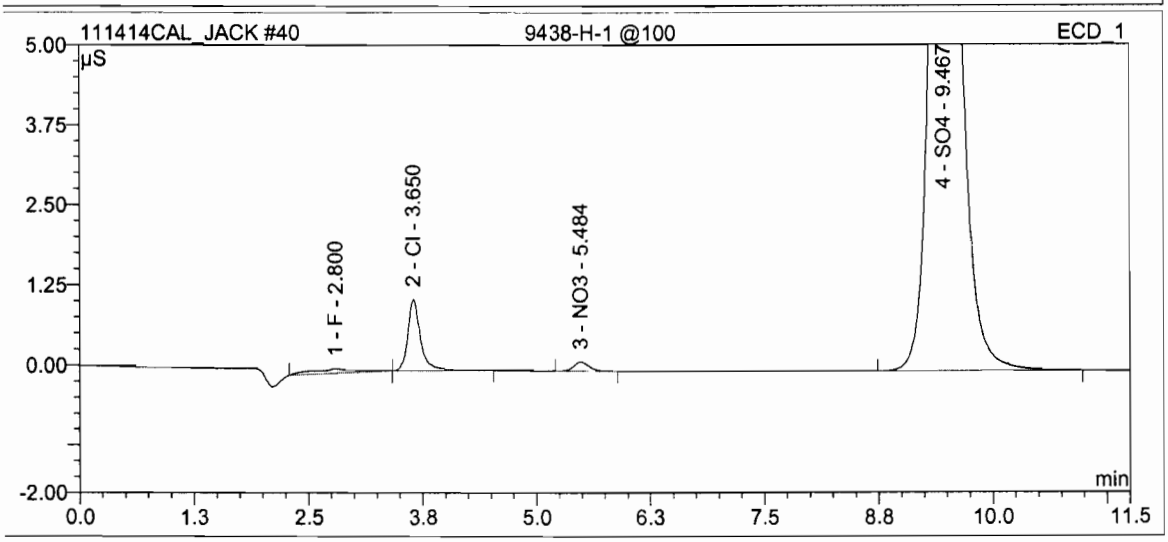


Integration Report - ECD_1

Sample Name:	**9438-H-1 @100**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 18:01**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BMB	0.040	0.069	96.7126
2	3.65	Cl	bMB	0.185	1.113	576.6540
3	5.48	NO3	BMB	0.028	0.142	39.9837
4	9.47	SO4	BMB	5.165	15.798	22090.7687
TOTAL:				5.42	17.12	22804.12

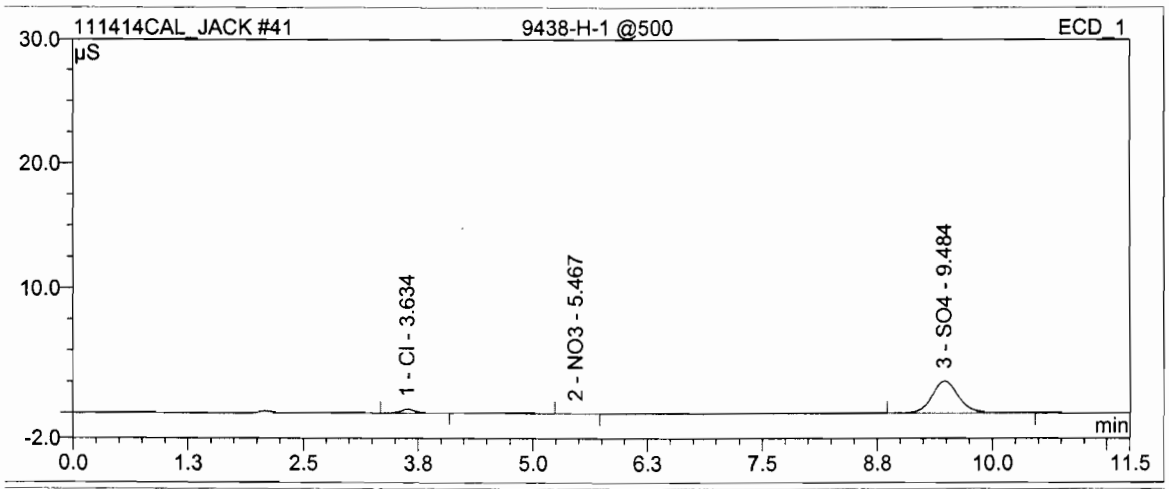


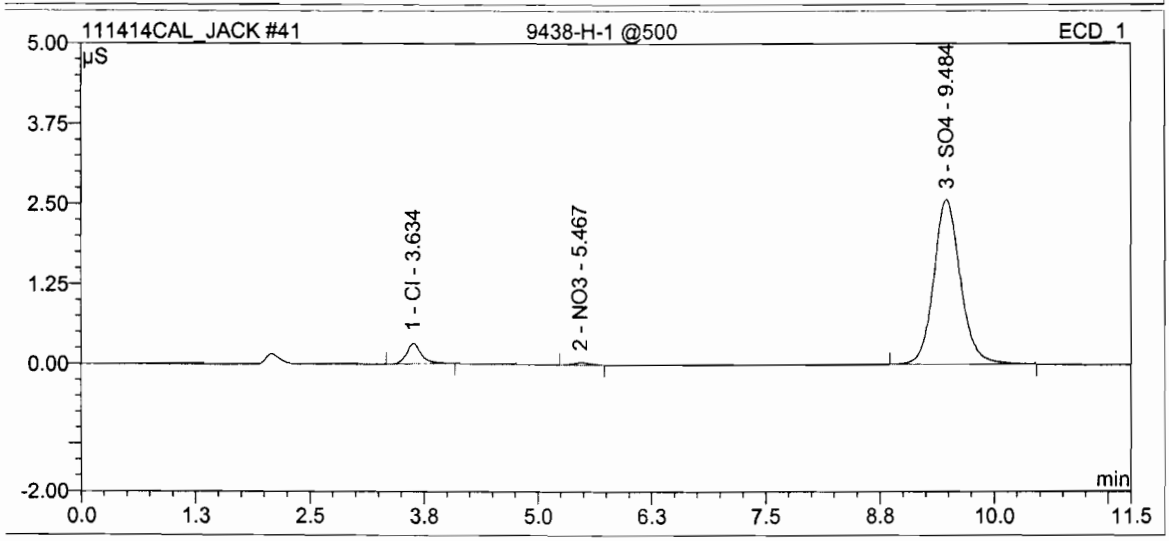


Integration Report - ECD_1

Sample Name:	**9438-H-1 @500**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 18:15**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	3.63	Cl	BMB	0.061	0.322	191.8242
2	5.47	NO3	BMB	0.007	0.036	10.0194
3	9.48	SO4	BMB	0.877	2.570	3750.8750
		TOTAL:		0.95	2.93	3952.72

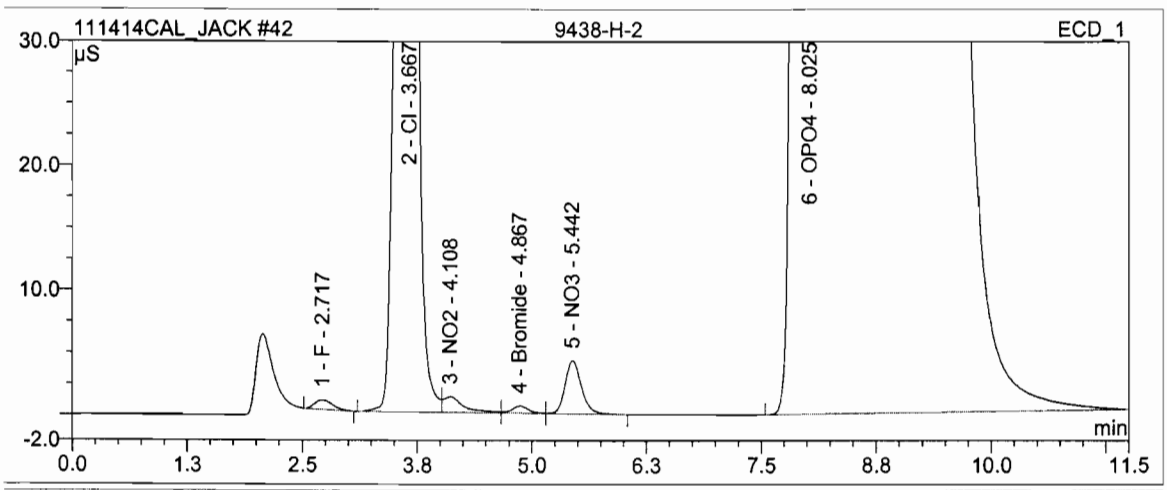


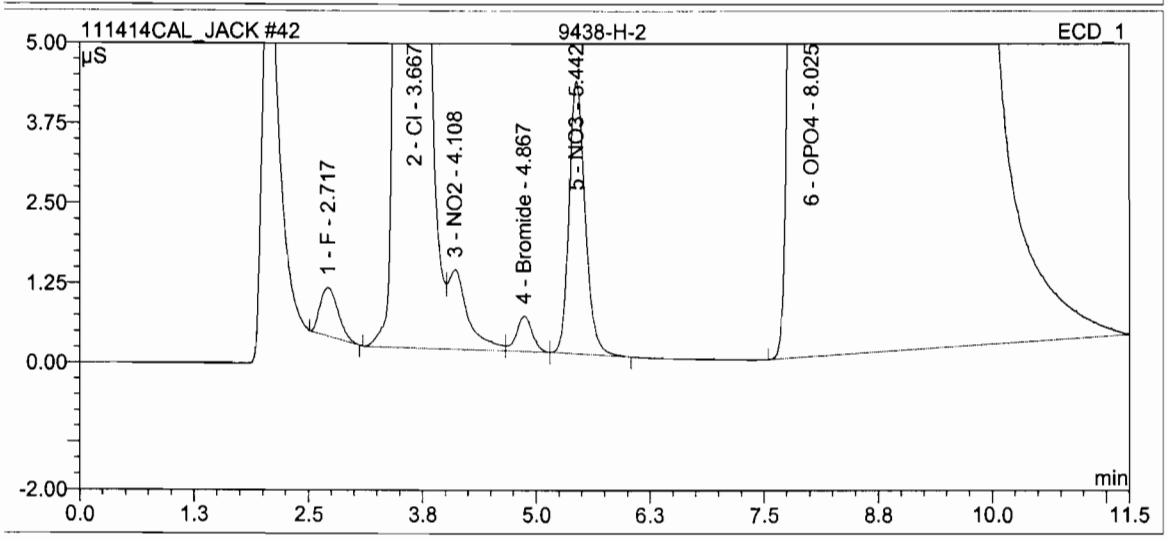


Integration Report - ECD_1

Sample Name:	**9438-H-2**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 18:29**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.72	F	BMB	0.175	0.758	422.2104
2	3.67	Cl	BM	26.882	126.217	84007.6981
3	4.11	NO2	M	0.318	1.250	507.5899
4	4.87	Bromide	Mb	0.111	0.559	869.4335
5	5.44	NO3	bMB	0.873	4.260	1225.7870
6	8.03	OPO4	BMB	927.741	932.772	10754672.8871
		TOTAL:		956.10	1065.82	10841705.61





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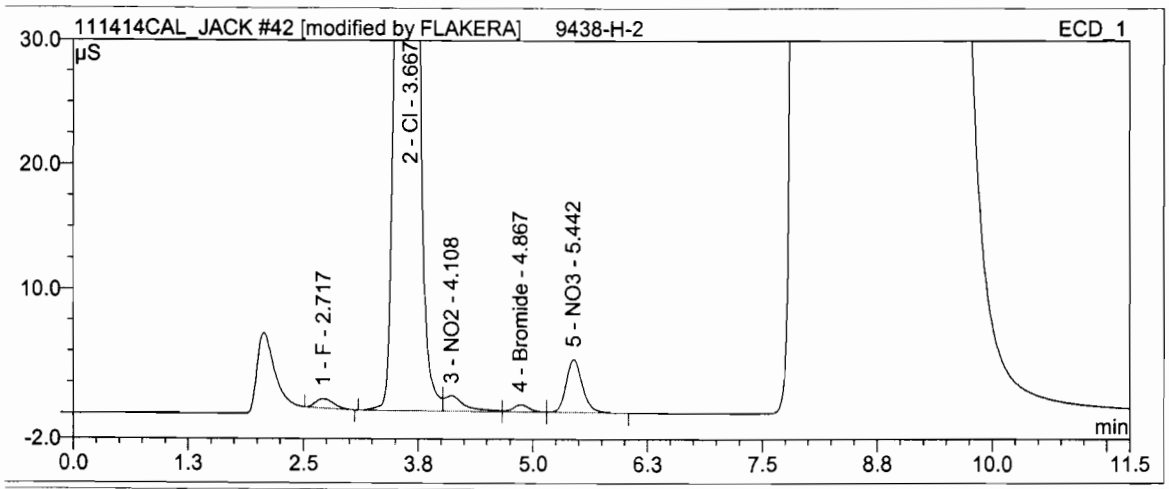
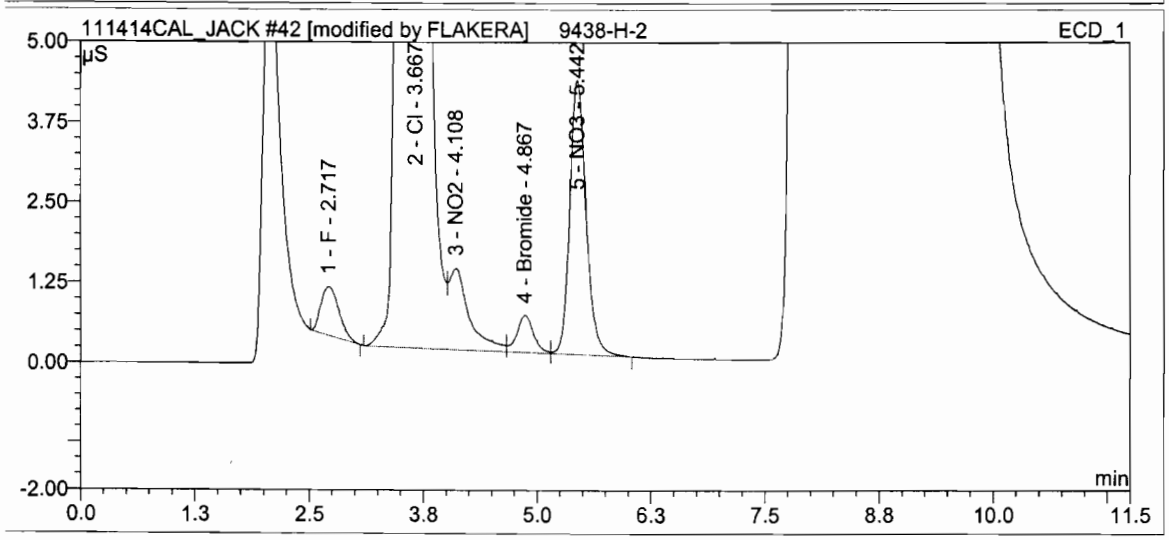
Integration Report - ECD_1

Sample Name:	**9438-H-2**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 18:29**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.72	F	BMB	0.175	0.758	422.2104
2	3.67	Cl	BM *	26.887	126.225	84024.5593
3	4.11	NO2	M *	0.328	1.263	524.1481
4	4.87	Bromide	M *	0.123	0.581	957.0069
5	5.44	NO3	MB*	0.884	4.277	1242.2704
		TOTAL:		28.40	133.10	87170.20

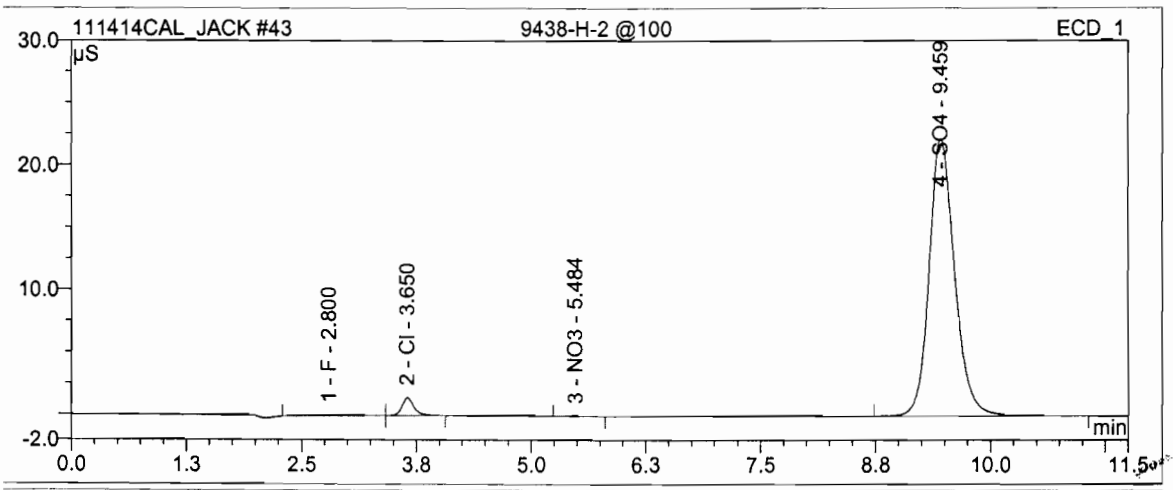


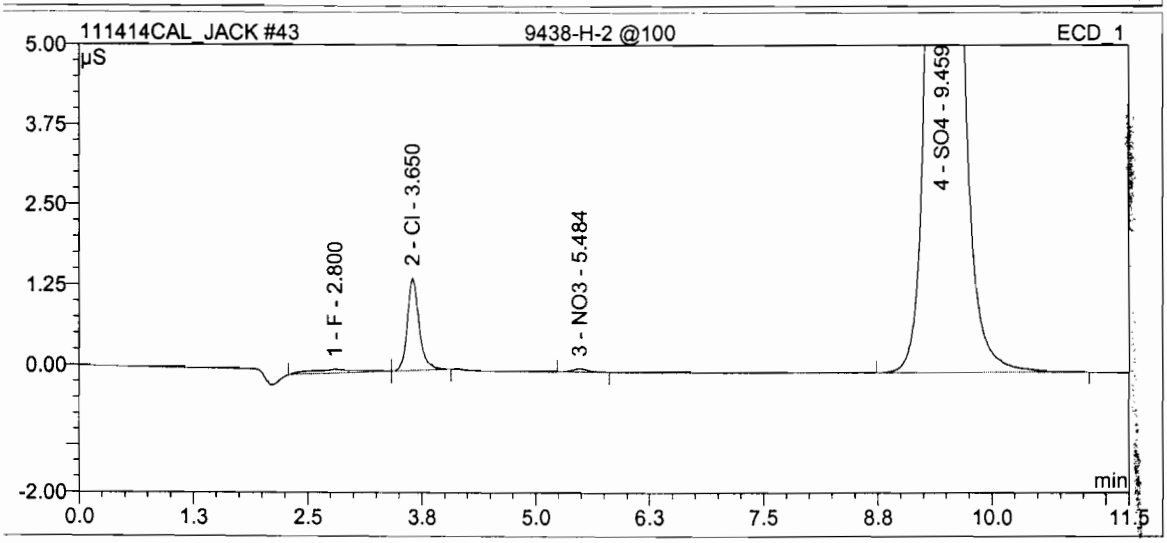


Integration Report - ECD_1

Sample Name:	**9438-H-2 @100**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 18:43**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BM	0.038	0.059	90.3477
2	3.65	Cl	MB	0.215	1.434	672.9753
3	5.48	NO3	BMB	0.010	0.051	14.0150
4	9.46	SO4	BMB	7.204	22.245	30814.5319
TOTAL:				7.47	23.79	31591.87





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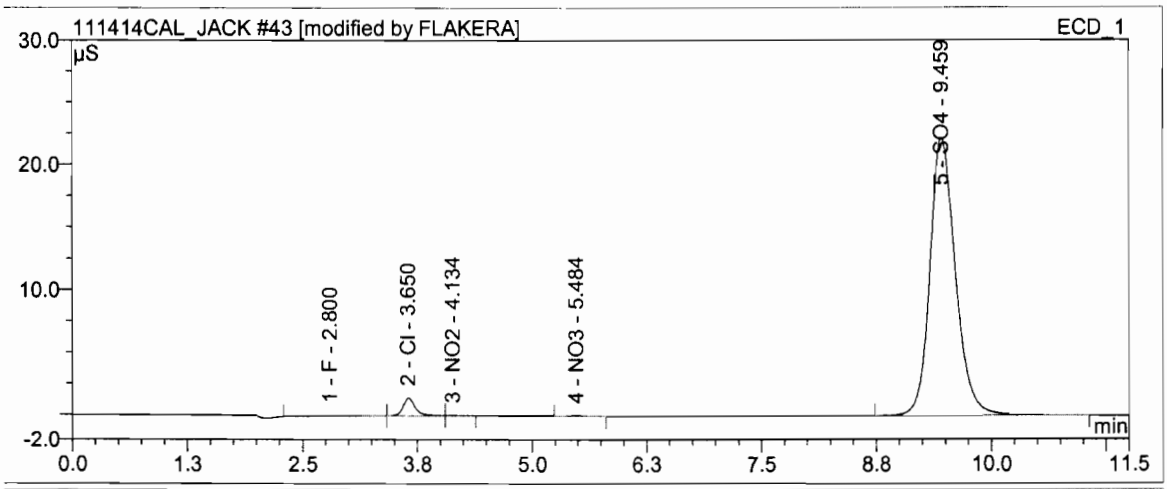
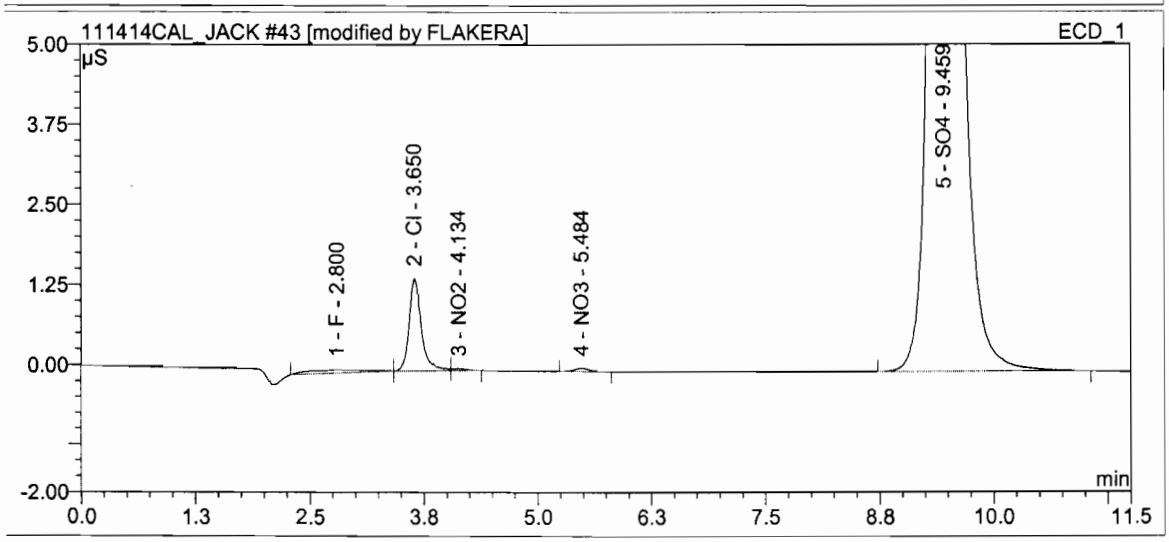
Integration Report - ECD_1

Sample Name:	**9438-H-2 @100**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 18:43**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BMb*	0.038	0.060	90.6808
2	3.65	Cl	bM *	0.224	1.443	699.1179
3	4.13	NO2	MB*	0.005	0.031	8.5338
4	5.48	NO3	BMB	0.010	0.051	14.0150
5	9.46	SO4	BMB	7.204	22.245	30814.5319
		TOTAL:		7.48	23.83	31626.88

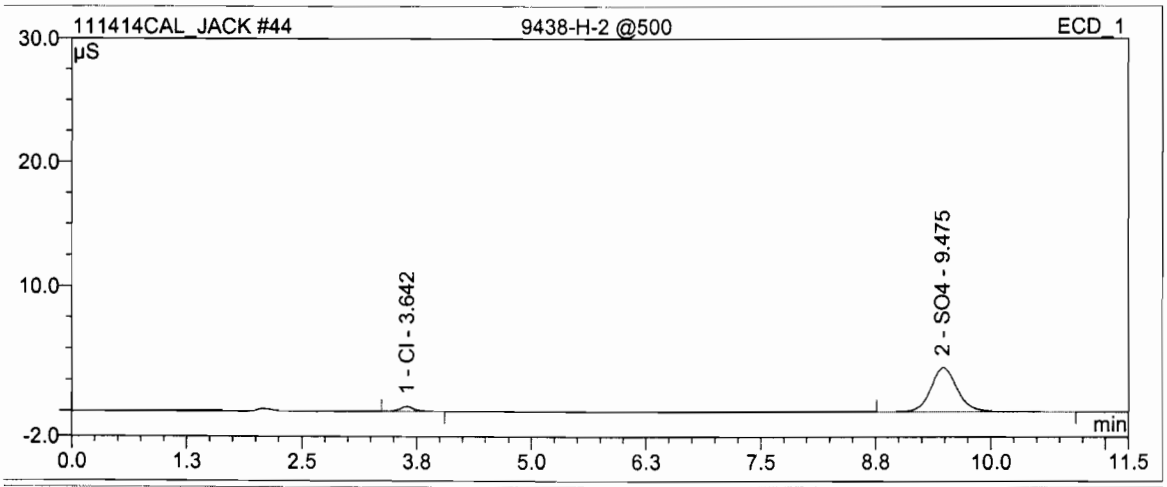


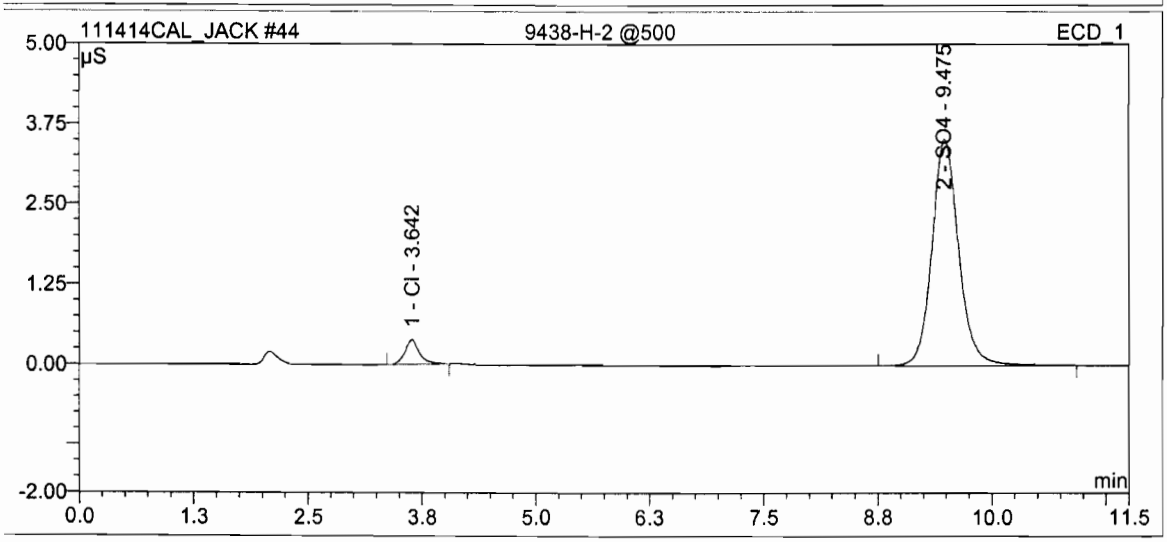


Integration Report - ECD_1

Sample Name:	**9438-H-2 @500**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 18:57**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	3.64	Cl	BMB	0.071	0.384	221.2733
2	9.48	SO4	BMB	1.204	3.526	5150.6166
TOTAL:				1.28	3.91	5371.89

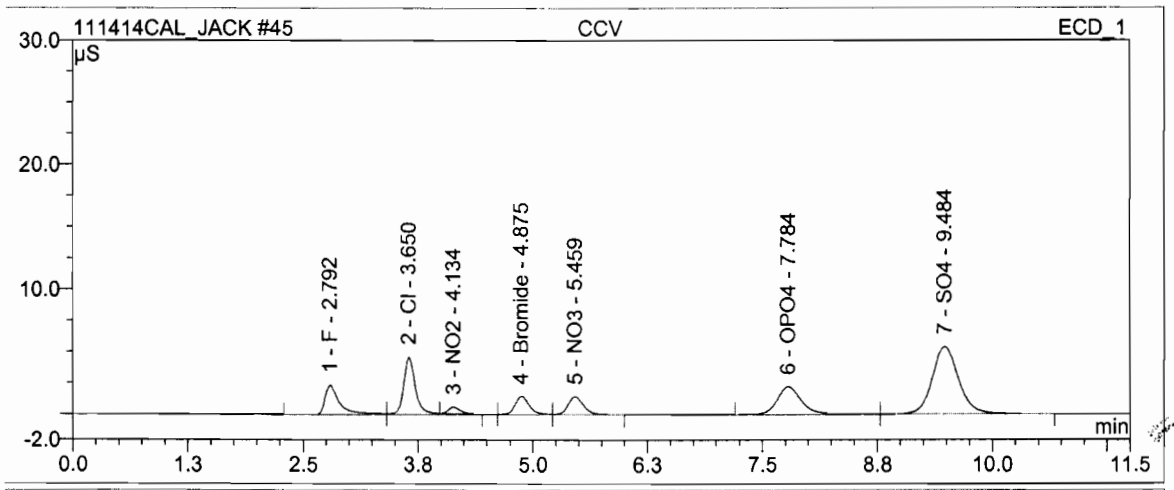


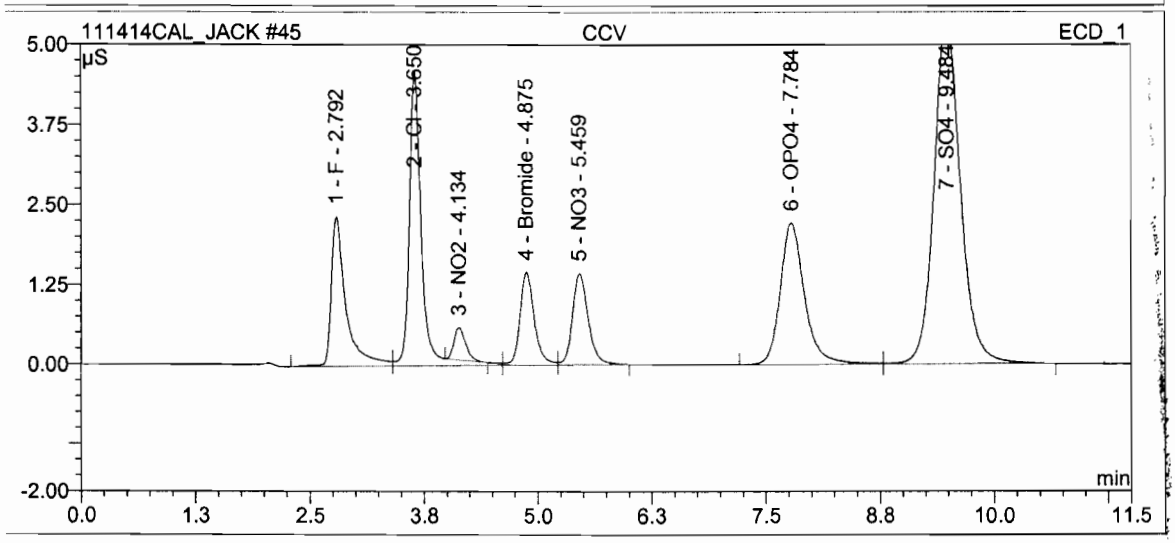


Integration Report - ECD_1

Sample Name:	**CCV**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 19:11**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.79	F	BM	0.445	2.346	1070.6982
2	3.65	Cl	M	0.721	4.621	2252.1186
3	4.13	NO2	Rd	0.076	0.510	122.1655
4	4.88	Bromide	M	0.267	1.460	2082.3441
5	5.46	NO3	MB	0.289	1.435	405.7905
6	7.78	OPO4	BM	0.693	2.219	8038.6726
7	9.48	SO4	MB	1.818	5.404	7777.3362
		TOTAL:		4.31	18.00	21749.13





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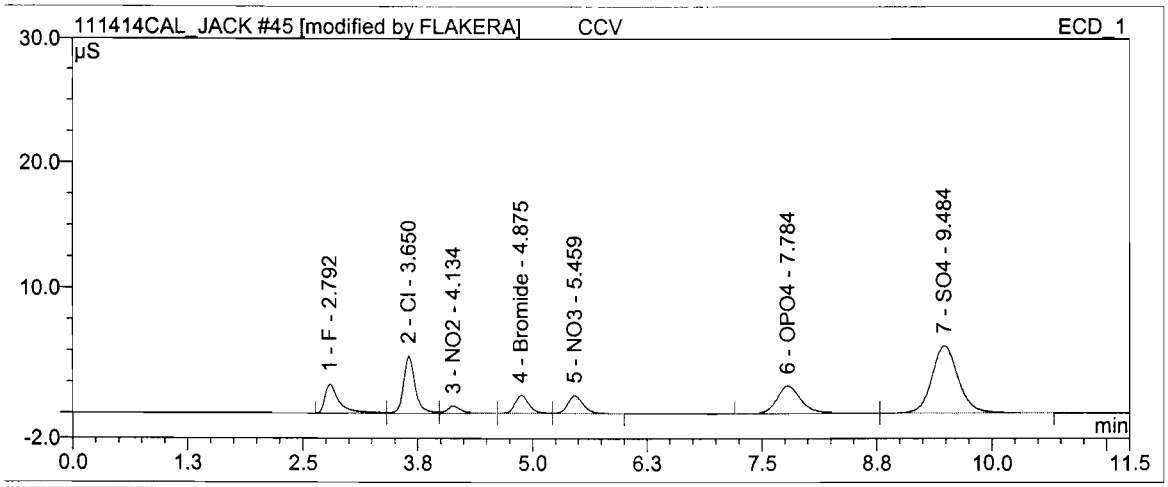
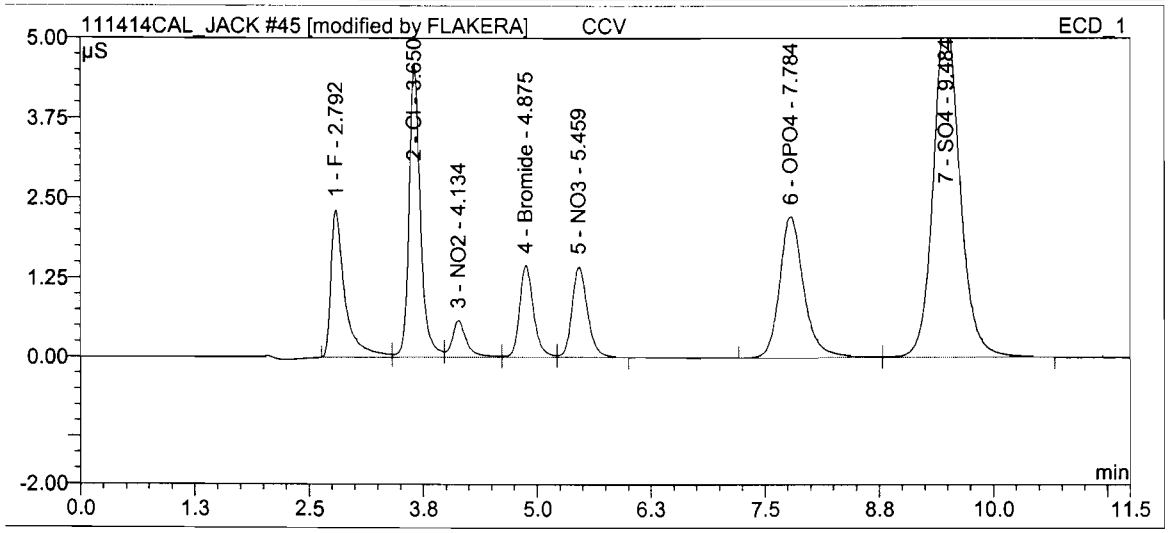
All but OPO4, SO4

Integration Report - ECD_1

Sample Name:	**CCV**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 19:11**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.79	F	BM *	0.417	2.315	1004.4252
2	3.65	Cl	M *	0.666	4.599	2081.1237
3	4.13	NO2	M *	0.108	0.581	172.9749
4	4.88	Bromide	M *	0.261	1.450	2033.9461
5	5.46	NO3	MB*	0.286	1.430	401.6798
6	7.78	OPO4	BM	0.693	2.219	8038.6726
7	9.48	SO4	MB	1.818	5.404	7777.3362
		TOTAL:		4.25	18.00	21510.16

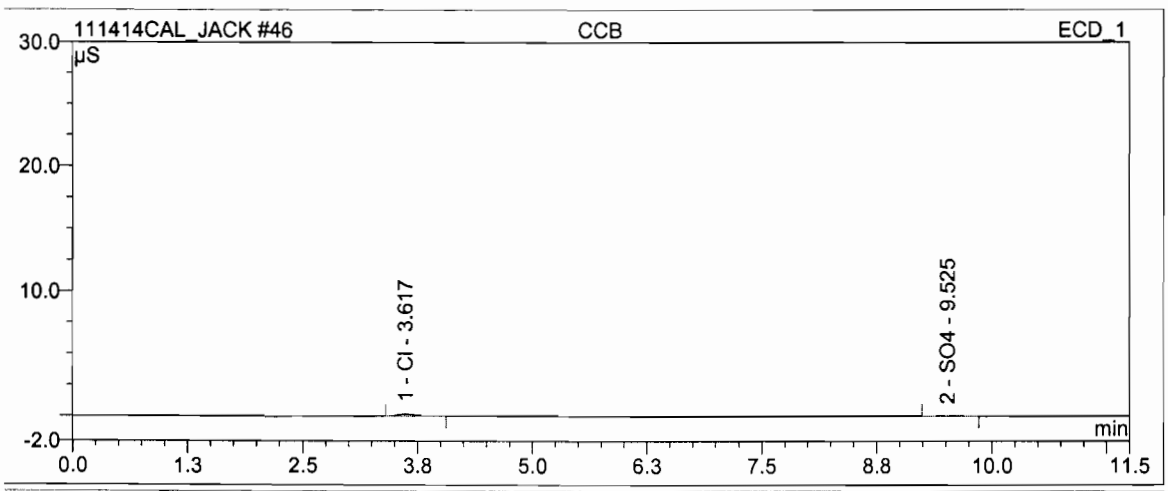


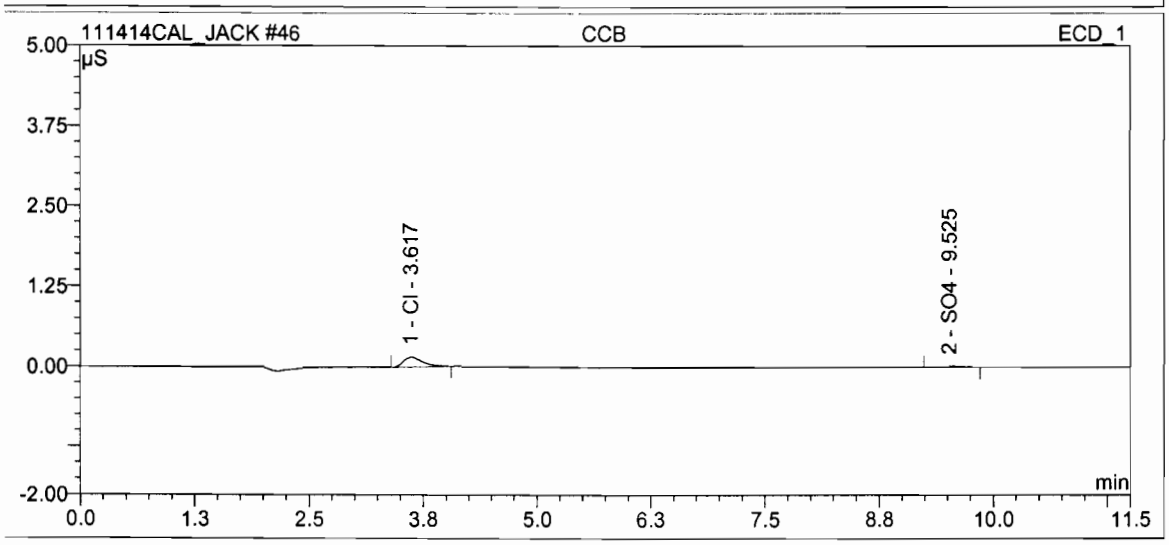


Integration Report - ECD_1

Sample Name:	**CCB**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 19:25**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	3.62	Cl	BMB	0.038	0.153	118.9878
2	9.53	SO4	BMB	0.005	0.016	22.2508
		TOTAL:		0.04	0.17	141.24

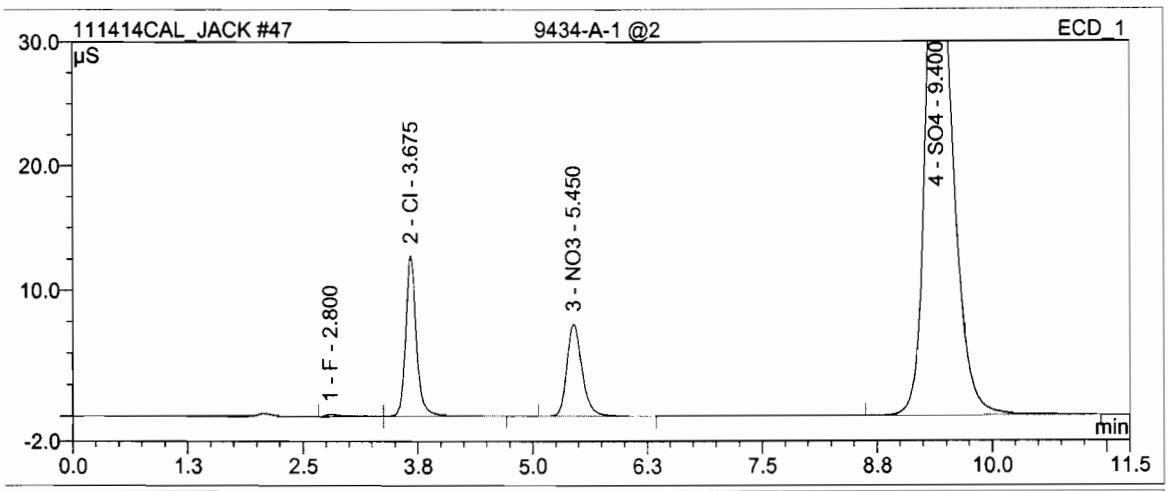


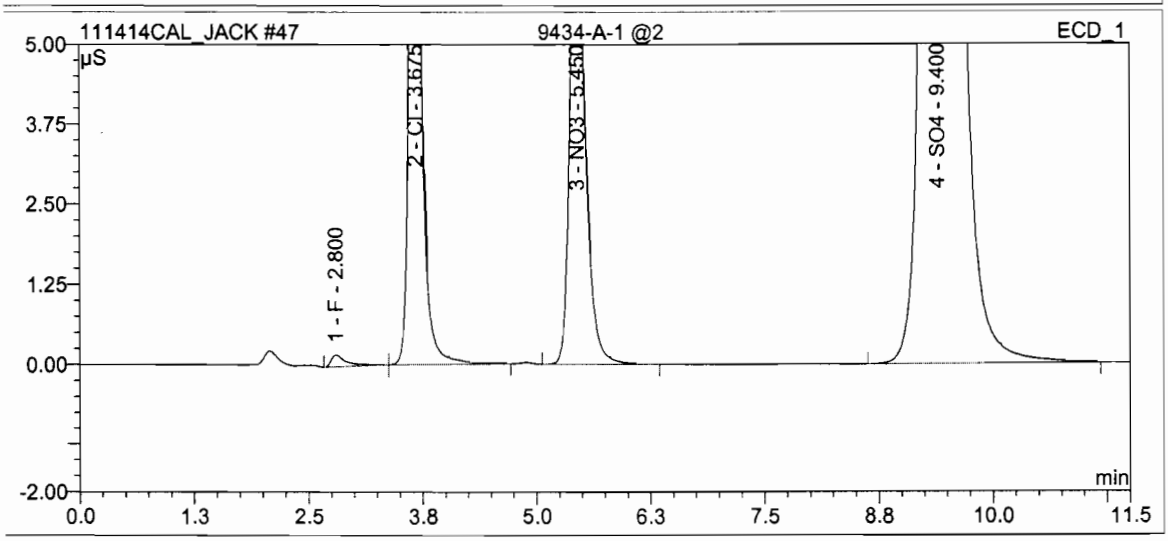


Integration Report - ECD_1

Sample Name:	**9434-A-1 @2**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 19:38**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BMB	0.037	0.187	89.4436
2	3.68	Cl	bMB	1.729	12.806	5401.8922
3	5.45	NO3	BMB	1.415	7.320	1987.7300
4	9.40	SO4	BMB	14.675	45.340	62767.5562
		TOTAL:		17.86	65.65	70246.62

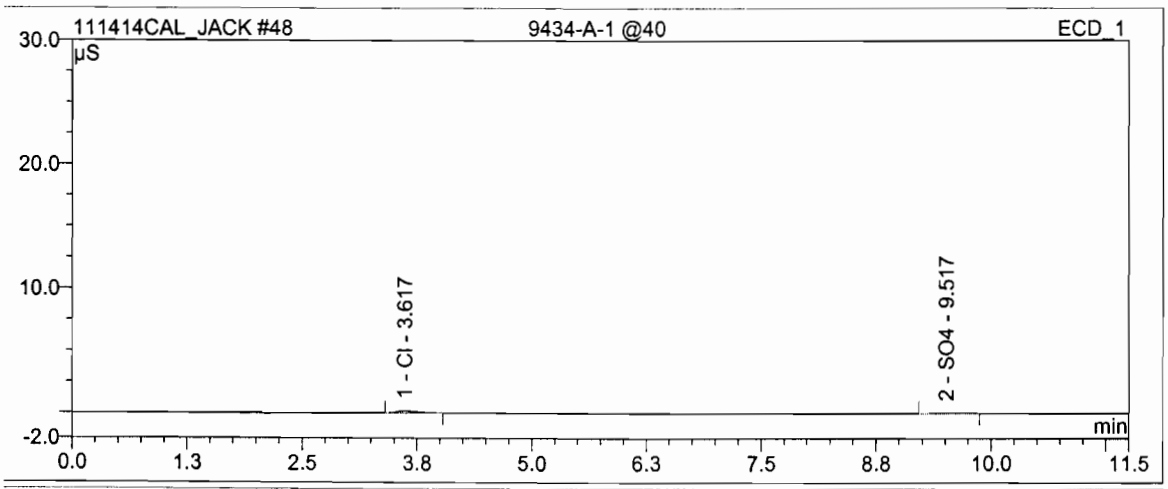


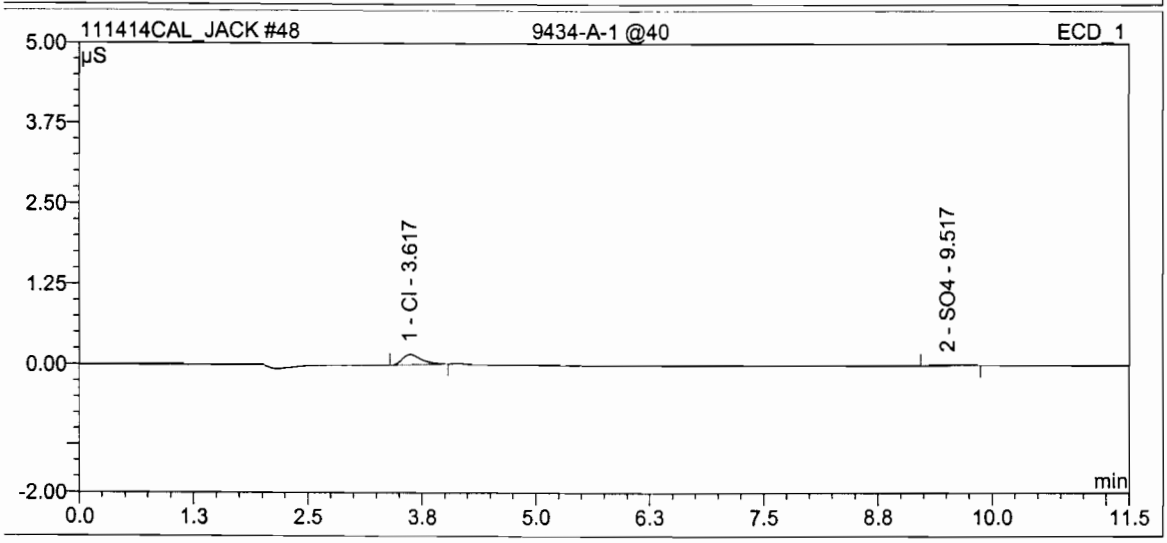


Integration Report - ECD_1

Sample Name:	**9434-A-1 @40**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 19:52**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	3.62	Cl	BMB	0.039	0.161	122.7358
2	9.52	SO4	BMB	0.007	0.020	27.8229
		TOTAL:		0.05	0.18	150.56

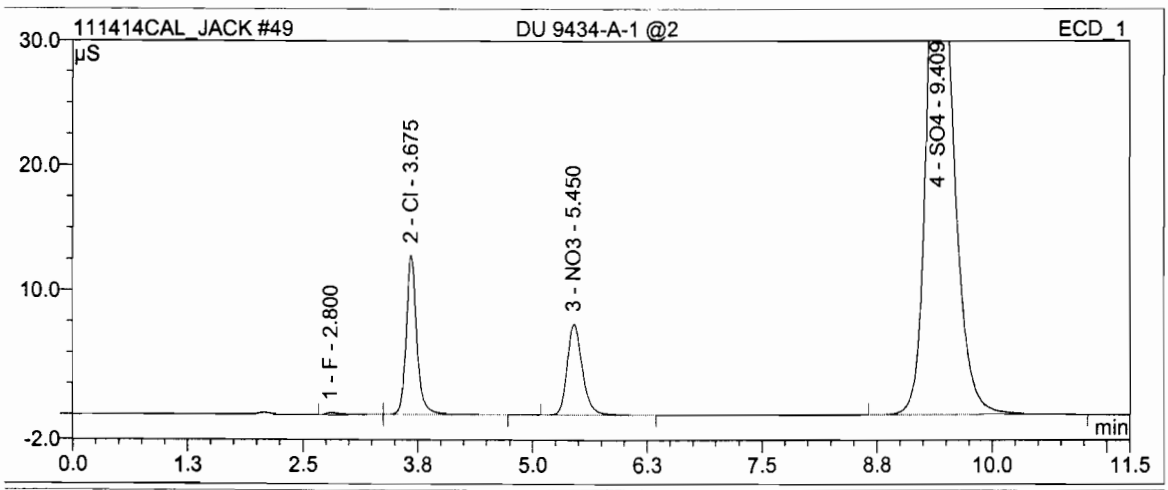


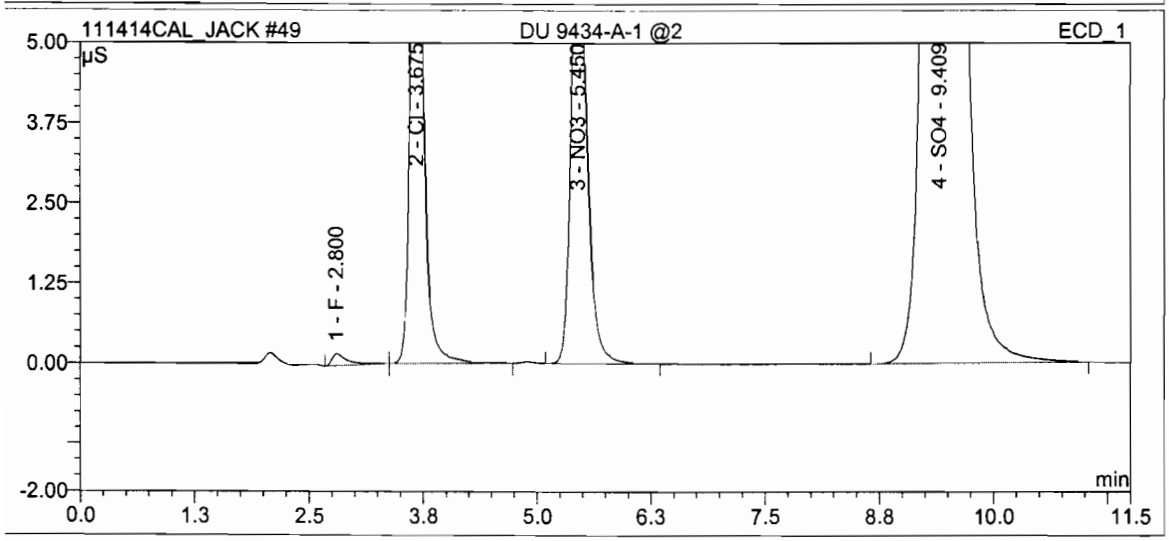


Integration Report - ECD_1

Sample Name:	**DU 9434-A-1 @2**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 20:06**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BMB	0.037	0.188	89.8041
2	3.68	Cl	bMB	1.727	12.839	5397.8451
3	5.45	NO3	BMB	1.416	7.330	1988.3794
4	9.41	SO4	BMB	14.686	45.431	62814.3464
		TOTAL:		17.87	65.79	70290.37

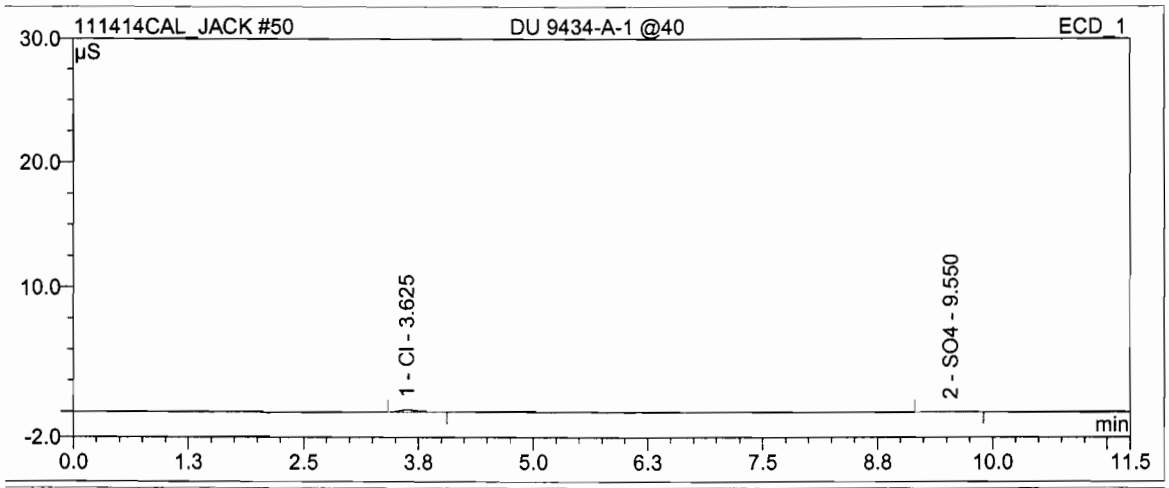


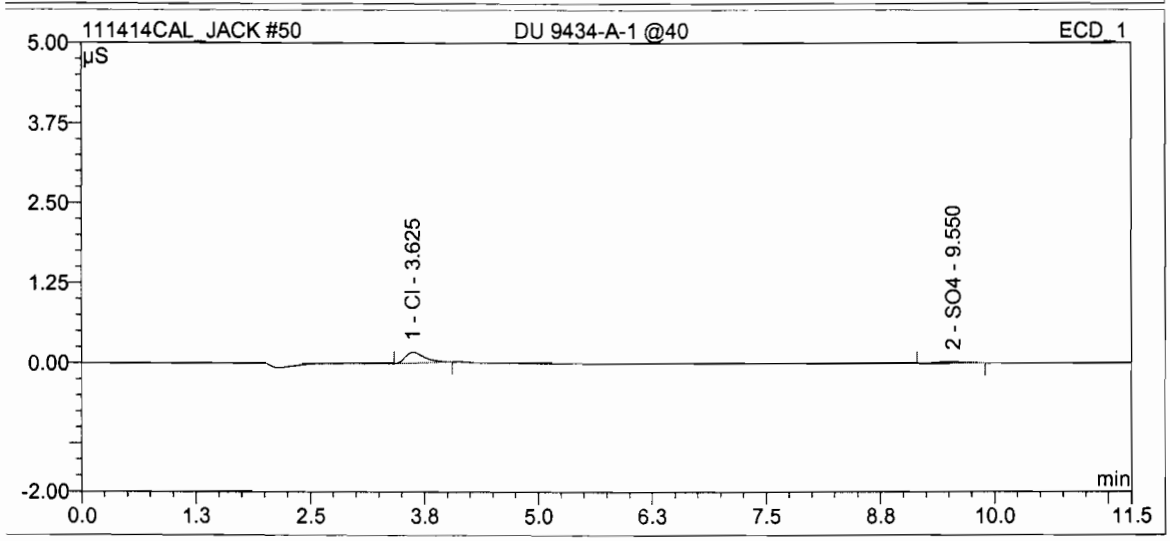


Integration Report - ECD_1

Sample Name:	**DU 9434-A-1 @40**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 20:20**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	3.63	Cl	BMB	0.042	0.167	129.7682
2	9.55	SO4	BMB	0.007	0.019	30.8357
		TOTAL:		0.05	0.19	160.60

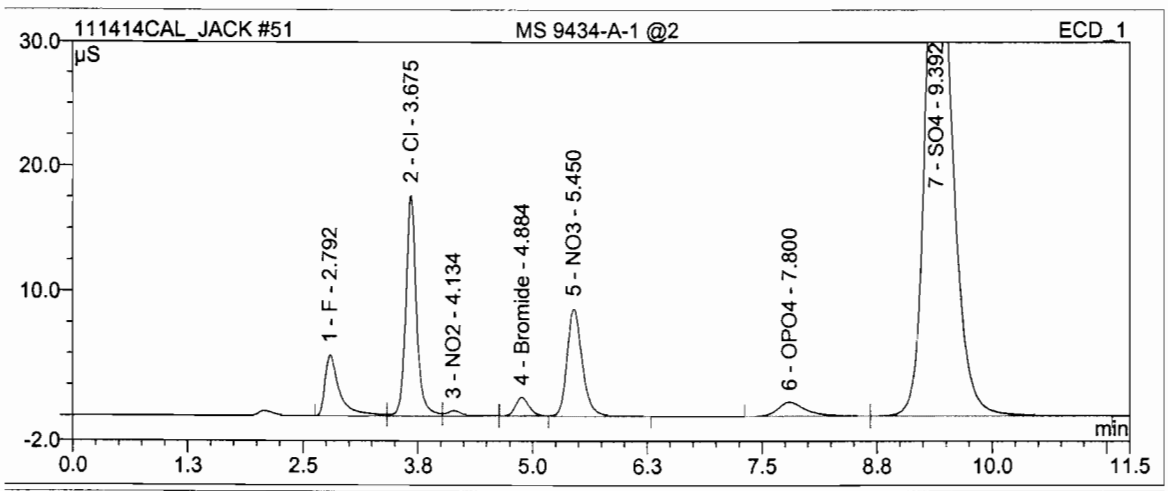


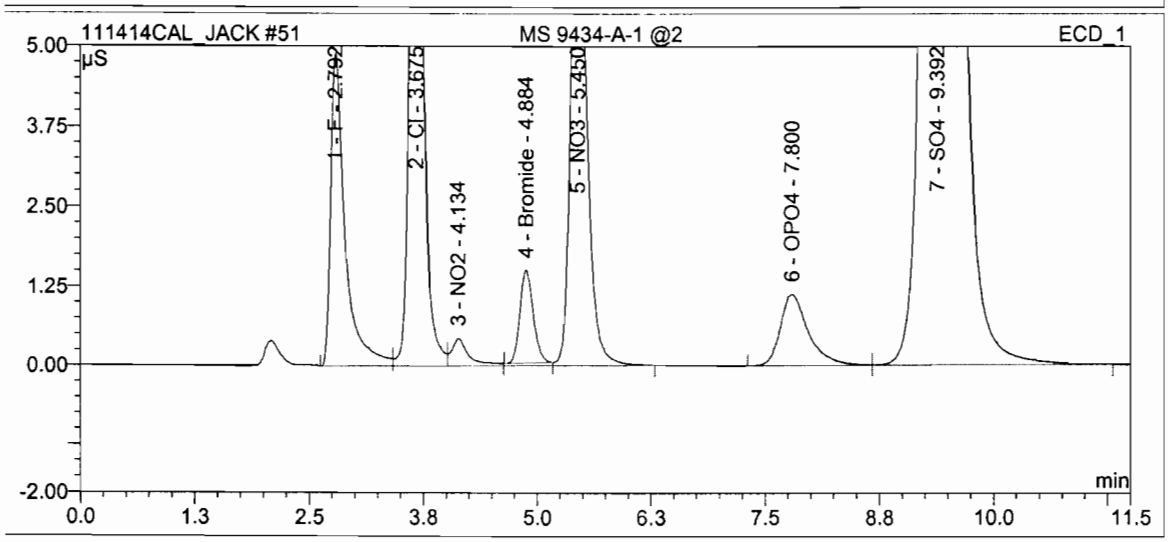


Integration Report - ECD_1

Sample Name:	**MS 9434-A-1 @2**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 20:34**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.79	F	BM	0.904	4.893	2176.7256
2	3.68	Cl	M	2.368	17.701	7401.1331
3	4.13	NO2	M	0.095	0.433	151.6233
4	4.88	Bromide	Ru	0.248	1.466	1933.0348
5	5.45	NO3	MB	1.690	8.623	2374.2398
6	7.80	OPO4	BM	0.403	1.127	4676.8785
7	9.39	SO4	MB	14.988	46.217	64106.1026
		TOTAL:		20.70	80.46	82819.74

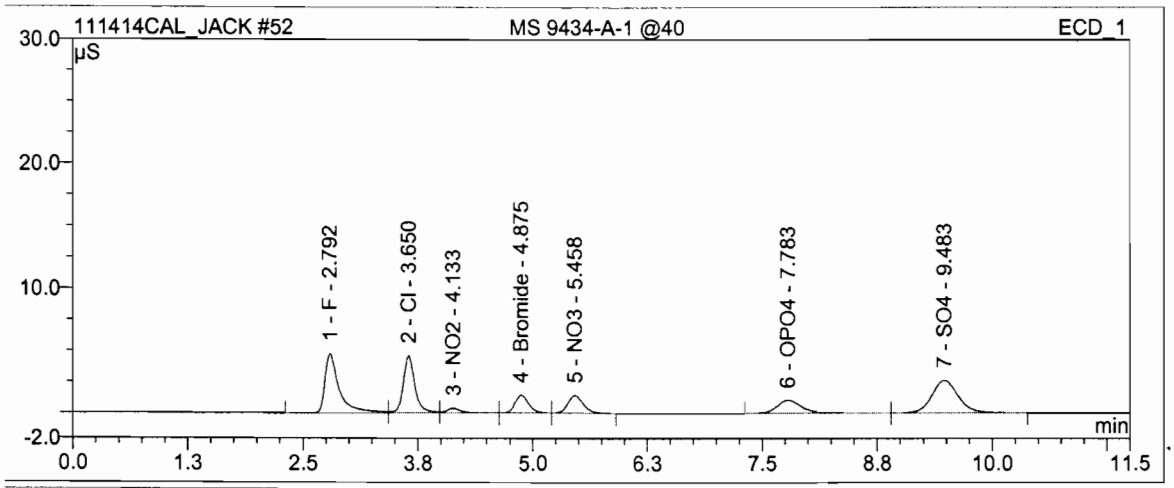


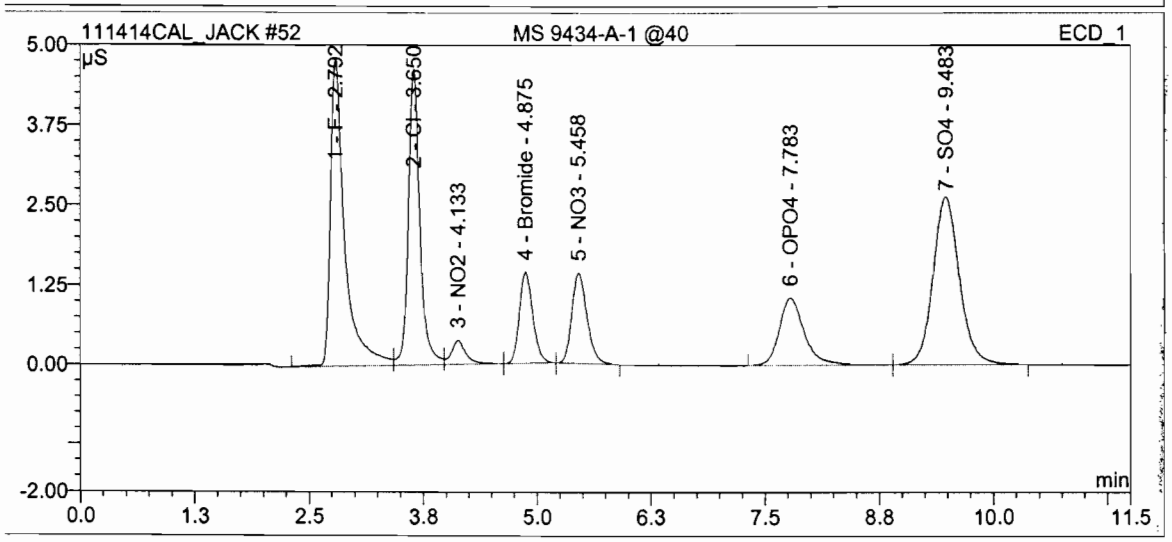


Integration Report - ECD_1

Sample Name:	**MS 9434-A-1 @40**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 20:48**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.79	F	BM	0.877	4.811	2111.2826
2	3.65	Cl	M	0.678	4.629	2118.2882
3	4.13	NO2	MB	0.070	0.375	111.5874
4	4.88	Bromide	bMb	0.246	1.431	1920.5506
5	5.46	NO3	bMB	0.276	1.419	387.1580
6	7.78	OPO4	BM	0.341	1.058	3954.0779
7	9.48	SO4	MB	0.886	2.621	3789.4441
		TOTAL:		3.37	16.34	14392.39



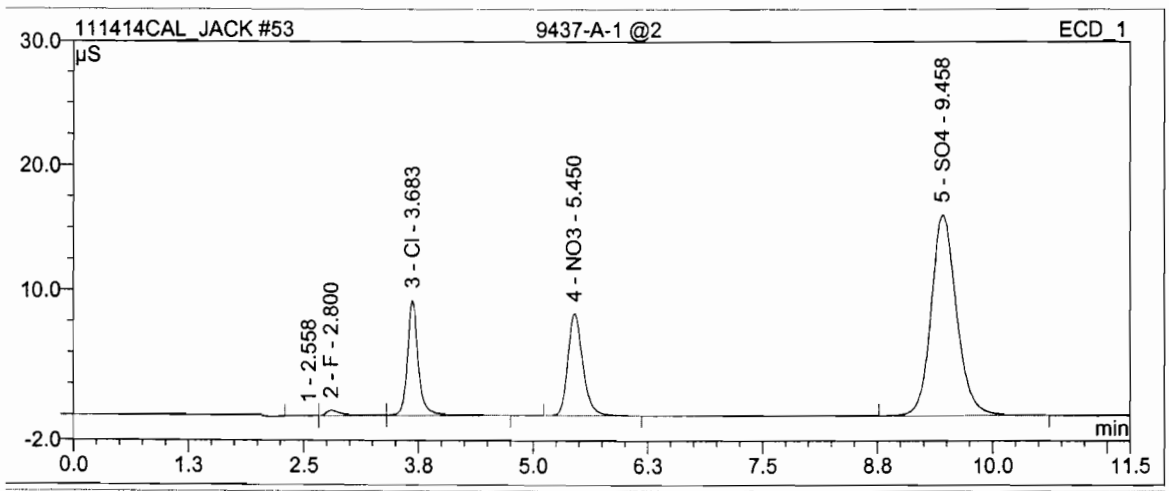


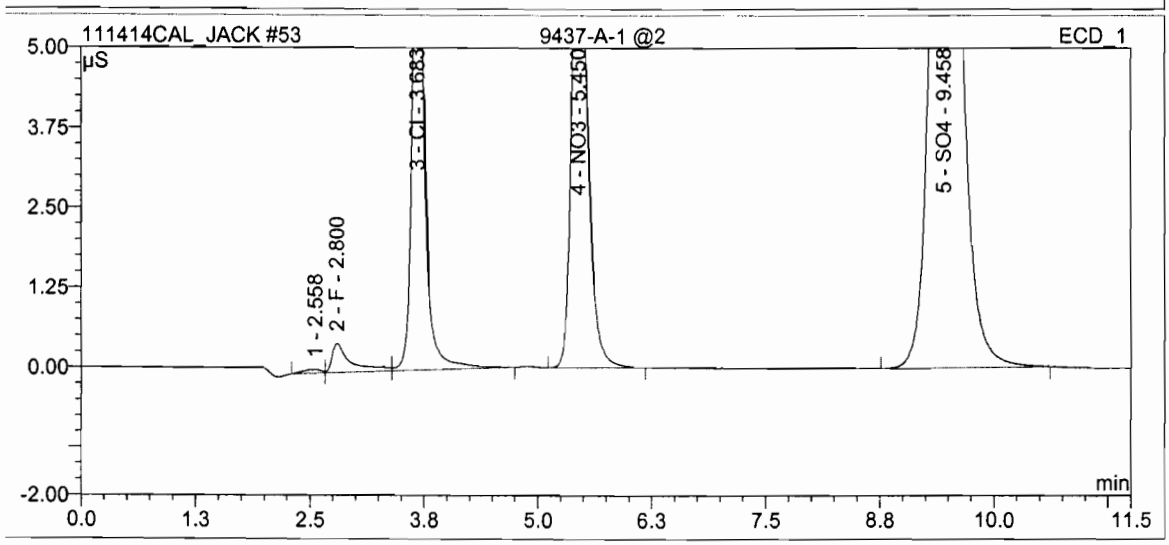
AF 11-25-14

Integration Report - ECD_1

Sample Name:	**9437-A-1 @2**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 21:02**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
2	2.80	F	M	0.109	0.453	262.6676
3	3.68	Cl	MB	1.286	9.224	4017.5076
4	5.45	NO3	BMB	1.555	8.161	2184.0934
5	9.46	SO4	BMB	5.199	16.074	22236.3442
		TOTAL:		8.15	33.91	28700.61

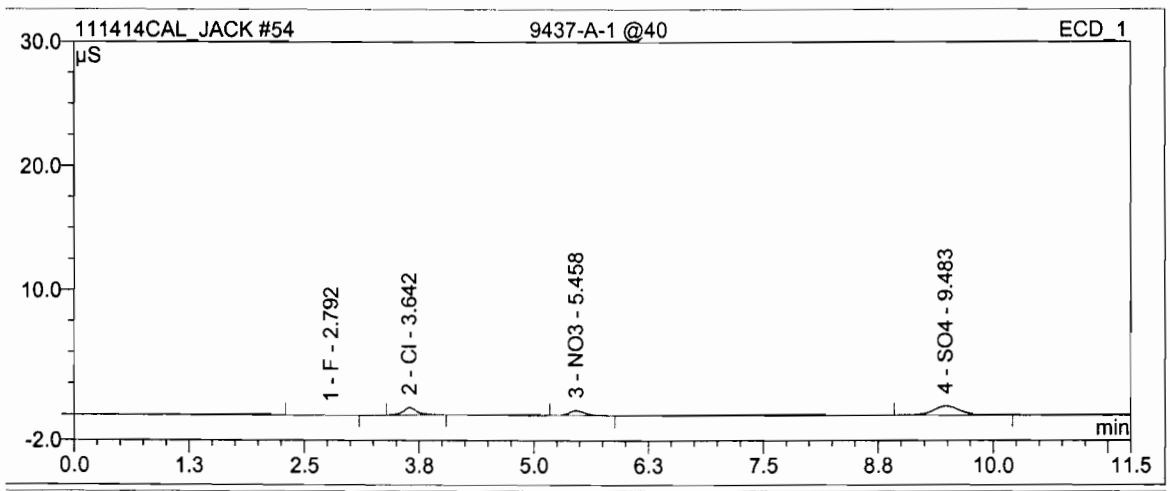


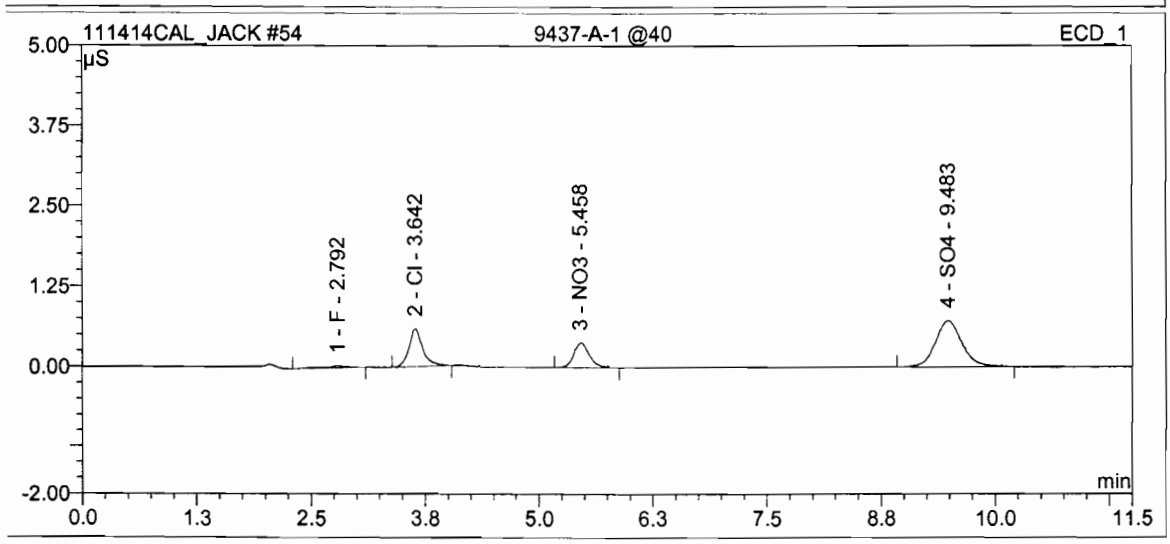


Integration Report - ECD_1

Sample Name:	**9437-A-1 @40**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 21:16**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.79	F	BMB	0.009	0.031	21.8761
2	3.64	Cl	BMB	0.103	0.586	322.6913
3	5.46	NO3	BMB	0.076	0.383	107.3113
4	9.48	SO4	BMB	0.244	0.715	1045.0397
		TOTAL:		0.43	1.71	1496.92

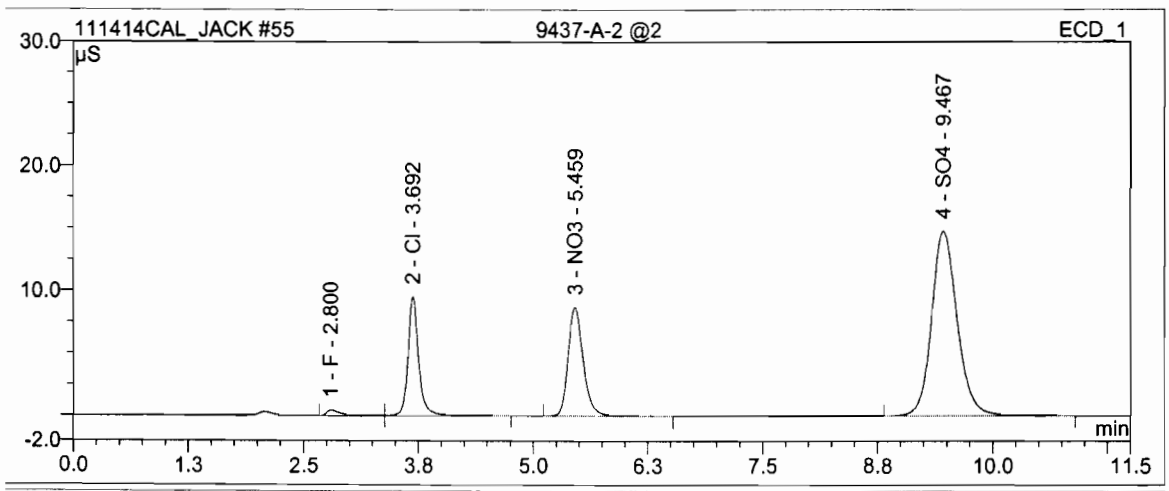


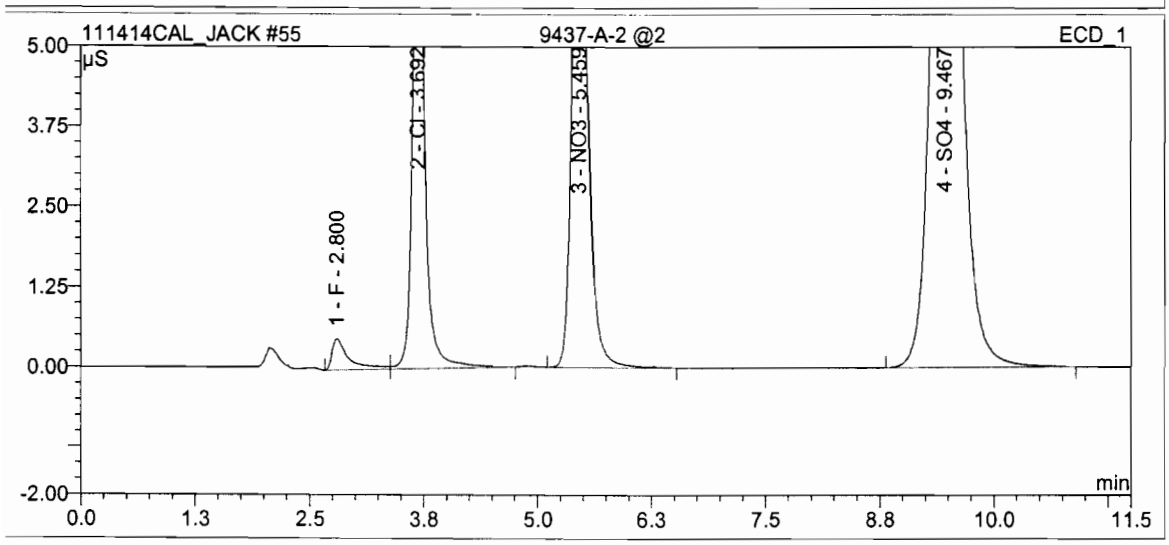


Integration Report - ECD_1

Sample Name:	**9437-A-2 @2**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 21:30**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BM	0.107	0.491	257.0028
2	3.69	Cl	MB	1.309	9.548	4091.9667
3	5.46	NO3	BMB	1.678	8.697	2357.0874
4	9.47	SO4	BMB	4.817	14.789	20604.8273
		TOTAL:		7.91	33.53	27310.88

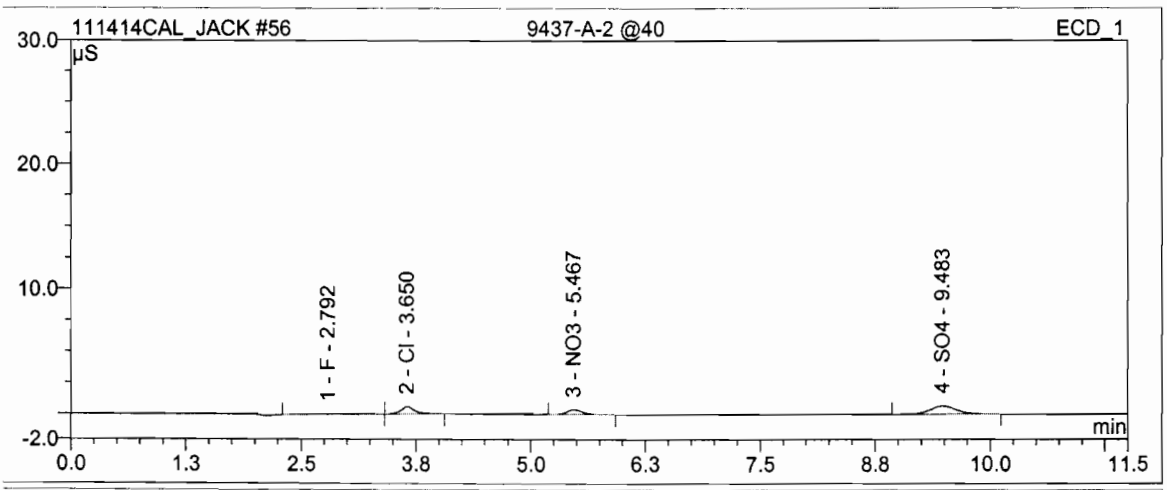


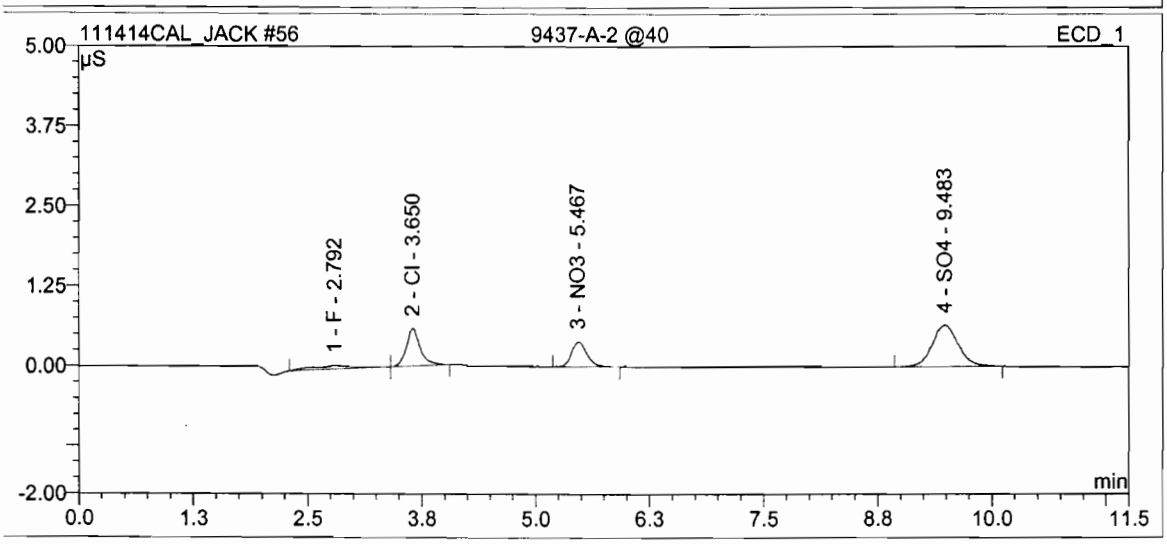


Integration Report - ECD_1

Sample Name:	**9437-A-2 @40**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 21:44**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.79	F	BMB	0.030	0.057	73.1894
2	3.65	Cl	bMB	0.105	0.592	327.6715
3	5.47	NO3	BMB	0.077	0.390	108.2875
4	9.48	SO4	BMB	0.218	0.648	934.0589
		TOTAL:		0.43	1.69	1443.21

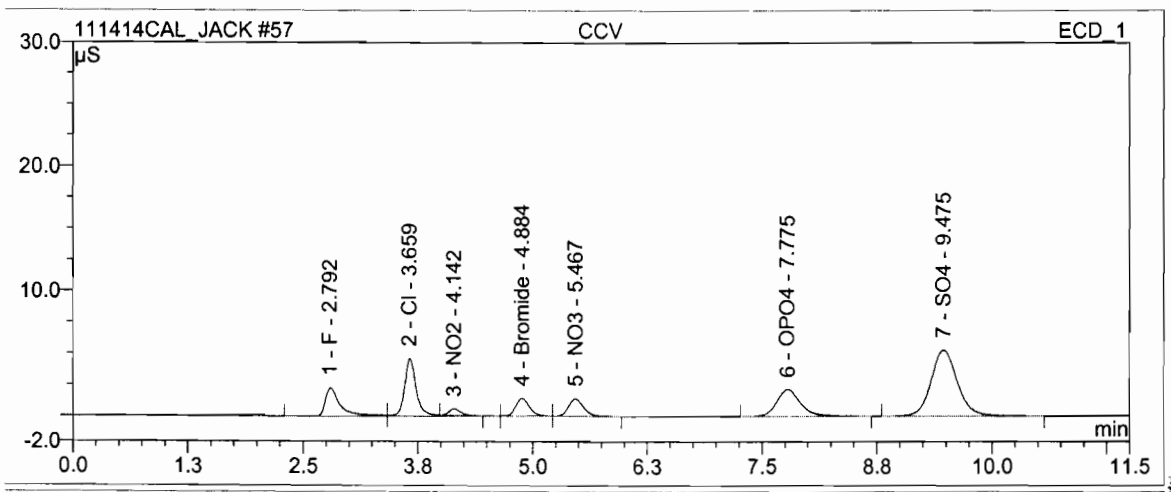


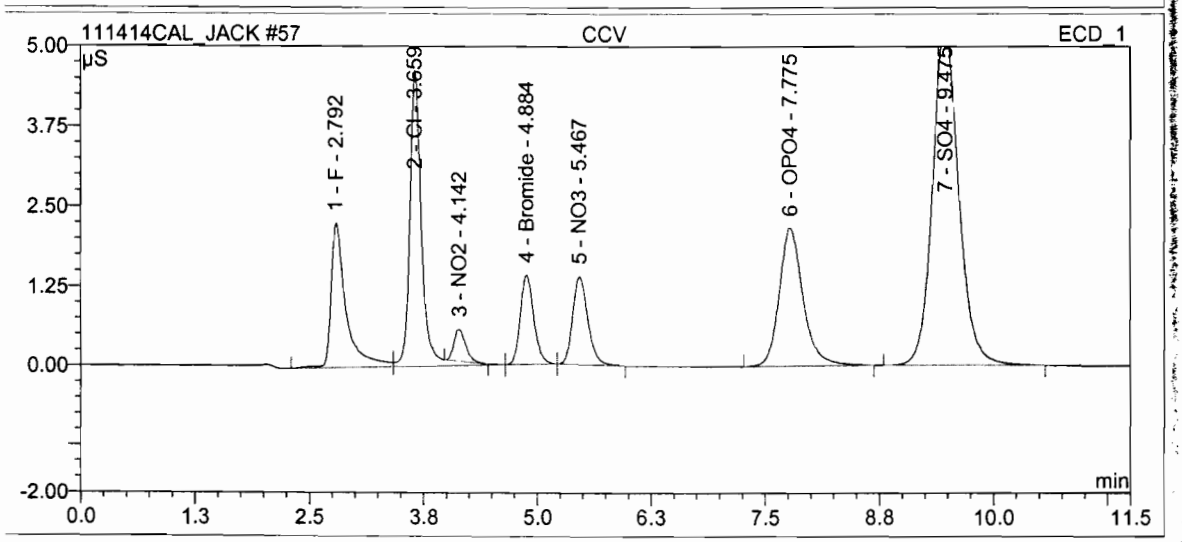


Integration Report - ECD_1

Sample Name:	**CCV**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 21:58**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.79	F	BM	0.438	2.269	1053.4439
2	3.66	Cl	MB	0.699	4.625	2185.5196
3	4.14	NO2	Rd	0.075	0.504	120.2084
4	4.88	Bromide	bMb	0.242	1.412	1890.0553
5	5.47	NO3	bMB	0.269	1.387	377.4335
6	7.78	OPO4	BMB	0.664	2.165	7694.1959
7	9.48	SO4	BMB	1.772	5.312	7578.3773
		TOTAL:		4.16	17.67	20899.23

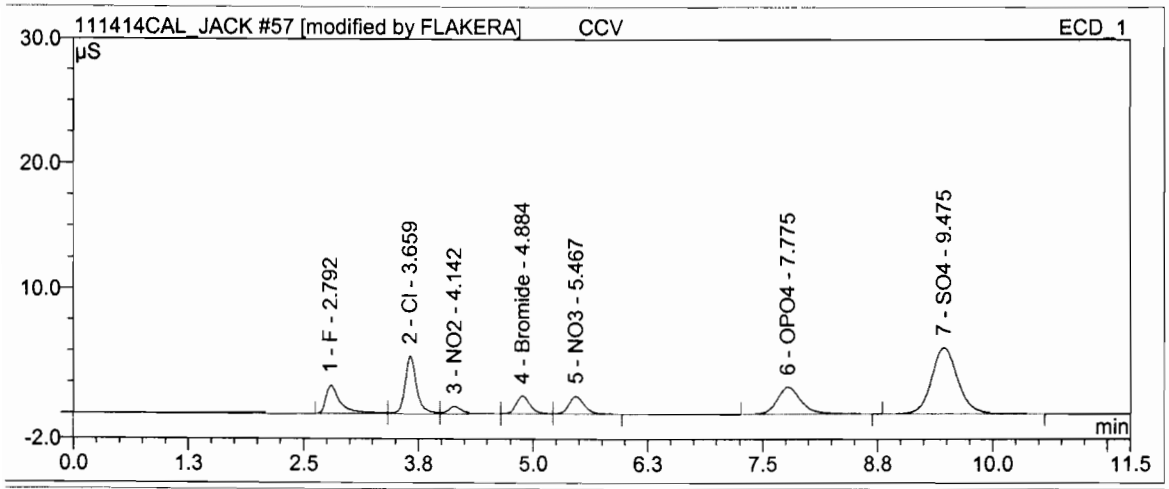


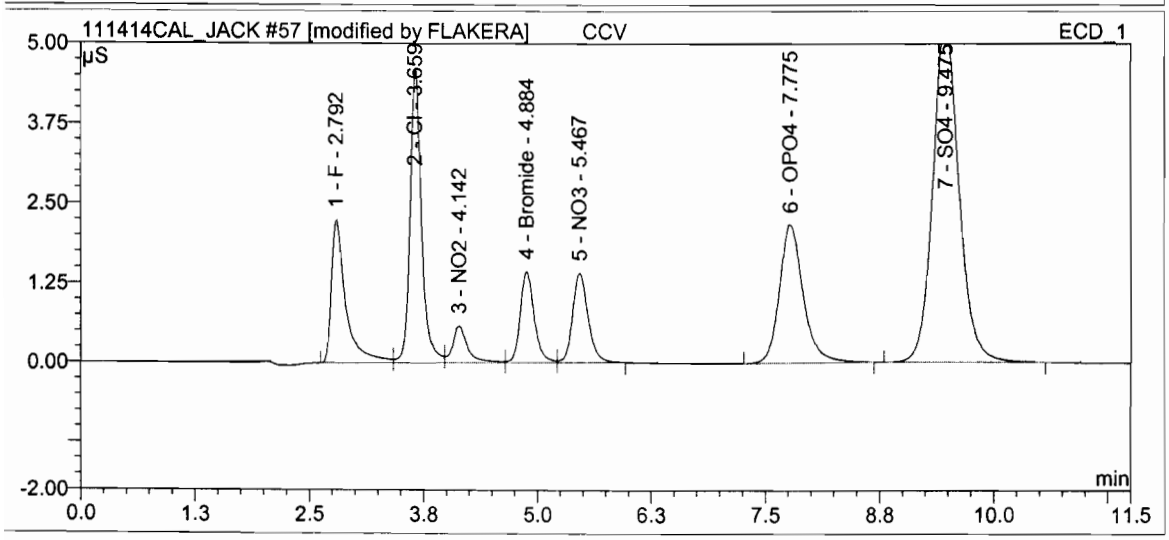


Integration Report - ECD_1

Sample Name:	**CCV**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 21:58**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.79	F	BM *	0.415	2.243	998.0158
2	3.66	Cl	M *	0.669	4.619	2090.7237
3	4.14	NO2	M *	0.110	0.579	175.3981
4	4.88	Bromide	M *	0.256	1.435	1994.2176
5	5.47	NO3	MB*	0.280	1.407	392.6202
6	7.78	OPO4	BMB	0.664	2.165	7694.1959
7	9.48	SO4	BMB	1.772	5.312	7578.3773
		TOTAL:		4.16	17.76	20923.55

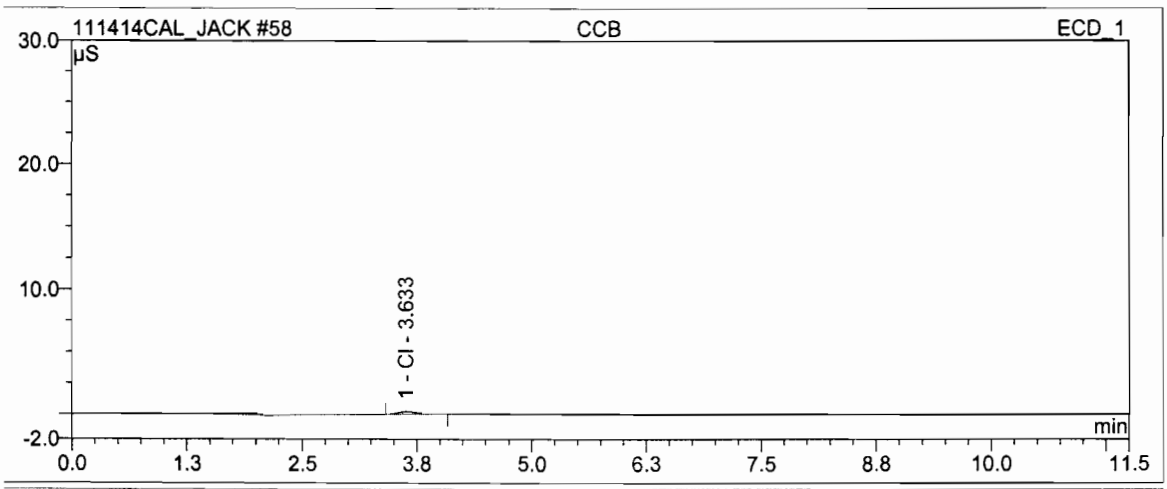


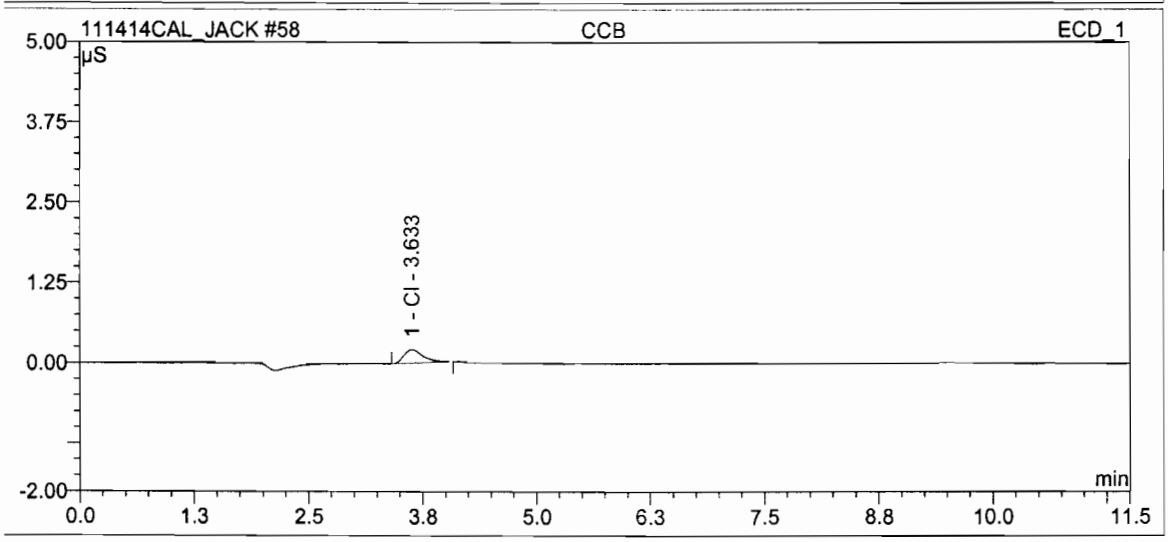


Integration Report - ECD_1

Sample Name:	**CCB**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 22:12**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	3.63	Cl	BMB	0.051	0.209	160.7873
		TOTAL:		0.05	0.21	160.79

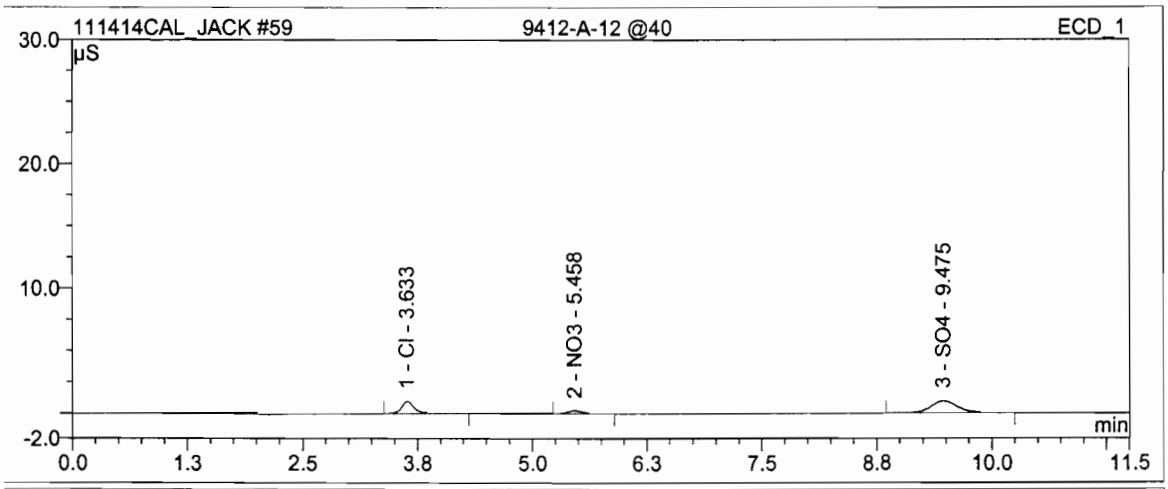


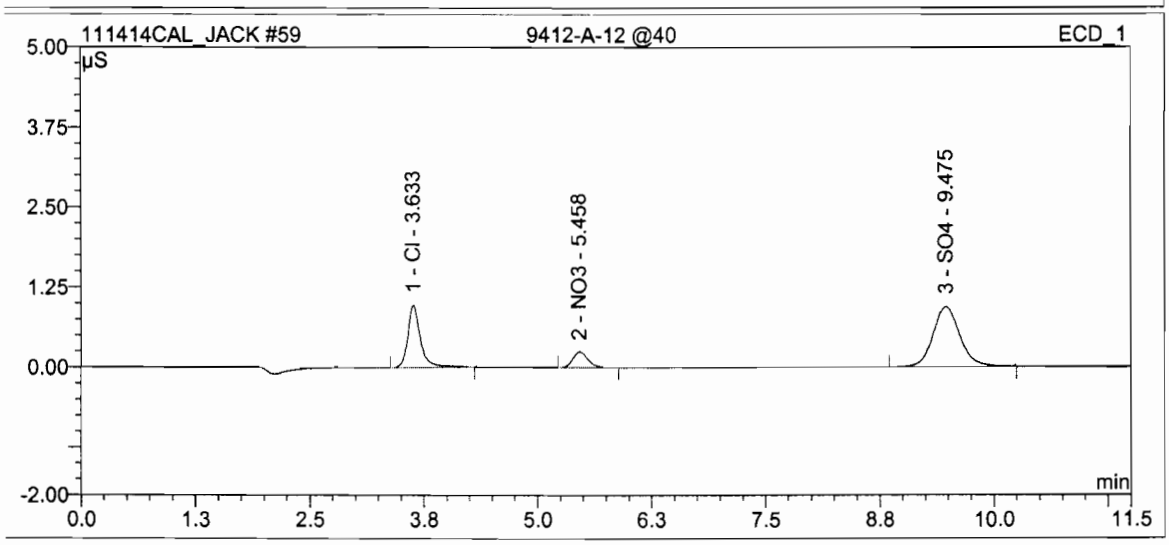


Integration Report - ECD_1

Sample Name:	**9412-A-12 @40**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 22:26**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	3.63	Cl	BMB	0.159	0.976	498.2863
2	5.46	NO3	BMB	0.048	0.246	67.5227
3	9.48	SO4	BMB	0.323	0.940	1380.1399
		TOTAL:		0.53	2.16	1945.95

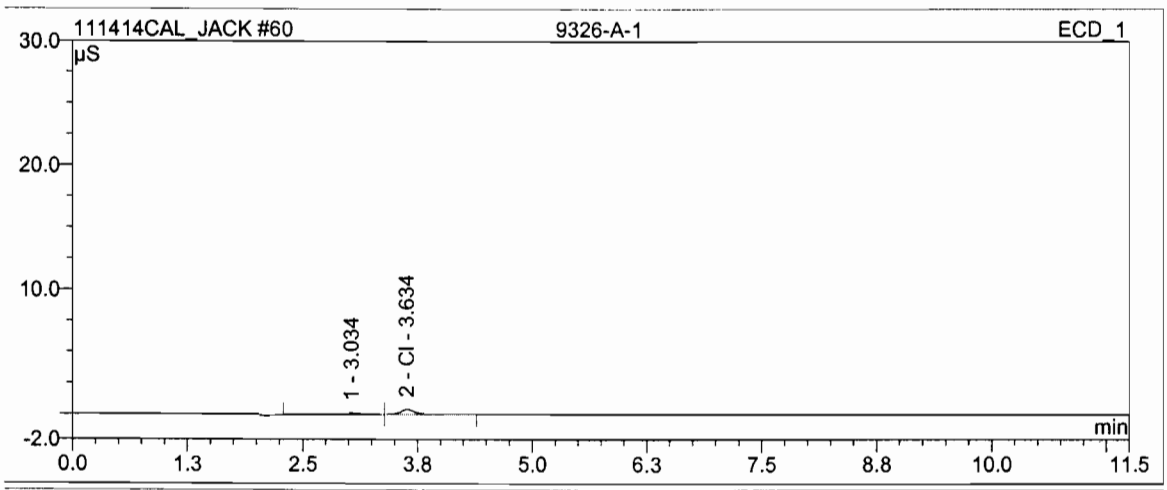


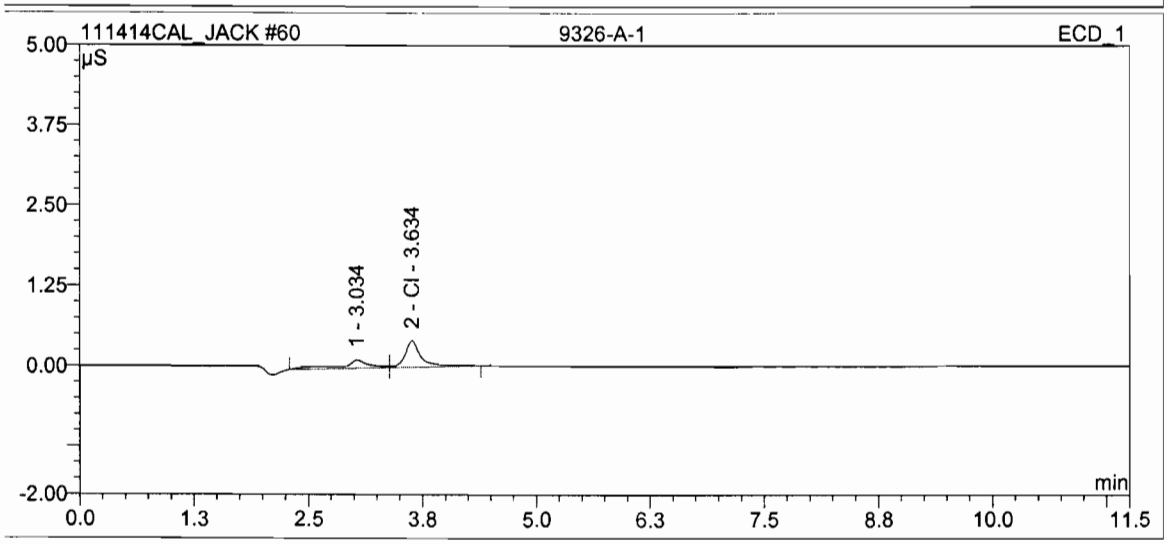


Integration Report - ECD_1

Sample Name:	**9326-A-1**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 22:39**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
2	3.63	Cl	MB	0.087	0.415	271.3449
		TOTAL:		0.09	0.42	271.34

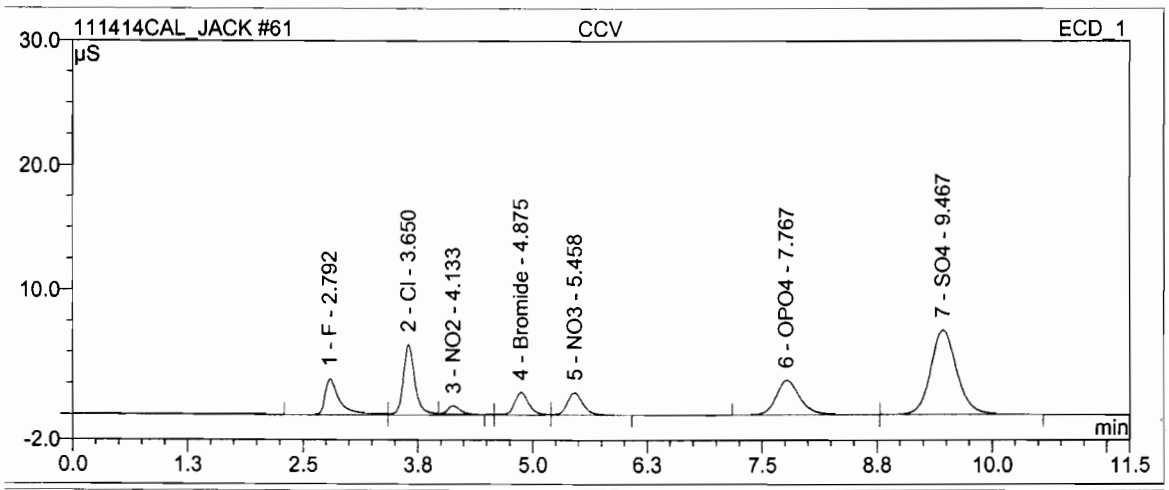


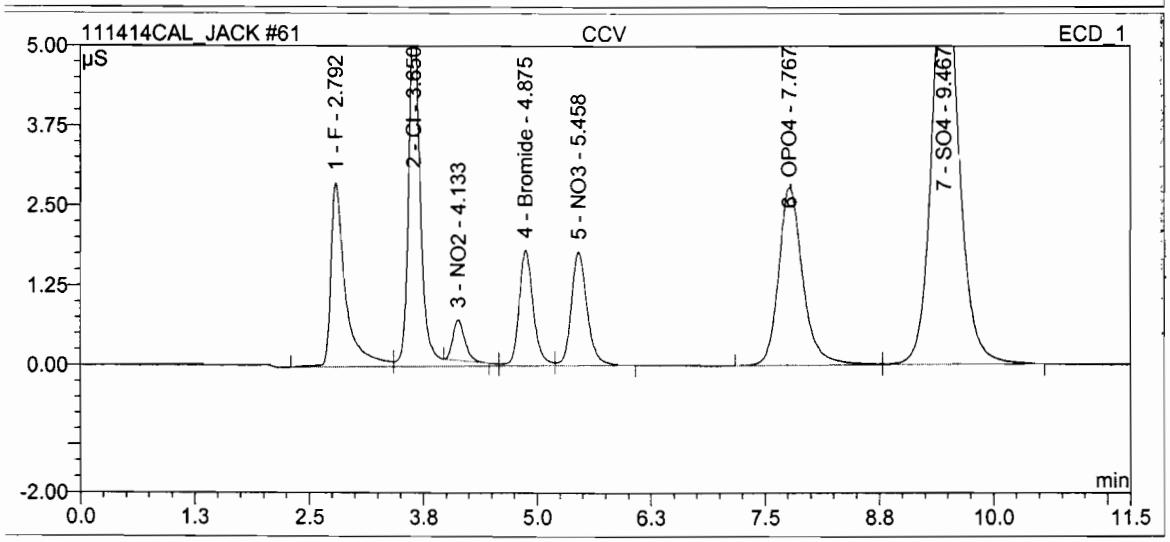


Integration Report - ECD_1

Sample Name:	**CCV**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 22:53**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.79	F	BM	0.545	2.881	1312.5430
2	3.65	Cl	M	0.866	5.675	2706.4940
3	4.13	NO2	Rd	0.096	0.633	154.0538
4	4.88	Bromide	M	0.329	1.814	2569.4112
5	5.46	NO3	MB	0.360	1.780	506.2190
6	7.77	OPO4	BM	0.864	2.784	10016.7815
7	9.47	SO4	MB	2.273	6.810	9723.4623
		TOTAL:		5.33	22.38	26988.96





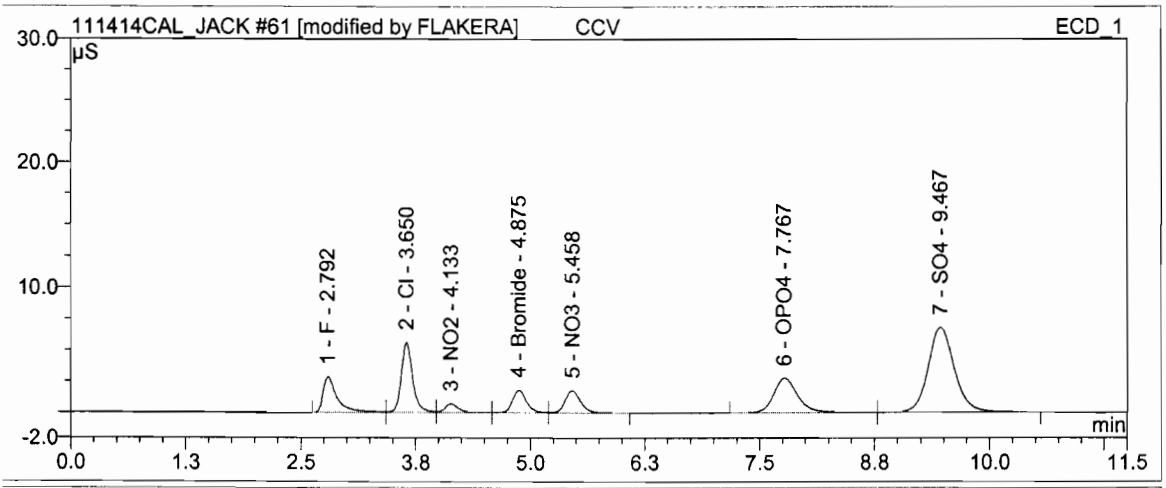
MI AF 11-25-14

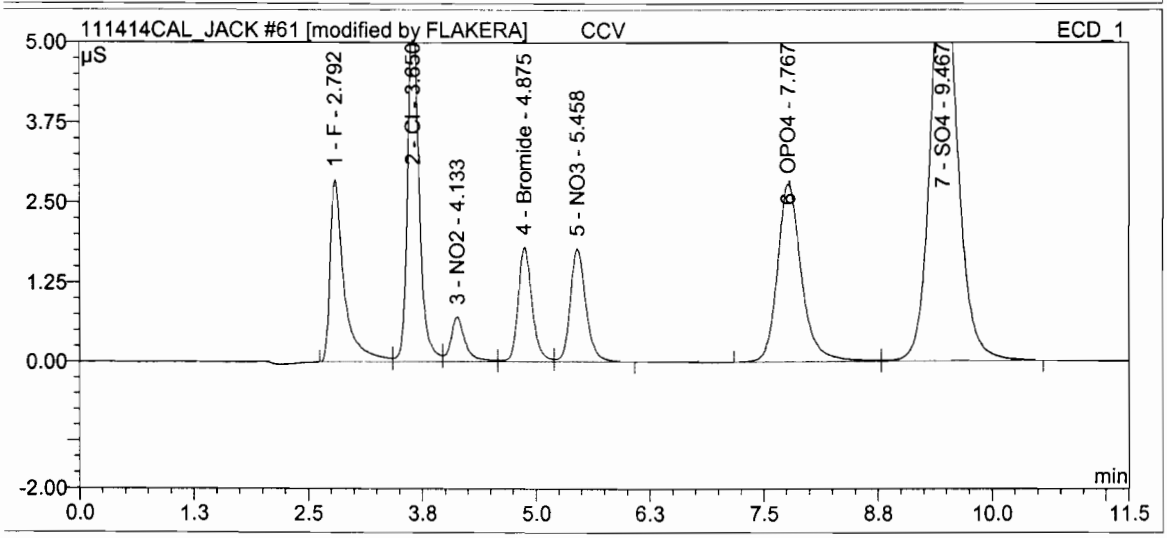
all but SO4, OPO4

Integration Report - ECD_1

Sample Name:	**CCV**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 22:53**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.79	F	BM *	0.517	2.851	1245.1591
2	3.65	Cl	M *	0.811	5.653	2533.0305
3	4.13	NO2	M *	0.130	0.707	207.9617
4	4.88	Bromide	M *	0.323	1.803	2517.5804
5	5.46	NO3	MB*	0.357	1.774	501.2659
6	7.77	OPO4	BM	0.864	2.784	10016.7815
7	9.47	SO4	MB	2.273	6.810	9723.4623
		TOTAL:		5.27	22.38	26745.24

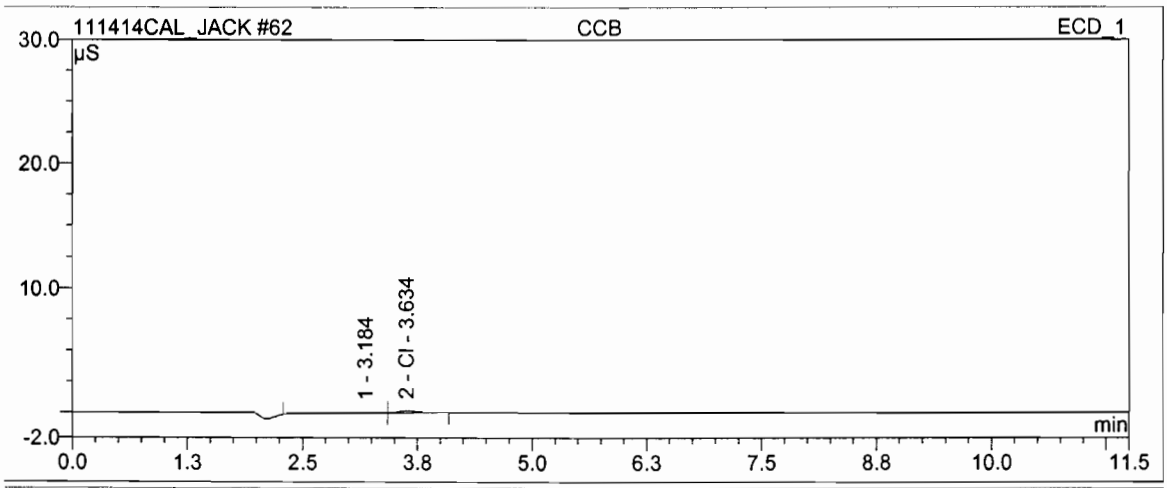


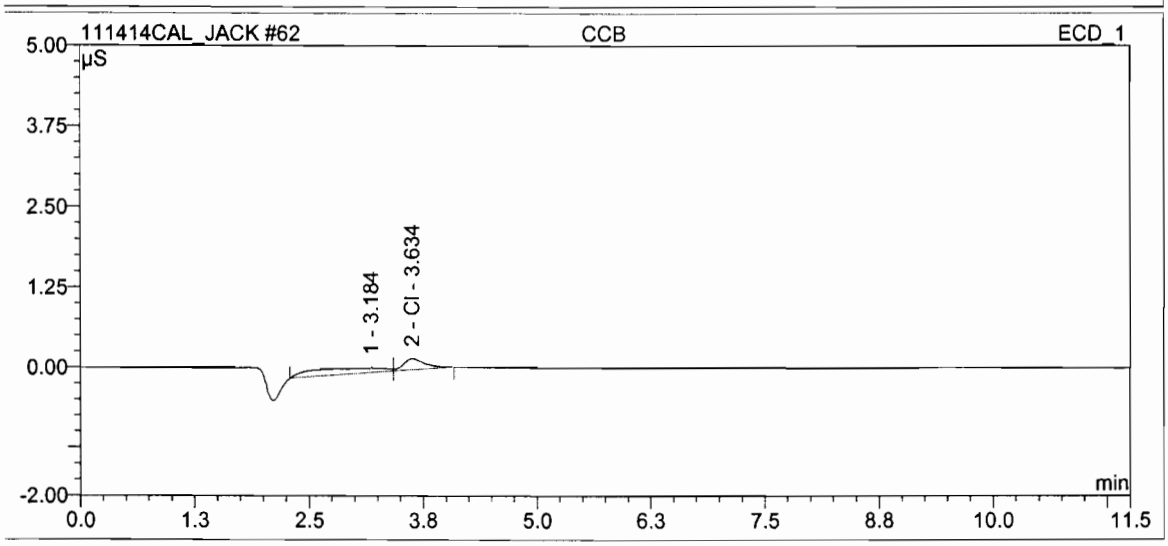


Integration Report - ECD_1

Sample Name:	**CCB**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 23:07**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
2	3.63	Cl	MB	0.049	0.173	151.6350
		TOTAL:		0.05	0.17	151.64





Integration Report - ECD_1

Sample Name:	**END**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SHUTDOWN**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 23:21**	*Run Time:*	**n.a.**

n.a.	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**
n.a.	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**
n.a.	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**
		TOTAL:		0.00	0.00	0.00

111414CAL_JACK #63 END ECD_1

Can't open raw data file "C:\Chromel\data\JACK\SEQUENCES\14NOV\111414CAL_JACK.SEQ\ECD_1.CHL\9741.acd".
The system cannot find the file specified.

111414CAL_JACK #63 END ECD_1

Can't open raw data file "C:\Chromel\data\JACK\SEQUENCES\14NOV\111414CAL_JACK.SEQ\ECD_1.CHL\9741.acd".
The system cannot find the file specified.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

St. Louis
Data Review Checklist
Ion Chromatography
Method 300.0/9056A

Job#(s): 9437-1, 9412-1, 9407-1, 9438-1, 9451-1 9326-1 Batch#(s): 158759

Run Date: 11/15 Due Date: 11/14 NCM# 1) 44632 2) 44633 3) 44634 Instrument ID: ICS2500

	Yes	No	N/A	2nd Level
A. Calibration/Instrument Run QC 1. Instrument calibrated (if applicable) using a blank and the required minimum number of calibration standards?	✓			✓
2. Is the initial calibration curve correlation coefficient ≥ 0.995?	✓			✓
3. ICV/CCV analyzed at the appropriate frequency and within control limits?	✓			✓
4. ICB/CCB analyzed at appropriate frequency and within +/- RL?	✓			✓
5. Calibration curve is updated in the method with the correct retention times?	✓			✓
6. Is the area count for the curve appropriate for the calibration levels in use? (verify one point on the calibration)	✓			✓
B. Sample Results 1. Samples with concentration > the linear range or affected by interferences diluted and reanalyzed? NCM-1	✓			✓
2. All reported results bracketed by in control QC?	✓			✓
3. Sample analyses done within holding time? NCM-2	✓	✓		✓
4. All dilutions were checked and verified against the "straight" runs?	✓			✓
5. Perchlorate: are all sample interferences less than the Matrix Conductivity Threshold observed in the Inst. Performance Check/INF?			✓	✓
C. Preparation/Matrix QC 1. LCS done per prep batch and within QC limits?	✓			✓
2. Method blank done per prep batch and <RL or CRDL (CLP)?	✓			✓
3. MS run at required frequency and within limits? NCM-3	✓	✓		✓
4. MS or Dup run at required frequency and RPD within SOP limits?	✓			✓
D. Other 1. Are all non-conformances documented appropriately?	✓			✓
2. Current MDL data on file?	✓			✓
3. Calculations checked for error?			✓	✓
4. Were manual integrations checked for appropriateness, correctness and proper documentation (before/after chromatograms, reason, analyst, date?	✓			✓
5. Transcriptions checked for error?	✓			✓
6. All client/project specific requirements met?	✓			✓
7. Date/time of analysis verified as correct?	✓			✓

Analyst: Alicia Slaker Date: ~~11-20-14~~ 11-21-14 AF 11-4-14

Comments:

2nd Level: JB Date: 11/24/14

Due: ~~11/28~~ 11/14.
JB 11/19/14

TestAmerica St. Louis
Anion Worksheet

Analyst: AF

Method(s): [X] 300.0 [ ] 9056A

Date: 11-15-14

Instrument: ICS2500

Sample Sequence: 111514 Jack

Calibration Sequence: 111414 CAL Jack

All result as ppb

Batch #: 158759

Lot Number	Sample ID	Fluoride	Chloride	Nitrite	Bromide	Nitrate	Phosphate	Sulfate	Chlorate	Iodide
9437-1	9453-1	2x	40x	2x		2x		40x		
	2	2x	40x	2x		2x		40x		
	3	2x	40x	2x		40x		40x		
	4	2x	40x	2x		40x		40x		
	5	2x	40x	2x		40x		40x	- Rcvd OOH	
	6	2x	40x	2x		40x		40x		
9412-1	9412-12		20x			20x		20x		
9407-1	9434-1		20x			20x		20x	OOH, but w/in 2X	
9437-1	9437-1		20x			20x		20x		
	2		20x			20x		20x		
9438-1	9438-1		100x			100x		500x		
	2	AF 11-21-14	20x ~~100x~~	20x		20x		500x		
9451-1	9451-1	1x	50x	1x	1x	1x	1x	50x		
	9451-2	1x	50x	1x	1x	1x	1x	10x ~~50x~~	RR 10x AF 11-17-14	
	3	1x	1x	1x	1x	1x	1x	1x		
	4	1x	1x	1x	1x	1x	1x	1x		
9326-1	9326-1	1x	1x							

Form: INORG-0080, Revised 7/8/2014
SOP: ST-WC-0028

Title:
Datasource: SLIC03_local
Location: JACK\SEQUENCES\14NOV
Timebase: JACK
#Samples: 47
Created: 11/15/2014 12:41:28 PM by FLAKERA
Last Update: 11/21/2014 10:53:11 AM by FLAKERA

No.	Name	Type	Pos.	Inj. Vol.	Program	Method	Status	Inj. Date/Time
1	ICV	Unknown	1	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 12:42:27 PM
2	ICB	Unknown	2	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 12:56:22 PM
3	MB	Unknown	3	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 1:10:17 PM
4	LCS	Unknown	4	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 1:24:12 PM
5	9453-A-1 @2	Unknown	5	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 1:38:08 PM
6	9453-A-1 @40	Unknown	6	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 1:52:03 PM
7	9453-A-1 DU @2	Unknown	7	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 2:05:58 PM
8	9453-A-1 DU @40	Unknown	8	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 2:19:53 PM
9	9453-A-1 MS @2	Unknown	9	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 2:33:48 PM
10	9453-A-1 MS @40	Unknown	10	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 2:47:43 PM
11	9453-A-2 @2	Unknown	11	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 3:01:39 PM
12	9453-A-2 @40	Unknown	12	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 3:15:34 PM
13	CCV	Unknown	13	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 3:29:29 PM
14	CCB	Unknown	14	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 3:43:24 PM
15	9453-A-3 @2	Unknown	15	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 3:57:19 PM
16	9453-A-3 @40	Unknown	16	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 4:11:15 PM
17	9453-A-4 @2	Unknown	17	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 4:25:10 PM
18	9453-A-4 @40	Unknown	18	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 4:39:05 PM
19	9453-A-5 @2	Unknown	19	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 4:53:00 PM
20	9453-A-5 @40	Unknown	20	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 5:06:55 PM
21	9453-A-6 @2	Unknown	21	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 5:20:50 PM
22	9453-A-6 @40	Unknown	22	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 5:34:46 PM
23	9412-A-12 @20	Unknown	23	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 5:48:41 PM
24	9434-A-1 @20	Unknown	24	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 6:02:36 PM
25	CCV	Unknown	25	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 6:16:32 PM
26	CCB	Unknown	26	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 6:30:27 PM
27	9437-A-1 @20	Unknown	27	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 6:44:23 PM
28	9437-A-2 @20	Unknown	28	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 6:58:18 PM
29	9438-H-1 @100	Unknown	29	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 7:12:13 PM
30	9438-H-1 @500	Unknown	30	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 7:26:08 PM
31	9438-H-2 @20	Unknown	31	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 7:40:03 PM
32	9438-H-2 @100	Unknown	32	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 7:53:59 PM
33	9438-H-2 @500	Unknown	33	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 8:07:54 PM
34	9451-A-1	Unknown	34	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 8:21:49 PM
35	9451-A-1 @50	Unknown	35	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 8:35:44 PM
36	CCV	Unknown	36	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 8:49:40 PM
37	CCB	Unknown	37	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 9:03:34 PM
38	9451-A-2	Unknown	38	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 9:17:29 PM
39	9451-A-2 @50	Unknown	39	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 9:31:25 PM
40	9451-A-3	Unknown	40	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 9:45:20 PM
41	9451-A-3 @50	Unknown	41	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 9:59:15 PM
42	9451-A-4	Unknown	42	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 10:13:10 PM

Title:
Datasource: SLIC03_local
Location: JACK\SEQUENCES\14NOV
Timebase: JACK
#Samples: 47
Created: 11/15/2014 12:41:28 PM by FLAKERA
Last Update: 11/21/2014 10:53:11 AM by FLAKERA

No.	Name	Weight	Dil. Factor	ISTD Amount	Sample ID	Replicate ID	Comment
1	ICV	1.0000	1.0000	1.0000	100	111514	
2	ICB	1.0000	1.0000	1.0000	101	111514	
3	MB	1.0000	1.0000	1.0000	102	111514	
4	LCS	1.0000	1.0000	1.0000	103	111514	
5	9453-A-1 @2	1.0000	1.0000	1.0000	104	111514	
6	9453-A-1 @40	1.0000	1.0000	1.0000	105	111514	
7	9453-A-1 DU @2	1.0000	1.0000	1.0000	106	111514	
8	9453-A-1 DU @40	1.0000	1.0000	1.0000	107	111514	
9	9453-A-1 MS @2	1.0000	1.0000	1.0000	108	111514	
10	9453-A-1 MS @40	1.0000	1.0000	1.0000	109	111514	
11	9453-A-2 @2	1.0000	1.0000	1.0000	110	111514	
12	9453-A-2 @40	1.0000	1.0000	1.0000	111	111514	
13	CCV	1.0000	1.0000	1.0000	112	111514	
14	CCB	1.0000	1.0000	1.0000	113	111514	
15	9453-A-3 @2	1.0000	1.0000	1.0000	114	111514	
16	9453-A-3 @40	1.0000	1.0000	1.0000	115	111514	
17	9453-A-4 @2	1.0000	1.0000	1.0000	116	111514	
18	9453-A-4 @40	1.0000	1.0000	1.0000	117	111514	
19	9453-A-5 @2	1.0000	1.0000	1.0000	118	111514	
20	9453-A-5 @40	1.0000	1.0000	1.0000	119	111514	
21	9453-A-6 @2	1.0000	1.0000	1.0000	120	111514	
22	9453-A-6 @40	1.0000	1.0000	1.0000	121	111514	
23	9412-A-12 @20	1.0000	1.0000	1.0000	122	111514	
24	9434-A-1 @20	1.0000	1.0000	1.0000	123	111514	
25	CCV	1.0000	1.0000	1.0000	124	111514	
26	CCB	1.0000	1.0000	1.0000	125	111514	
27	9437-A-1 @20	1.0000	1.0000	1.0000	126	111514	
28	9437-A-2 @20	1.0000	1.0000	1.0000	127	111514	
29	9438-H-1 @100	1.0000	1.0000	1.0000	128	111514	
30	9438-H-1 @500	1.0000	1.0000	1.0000	129	111514	
31	9438-H-2 @20	1.0000	1.0000	1.0000	130	111514	
32	9438-H-2 @100	1.0000	1.0000	1.0000	131	111514	
33	9438-H-2 @500	1.0000	1.0000	1.0000	132	111514	
34	9451-A-1	1.0000	1.0000	1.0000	133	111514	
35	9451-A-1 @50	1.0000	1.0000	1.0000	134	111514	
36	CCV	1.0000	1.0000	1.0000	135	111514	
37	CCB	1.0000	1.0000	1.0000	136	111514	
38	9451-A-2	1.0000	1.0000	1.0000	137	111514	
39	9451-A-2 @50	1.0000	1.0000	1.0000	138	111514	
40	9451-A-3	1.0000	1.0000	1.0000	139	111514	
41	9451-A-3 @50	1.0000	1.0000	1.0000	140	111514	
42	9451-A-4	1.0000	1.0000	1.0000	141	111514	

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Title:
Datasource: SLIC03_local
Location: JACK\SEQUENCES\14NOV
Timebase: JACK
#Samples: 47
Created: 11/15/2014 12:41:28 PM by FLAKERA
Last Update: 11/21/2014 10:53:11 AM by FLAKERA

No.	Name	Type	Pos.	Inj. Vol.	Program	Method	Status	Inj. Date/Time
43	9451-A-4 MS	Unknown	43	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 10:27:06 PM
44	9326-A-1	Unknown	44	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 10:41:01 PM
45	CCV	Unknown	45	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 10:54:56 PM
46	CCB	Unknown	46	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 11:08:52 PM
47	END	Unknown	47	50.0	SHUTDOWN	STLANIONS	Finished	11/15/2014 11:22:47 PM

Chromeleon © Dionex Corporation, Version 6.80 Build 2212

Title:
Datasource: SLIC03_local
Location: JACK\SEQUENCES\14NOV
Timebase: JACK
#Samples: 47
Created: 11/15/2014 12:41:28 PM by FLAKERA
Last Update: 11/21/2014 10:53:11 AM by FLAKERA

No.	Name	Weight	Dil. Factor	ISTD Amount	Sample ID	Replicate ID	Comment
43	9451-A-4 MS	1.0000	1.0000	1.0000	142	111514	
44	9326-A-1	1.0000	1.0000	1.0000	143	111514	
45	CCV	1.0000	1.0000	1.0000	144	111514	
46	CCB	1.0000	1.0000	1.0000	145	111514	
47	END	1.0000	1.0000	1.0000	146	111514	

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Title: STLANIONS
Datasource: SLIC03_local
Location: JACK\SEQUENCES\14NOV\111514_JACK.SEQ
Timebase: JACK
Created: 12/5/2005 2:54:29 PM by chemist
Changed: 11/11/2014 2:20:15 PM by FLAKERA

```
            Pressure.LowerLimit =              0
            Pressure.UpperLimit =              5000
            %A.Equate =                        "%A"
            %B.Equate =                        "%B"
            %C.Equate =                        "%C"
            %D.Equate =                        "%D"
            LoadPosition
            Data_Collection_Rate =             2.0
            Temperature_Compensation =         1.7
            Oven_Temperature =                 35
            Suppressor_Type =                  ASRS_4mm
            ; Carbonate =                      3.5
            ; Bicarbonate =                    1.0
            ; Hydroxide =                      0.0
            ; Tetraborate =                    0.0
            ; Other eluent =                   0.0
            ; Recommended Current =            24
            Suppressor_Current =               30
            Flow =                             1.2
            %B =                               0.0
            %C =                               0.0
            %D =                               0.0
            Curve =                            5

-2.300      Pump_Relay_1.Closed                Duration=138.00

 0.000      ECD.Autozero
            ECD_1.AcqOn
            Pump_InjectValve.InjectPosition    Duration=30.00

11.5        ECD_1.AcqOff

            End
```

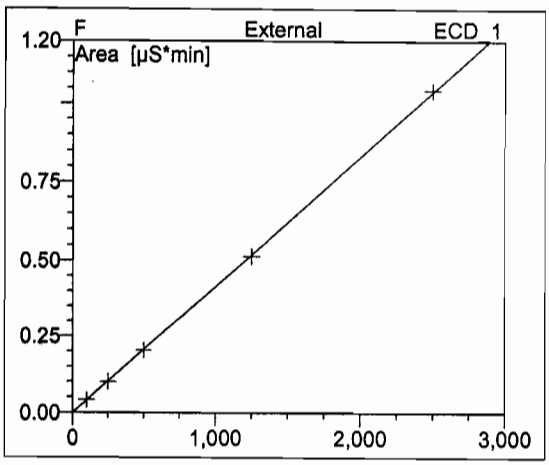
Chromeleon © Dionex Corporation, Version 6.80 Build 2212

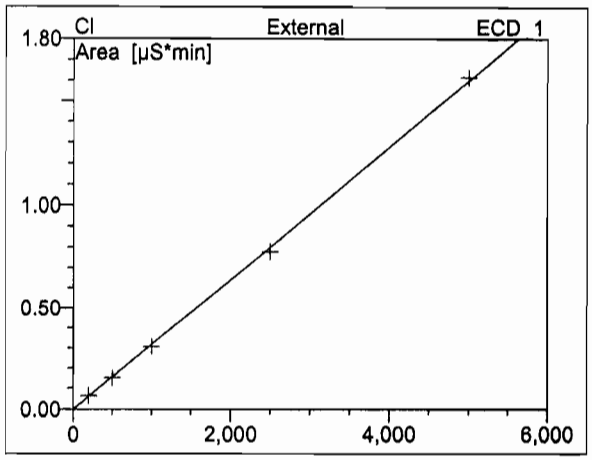
Title: STLANIONS
Datasource: SLIC03_local
Location: JACK\SEQUENCES\14NOV\111514_JACK.SEQ
Timebase: JACK
Created: 12/5/2005 2:54:29 PM by chemist
Changed: 11/11/2014 2:20:15 PM by FLAKERA

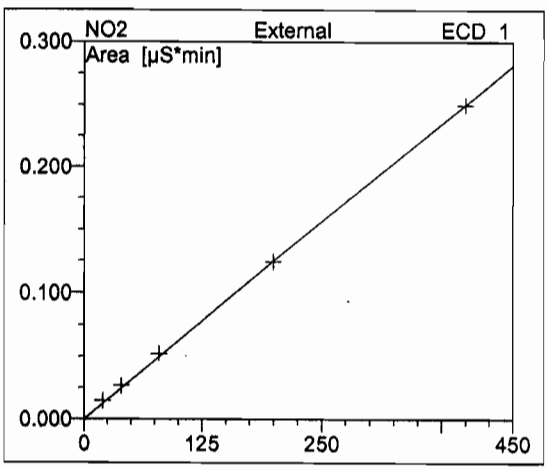
No.	Channel	Operation	Parameters

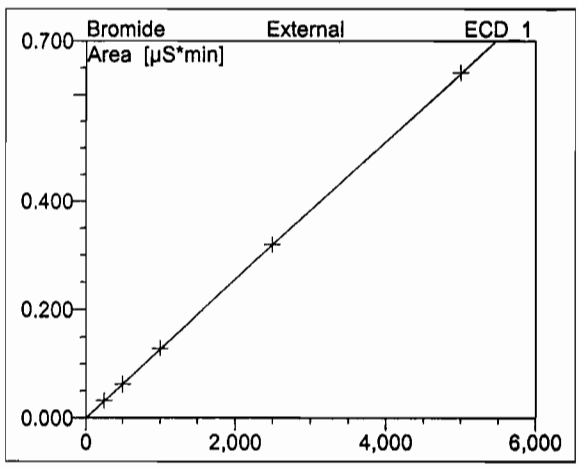
Calibration Batch Report - ECD_1

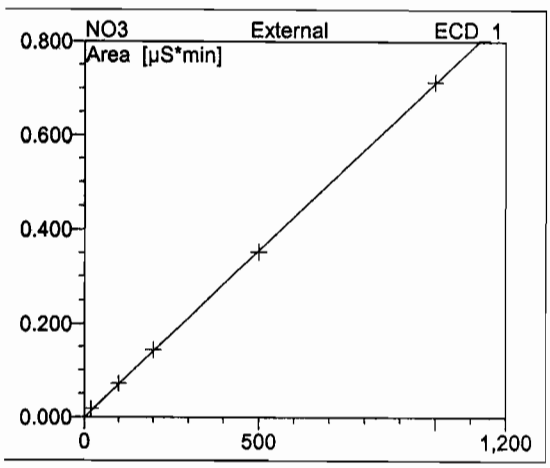
Sequence:	111414CAL_JACK	Inj. Vol.:	50.0
Program:	SLIC03_local	Operator:	SLIC03
Inj. Date/Time	11/14/14 09:40	Run Time:	11.50

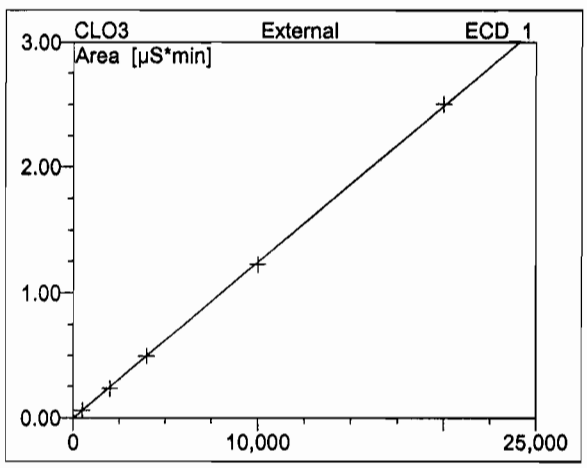


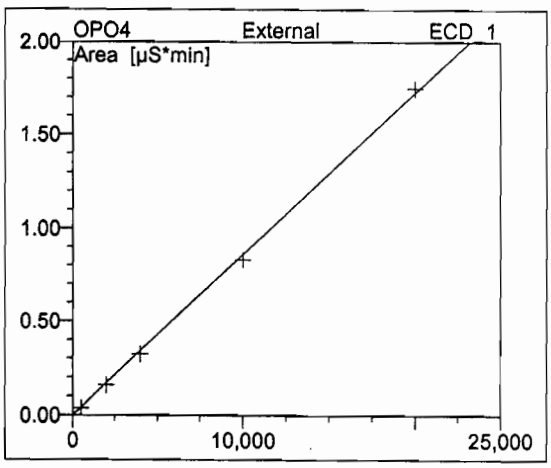


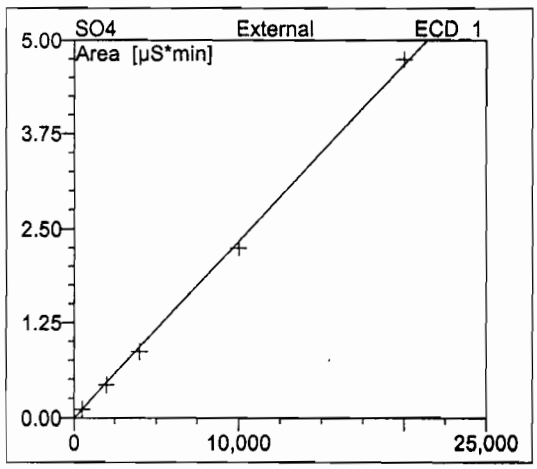












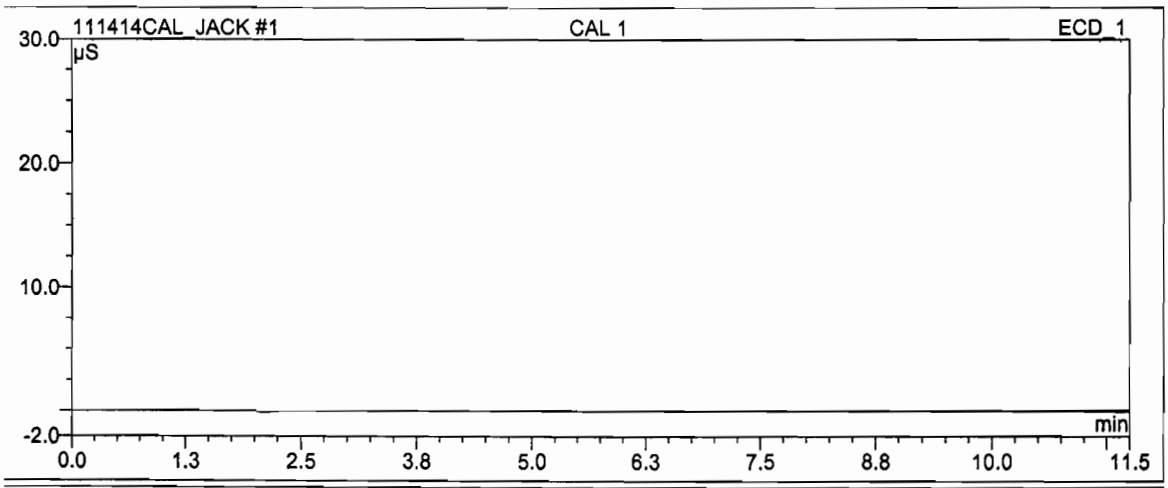
No.	Peak Name	Cal.Type	Corr.Coeff. %
1	F	Lin	99.998 ✓
2	Cl	Lin	99.980 ✓
3	NO2	Lin	99.995 ✓
4	Bromide	Lin	99.999 ✓
5	NO3	Lin	99.995 ✓
6	CLO3	Lin	99.993 ✓
7	OPO4	Lin	99.972 ✓
8	SO4	Lin	99.962 ✓

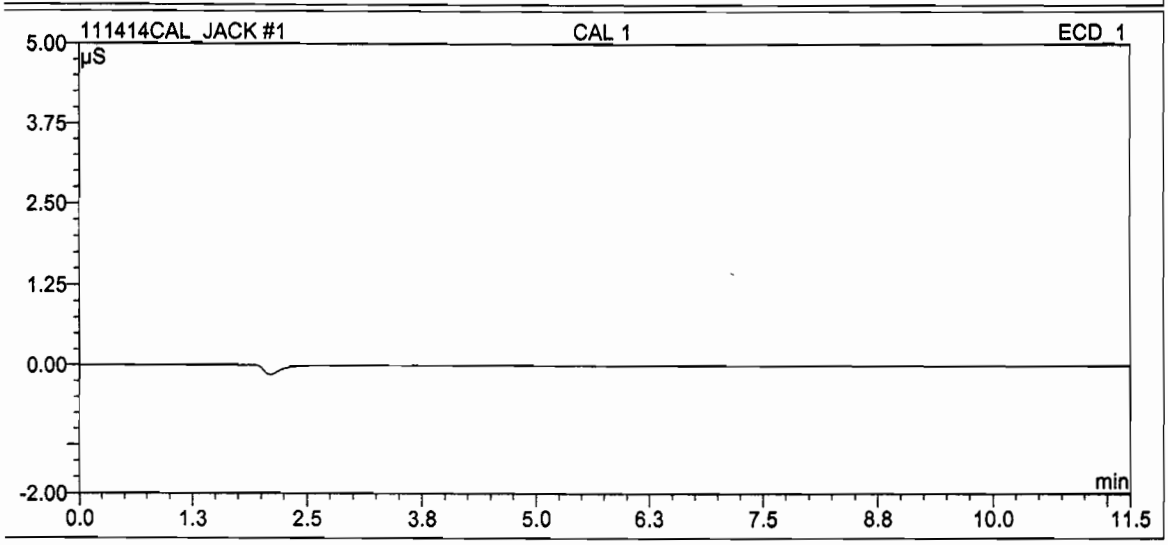
AF 11-21-14

Integration Report - ECD_1

Sample Name:	CAL 1	*Inj. Vol.:*	50.0
Sample Type:	standard	*Dilution Factor:*	1.0000
Program:	SLIC03_local	*Operator:*	n.a.
Inj. Date/Time:	14.11.14 08:58	*Run Time:*	11.50

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
		TOTAL:		0.00	0.00	0.00

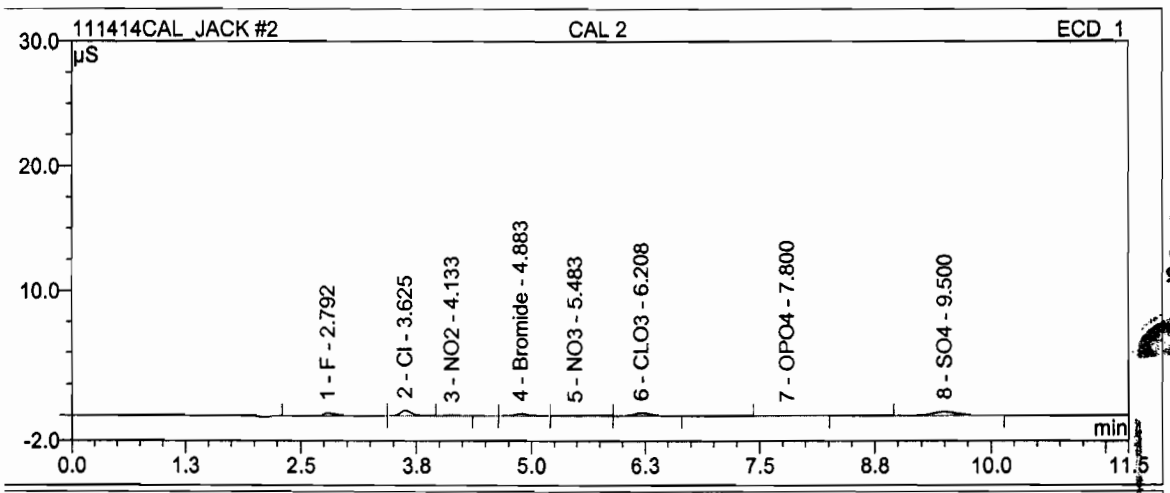


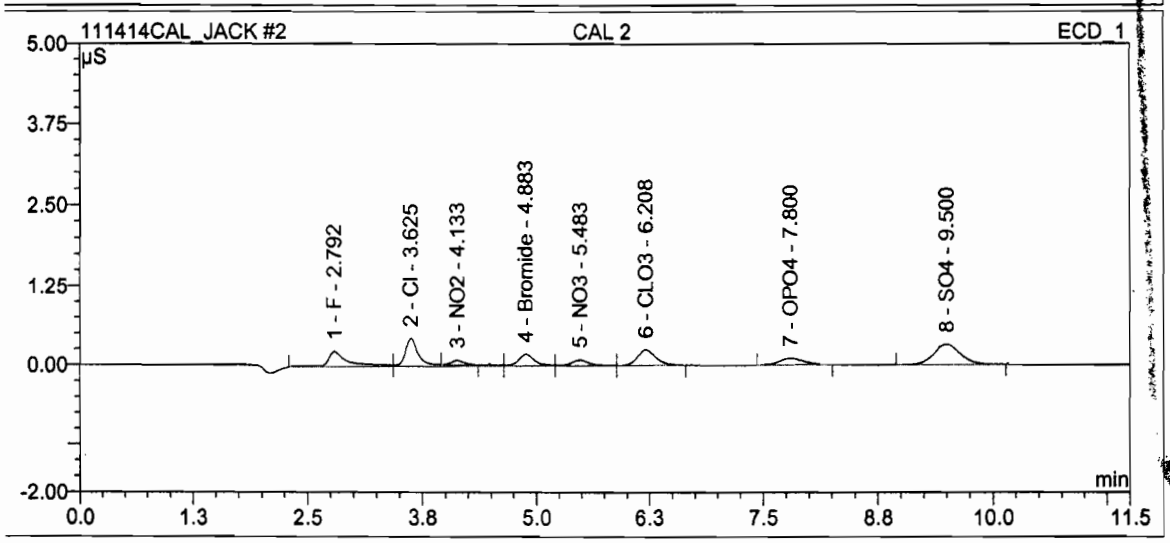


Integration Report - ECD_1

Sample Name:	**CAL 2**	*Inj. Vol.:*	**50.0**
Sample Type:	**standard**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 09:12**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.79	F	BM	0.064	0.241	154.9665
2	3.63	Cl	M	0.089	0.439	269.8235
3	4.13	NO2	Rd	0.010	0.063	21.4364
4	4.88	Bromide	M	0.038	0.184	300.6650
5	5.48	NO3	M	0.020	0.086	29.7800
6	6.21	CLO3	MB	0.057	0.242	461.7840
7	7.80	OPO4	BMB	0.031	0.099	362.9504
8	9.50	SO4	BMB	0.109	0.319	465.1658
		TOTAL:		0.42	1.67	2066.57





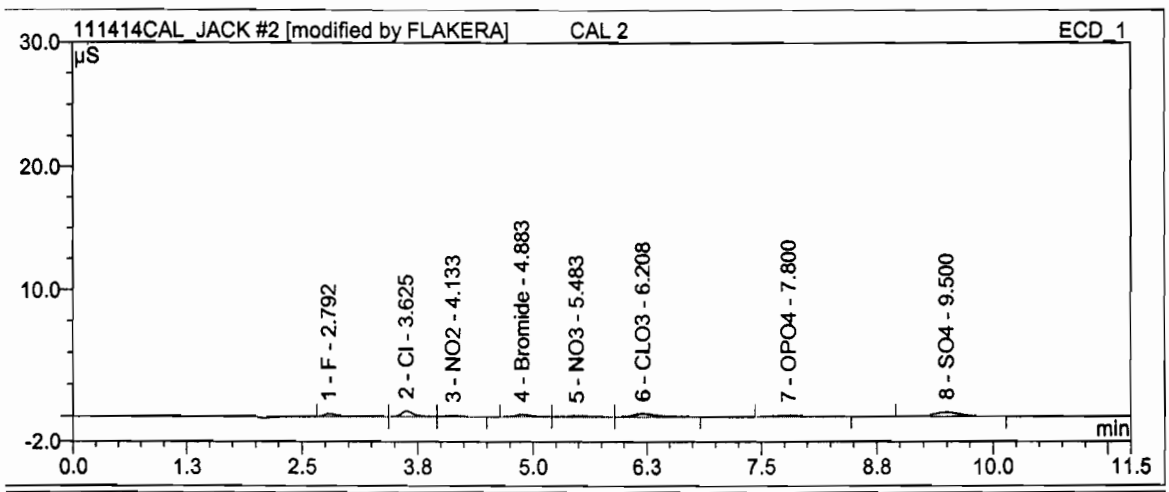
INT AF 11-21-14

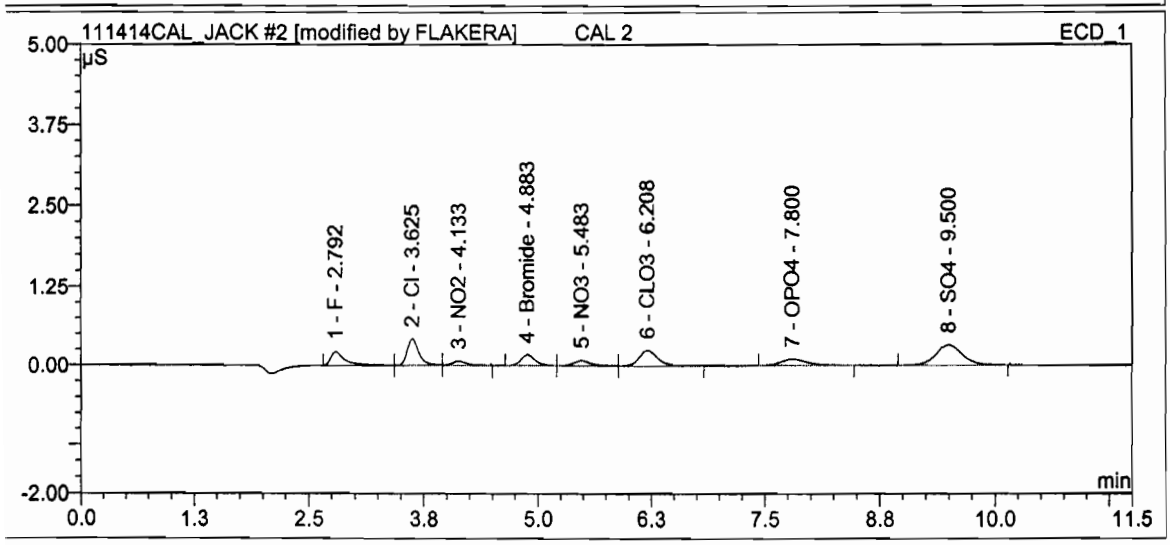
1. Peak Not Found
2. Incomplete Integration
3. Assign Peak
4. Wrong Peak
5. Baseline Smoothing All but Sol
6. Split Peak
7. Other

Integration Report - ECD_1

Sample Name:	**CAL 2**	*Inj. Vol.:*	**50.0**
Sample Type:	**standard**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 09:12**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.79	F	BM *	0.041	0.216	97.5549
2	3.63	Cl	M *	0.064	0.420	201.4584
3	4.13	NO2	MB*	0.015	0.072	23.2238
4	4.88	Bromide	BM *	0.032	0.174	250.3125
5	5.48	NO3	Mb*	0.018	0.081	25.0503
6	6.21	CLO3	bMB*	0.059	0.244	473.9496
7	7.80	OPO4	BMB*	0.035	0.102	403.6945
8	9.50	SO4	BMB	0.109	0.319	465.2240
		TOTAL:		0.37	1.63	1940.47

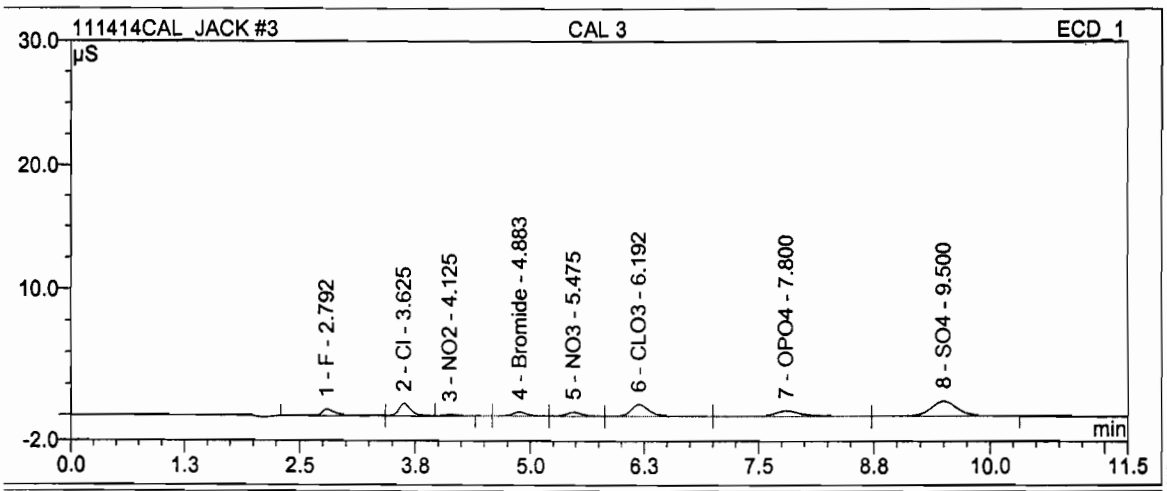


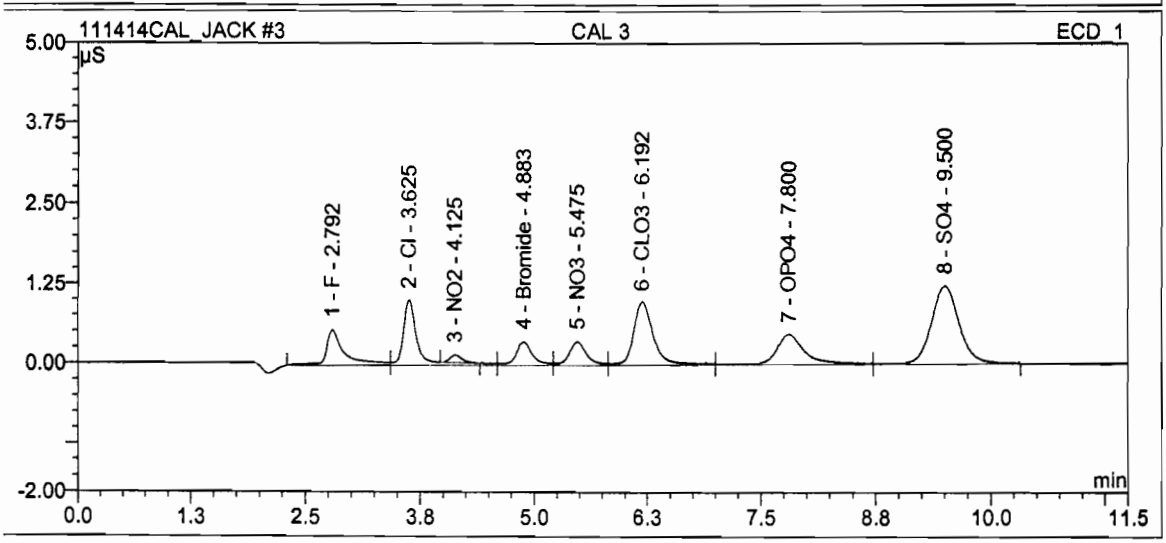


Integration Report - ECD_1

Sample Name:	**CAL 3**	*Inj. Vol.:*	**50.0**
Sample Type:	**standard**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 09:26**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.79	F	BM	0.130	0.550	312.3084
2	3.63	Cl	M	0.191	1.018	582.1326
3	4.13	NO2	Rd	0.018	0.114	37.0833
4	4.88	Bromide	M	0.077	0.361	612.2616
5	5.48	NO3	M	0.083	0.360	120.6274
6	6.19	CLO3	M	0.252	0.983	2048.6485
7	7.80	OPO4	M	0.175	0.462	2031.0739
8	9.50	SO4	MB	0.430	1.224	1838.5495
		TOTAL:		1.36	5.07	7582.69





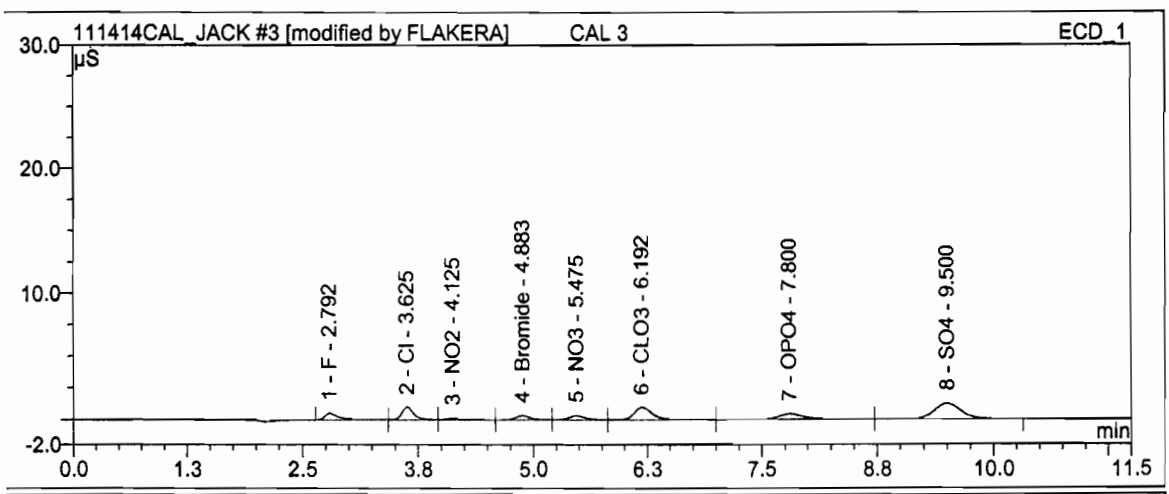
MI AF 11-21-14

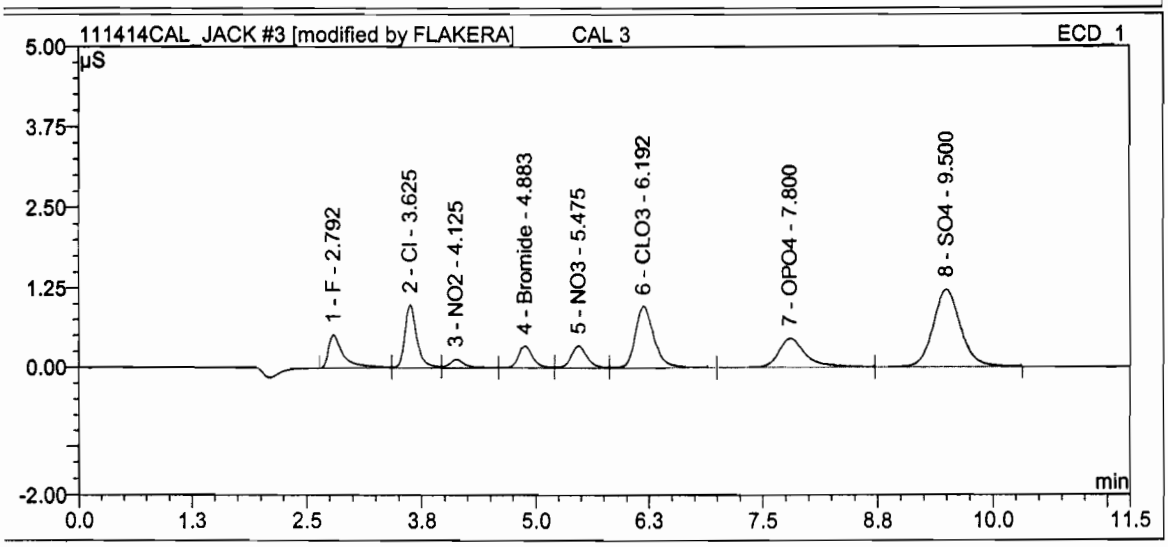
1. Peak Not Found
2. Incomplete Integration
3. Assign Peak
4. Wrong Peak
5. Baseline Smoothing All
6. Split Peak
7. Other _____

Integration Report - ECD_1

Sample Name:	**CAL 3**	*Inj. Vol.:*	**50.0**
Sample Type:	**standard**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 09:26**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.79	F	BM *	0.099	0.519	238.9027
2	3.63	Cl	M *	0.153	0.990	476.5923
3	4.13	NO2	M *	0.027	0.133	42.4621
4	4.88	Bromide	M *	0.063	0.338	490.5671
5	5.48	NO3	M *	0.071	0.340	99.2706
6	6.19	CLO3	M *	0.233	0.966	1874.2815
7	7.80	OPO4	M *	0.158	0.452	1832.1289
8	9.50	SO4	MB*	0.425	1.220	1816.4149
		TOTAL:		1.23	4.96	6870.62

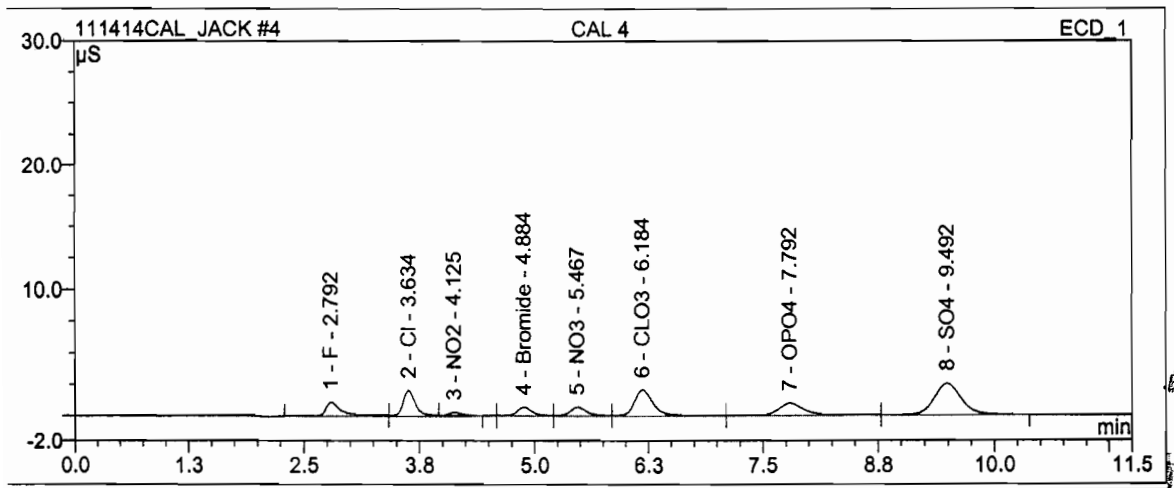


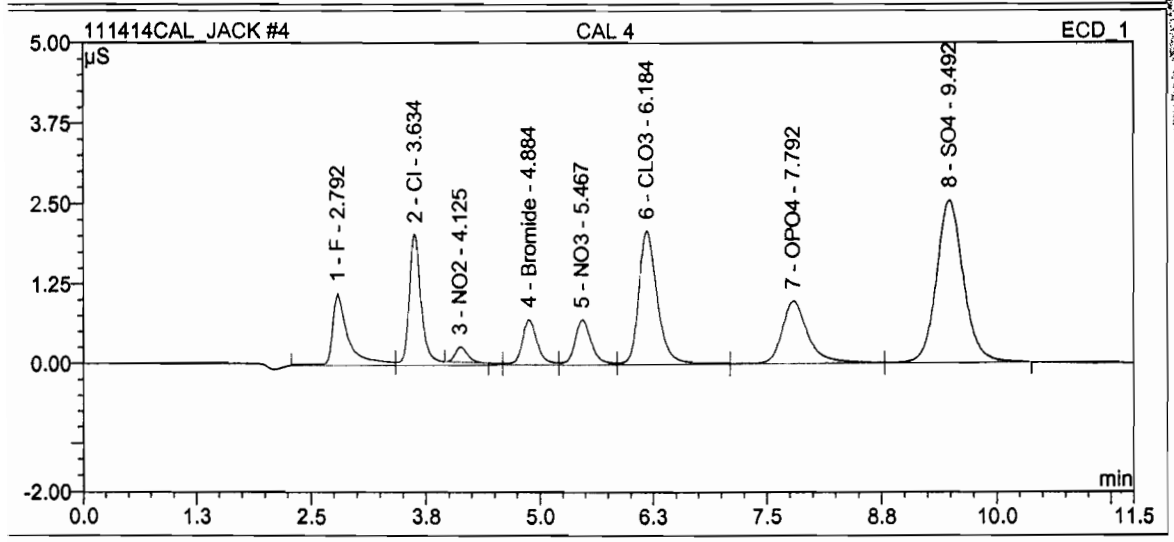


Integration Report - ECD_1

Sample Name:	**CAL 4**	*Inj. Vol.:*	**50.0**
Sample Type:	**standard**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 09:40**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.79	F	BM	0.225	1.127	541.7527
2	3.63	Cl	M	0.342	2.045	1039.4852
3	4.13	NO2	Rd	0.038	0.239	78.2676
4	4.88	Bromide	M	0.137	0.710	1095.8769
5	5.47	NO3	M	0.150	0.702	219.0471
6	6.18	CLO3	M	0.502	2.087	4074.9392
7	7.79	OPO4	M	0.327	0.982	3782.2688
8	9.49	SO4	MB	0.868	2.539	3713.3565
		TOTAL:		2.59	10.43	14544.99





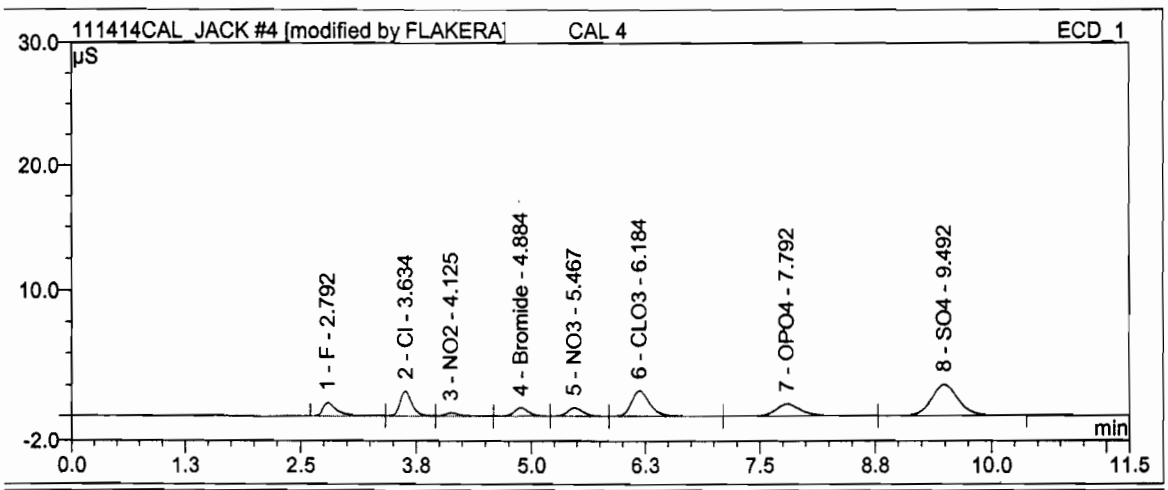
MI
AF 11-21-14

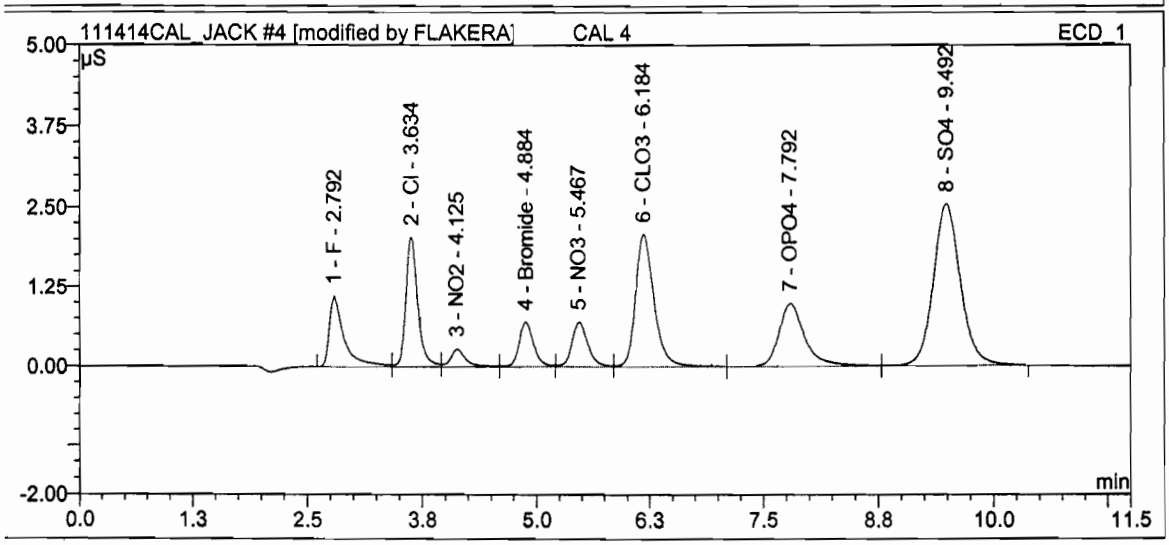
1. Peak Not Found
2. Incomplete Integration
3. Assign Peak
4. Wrong Peak
5. Baseline Smoothing all
6. Split Peak
7. Other

Integration Report - ECD_1

Sample Name:	**CAL 4**	*Inj. Vol.:*	**50.0**
Sample Type:	**standard**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 09:40**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.79	F	BM *	0.203	1.105	489.1775
2	3.63	Cl	M *	0.308	2.026	961.1060
3	4.13	NO2	M *	0.052	0.269	83.1120
4	4.88	Bromide	M *	0.129	0.697	1007.1940
5	5.47	NO3	M *	0.144	0.692	201.7257
6	6.18	CLO3	Mb*	0.495	2.079	3972.0351
7	7.79	OPO4	bM *	0.323	0.979	3742.0953
8	9.49	SO4	MB*	0.867	2.538	3708.7362
		TOTAL:		2.52	10.39	14165.18

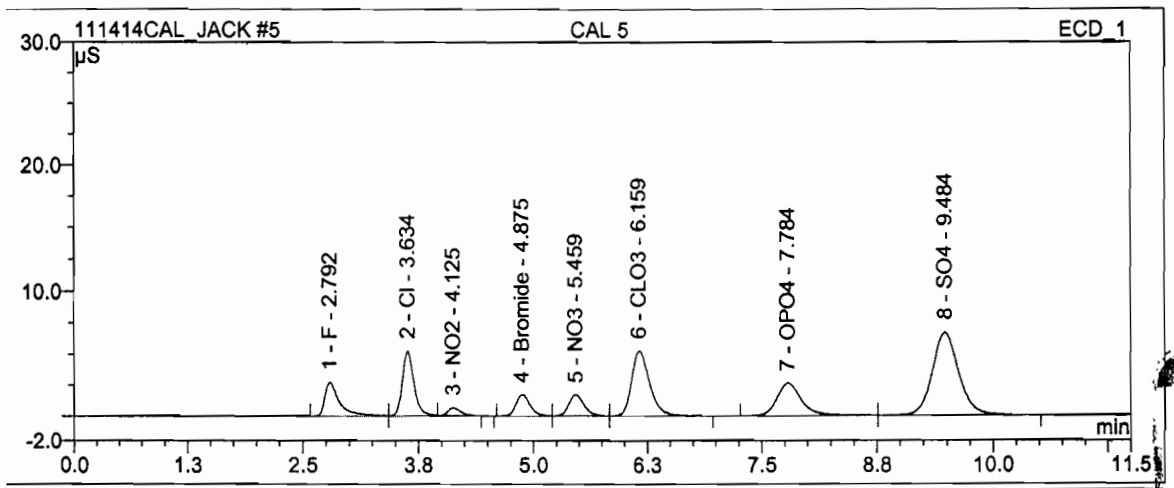


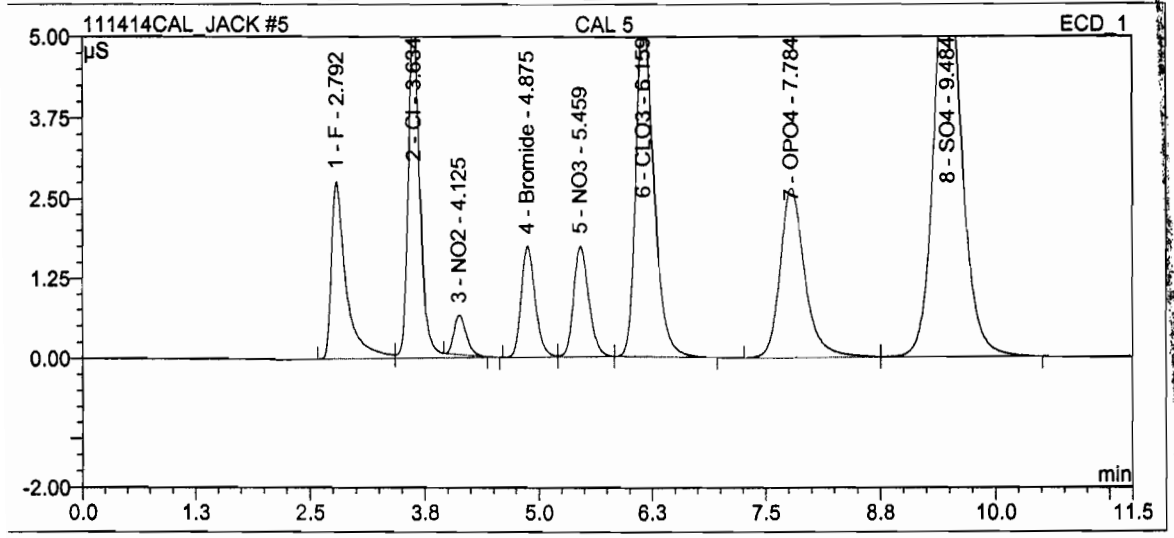


Integration Report - ECD_1

Sample Name:	CAL 5	*Inj. Vol.:*	50.0
Sample Type:	standard	*Dilution Factor:*	1.0000
Program:	SLIC03_local	*Operator:*	n.a.
Inj. Date/Time:	14.11.14 09:54	*Run Time:*	11.50

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.79	F	BM	0.511	2.769	1227.8269
2	3.63	Cl	MB	0.792	5.250	2409.6675
3	4.13	NO2	Rd	0.095	0.607	197.5217
4	4.88	Bromide	BM	0.308	1.736	2462.9995
5	5.46	NO3	Mb	0.337	1.726	491.4665
6	6.16	CLO3	bMB	1.207	5.253	9802.1573
7	7.78	OPO4	BM	0.830	2.654	9613.2696
8	9.48	SO4	MB	2.243	6.684	9593.0847
		TOTAL:		6.32	26.68	35797.99





MI AF 11-24

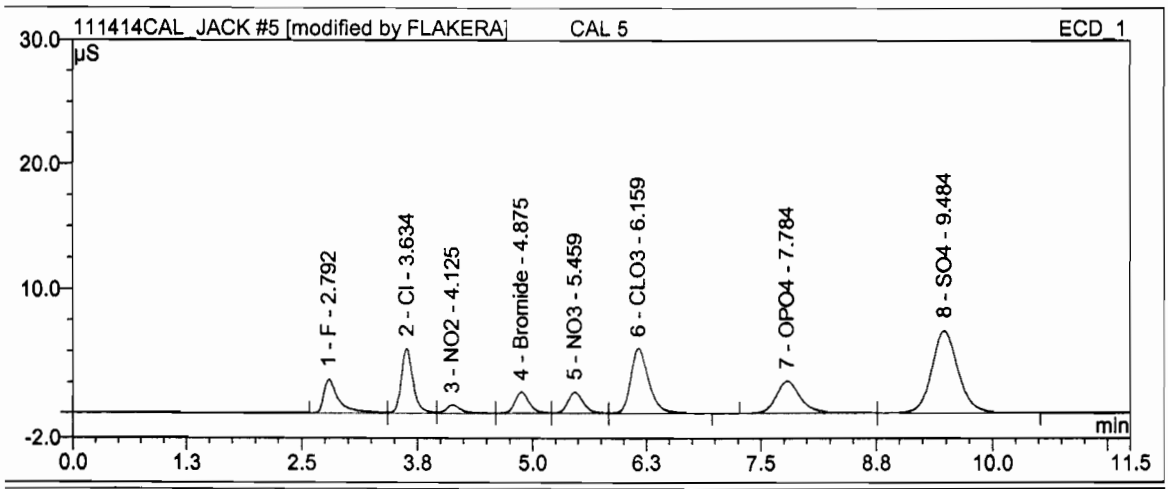
All but OPO4, SO4

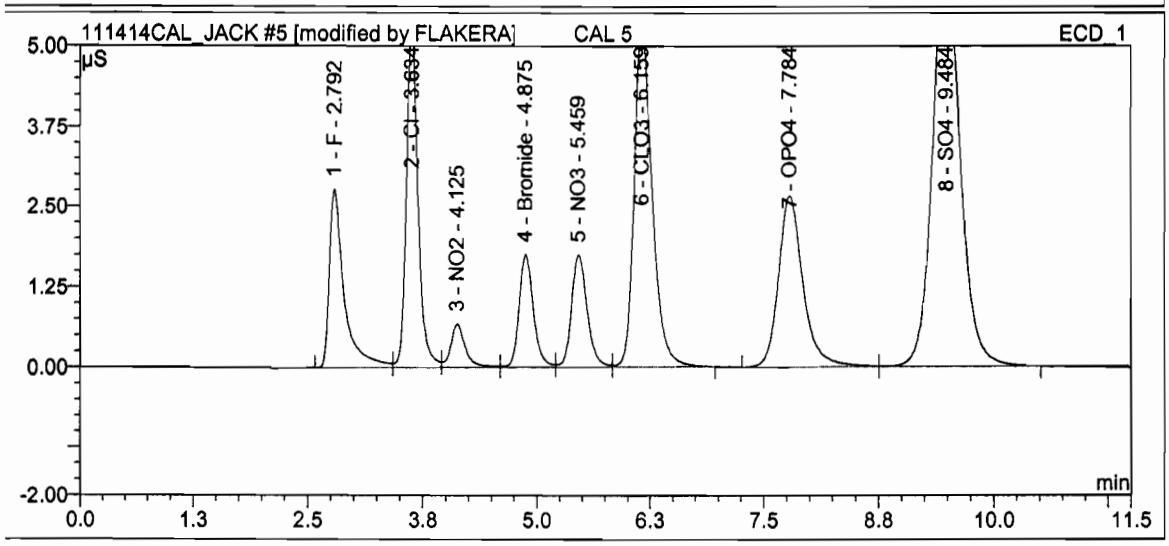
1. Peak Not Found
2. Incomplete Integration
3. Assign Peak
4. Wrong Peak
5. Baseline Smoothing
6. Split Peak
7. Other _____

Integration Report - ECD_1

Sample Name:	**CAL 5**	*Inj. Vol.:*	**50.0**
Sample Type:	**standard**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 09:54**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.79	F	BM *	0.514	2.771	1237.1922
2	3.63	Cl	M *	0.777	5.258	2426.6495
3	4.13	NO2	M *	0.124	0.669	198.2910
4	4.88	Bromide	M *	0.319	1.754	2491.5014
5	5.46	NO3	M *	0.352	1.750	494.7860
6	6.16	CLO3	MB*	1.223	5.273	9823.1009
7	7.78	OPO4	BM	0.830	2.654	9623.5994
8	9.48	SO4	MB	2.243	6.684	9594.2845
		TOTAL:		6.38	26.81	35889.40

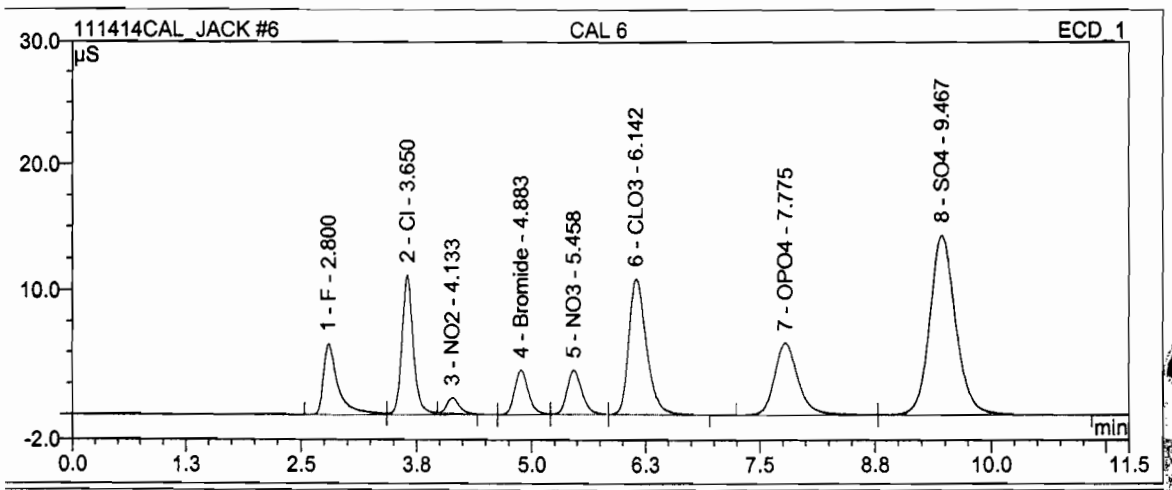


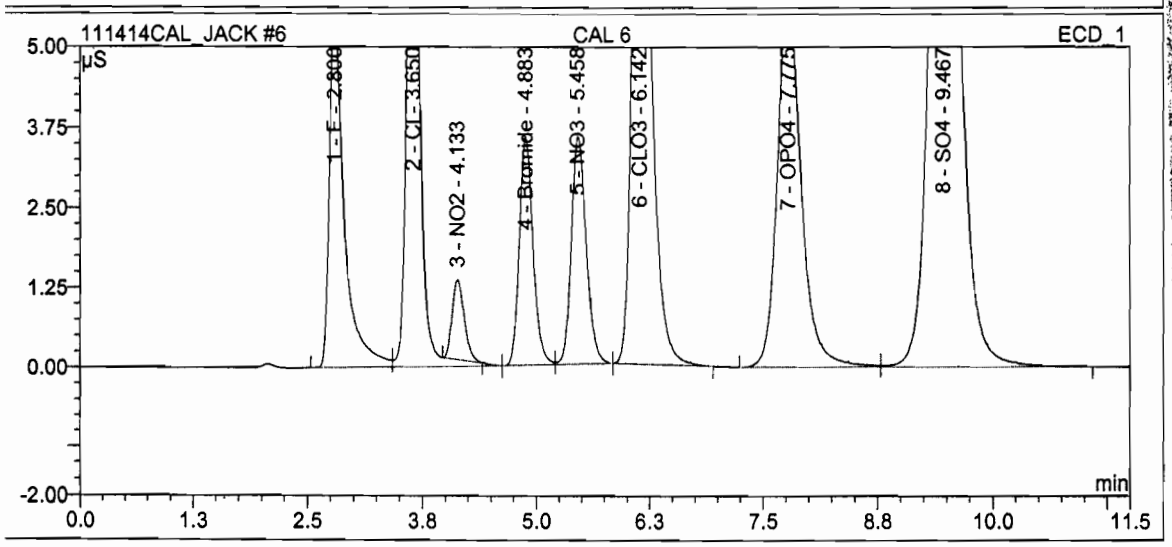


Integration Report - ECD_1

Sample Name:	**CAL 6**	*Inj. Vol.:*	**50.0**
Sample Type:	**standard**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 10:08**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BM	1.038	5.693	2494.3065
2	3.65	Cl	MB	1.652	11.237	5026.2630
3	4.13	NO2	Rd	0.193	1.251	401.8055
4	4.88	Bromide	bM	0.623	3.578	4985.5654
5	5.46	NO3	Mb	0.684	3.559	998.1990
6	6.14	CLO3	bMB	2.473	10.944	20080.0240
7	7.78	OPO4	BM	1.748	5.799	20237.2303
8	9.47	SO4	MB	4.742	14.370	20277.8023
		TOTAL:		13.15	56.43	74501.20





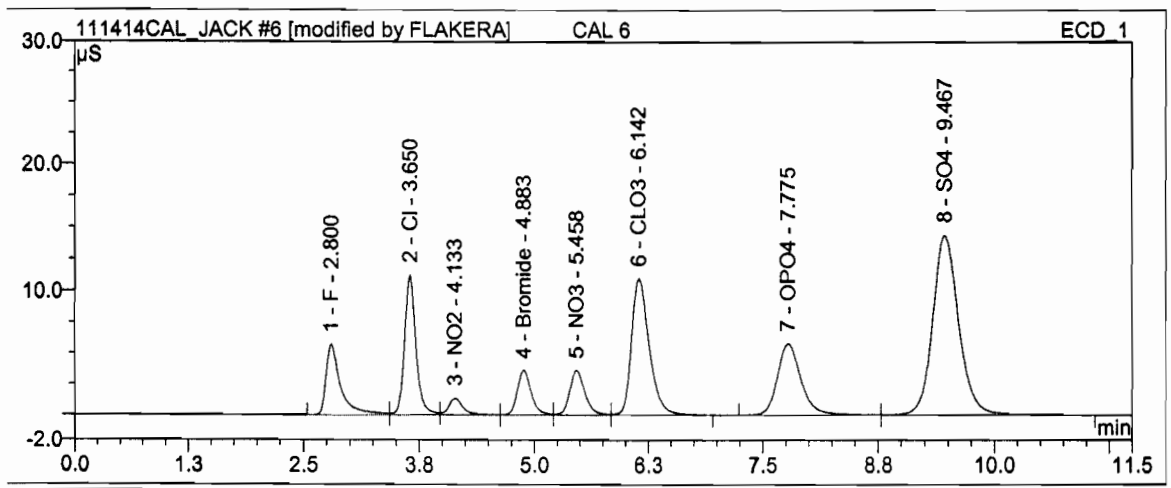
MI
AF 11-21-14

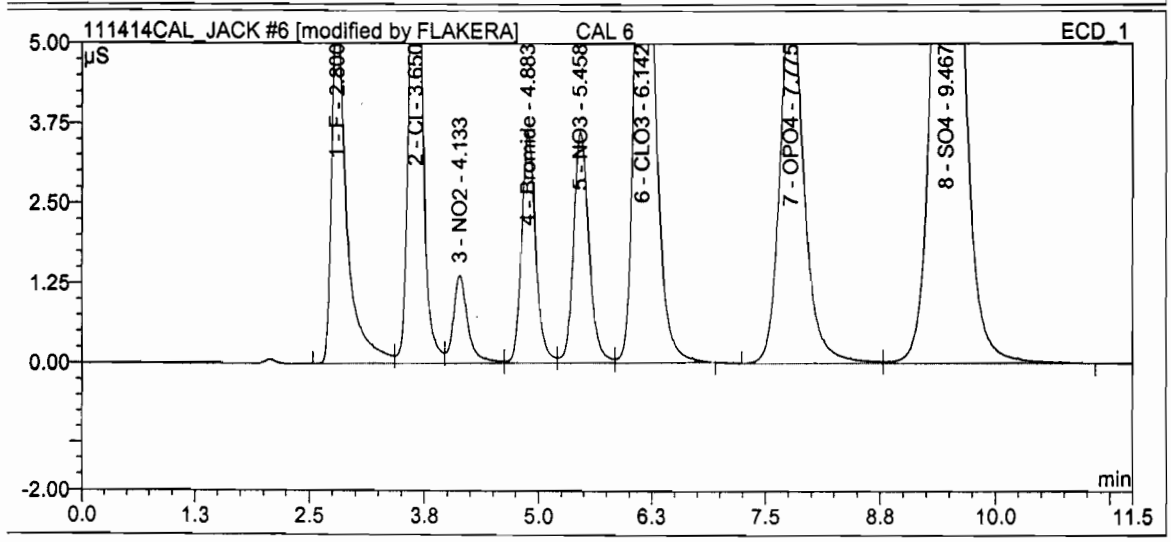
1. Peak Not Found
2. Incomplete Integration
3. Assign Peak
4. Wrong Peak
5. Baseline Smoothing all but OPO4 SO4
6. Split Peak
7. Other _____

Integration Report - ECD_1

Sample Name:	**CAL 6**	*Inj. Vol.:*	**50.0**
Sample Type:	**standard**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 10:08**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BM *	1.042	5.696	2509.7759
2	3.65	Cl	M *	1.615	11.249	5046.7364
3	4.13	NO2	M *	0.250	1.375	399.8247
4	4.88	Bromide	M *	0.641	3.608	5003.7382
5	5.46	NO3	M *	0.714	3.604	1002.2338
6	6.14	CLO3	MB*	2.503	10.984	20107.2656
7	7.78	OPO4	BM	1.748	5.799	20258.9760
8	9.47	SO4	MB	4.742	14.370	20280.3384
		TOTAL:		13.26	56.69	74608.89

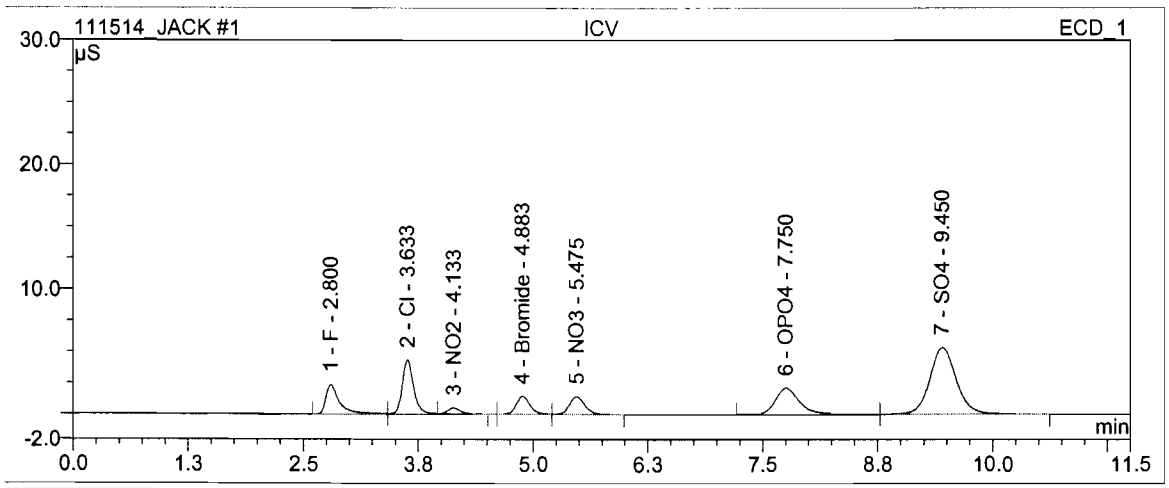


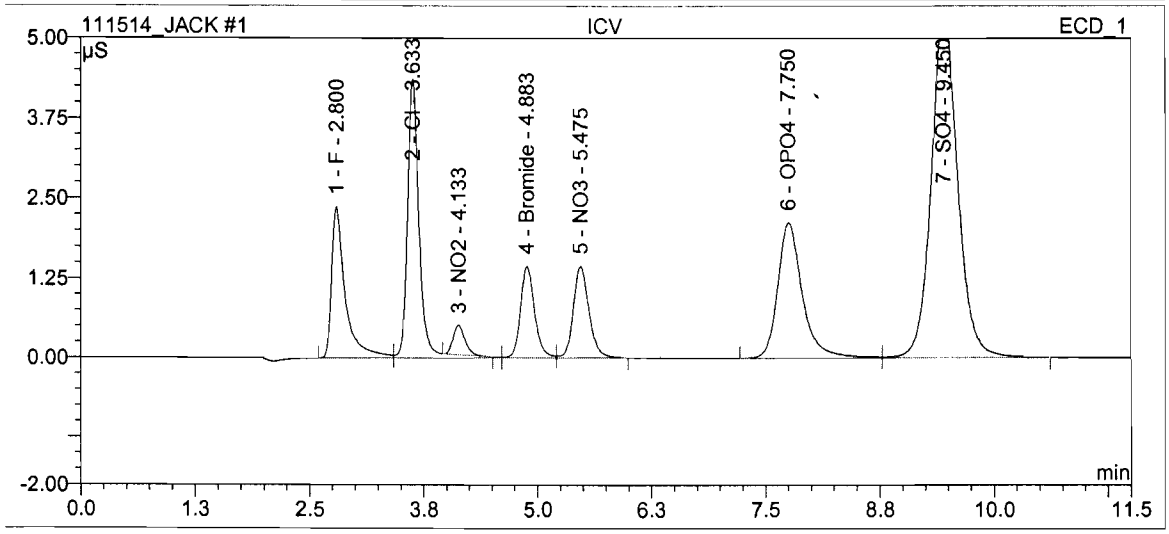


Integration Report - ECD_1

Sample Name:	**ICV**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 12:42**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BM	0.415	2.365	998.6689
2	3.63	Cl	M	0.649	4.360	2027.6642
3	4.13	NO2	Rd	0.071	0.464	113.6811
4	4.88	Bromide	M	0.258	1.444	2016.0632
5	5.48	NO3	MB	0.288	1.438	405.1048
6	7.75	OPO4	BM	0.669	2.124	7758.4066
7	9.45	SO4	MB	1.813	5.384	7754.0759
		TOTAL:		4.16	17.58	21073.66



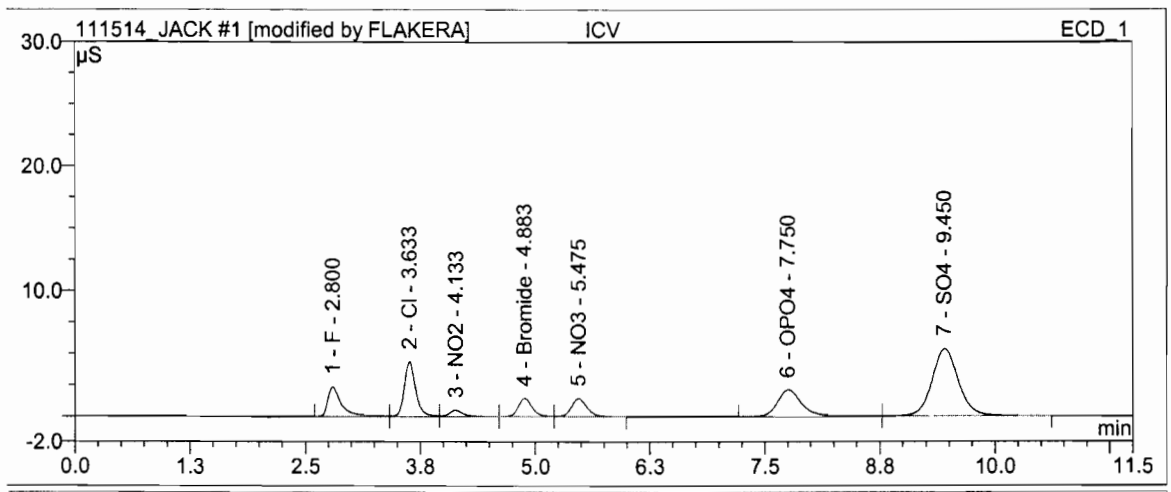


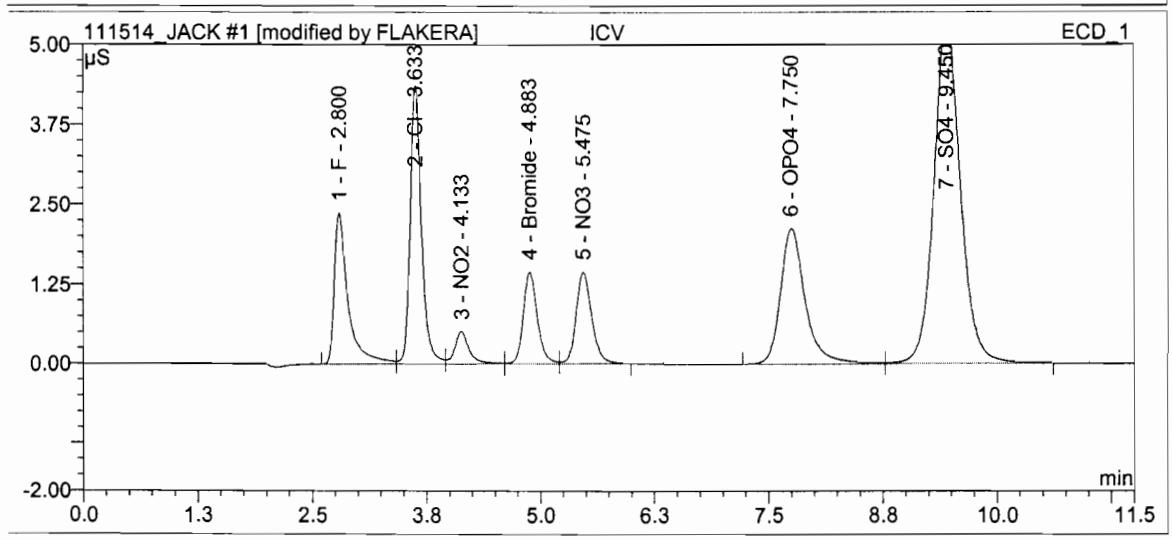
MT AF 11-21-14

Integration Report - ECD_1

Sample Name:	**ICV**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 12:42**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BM	0.415	2.365	998.6689
2	3.63	Cl	M *	0.627	4.360	1958.0653
3	4.13	NO2	M *	0.093	0.511	149.2648
4	4.88	Bromide	M	0.258	1.444	2016.0632
5	5.48	NO3	MB	0.288	1.438	405.1048
6	7.75	OPO4	BM	0.669	2.124	7758.4066
7	9.45	SO4	MB	1.813	5.384	7754.0759
		TOTAL:		4.16	17.63	21039.65

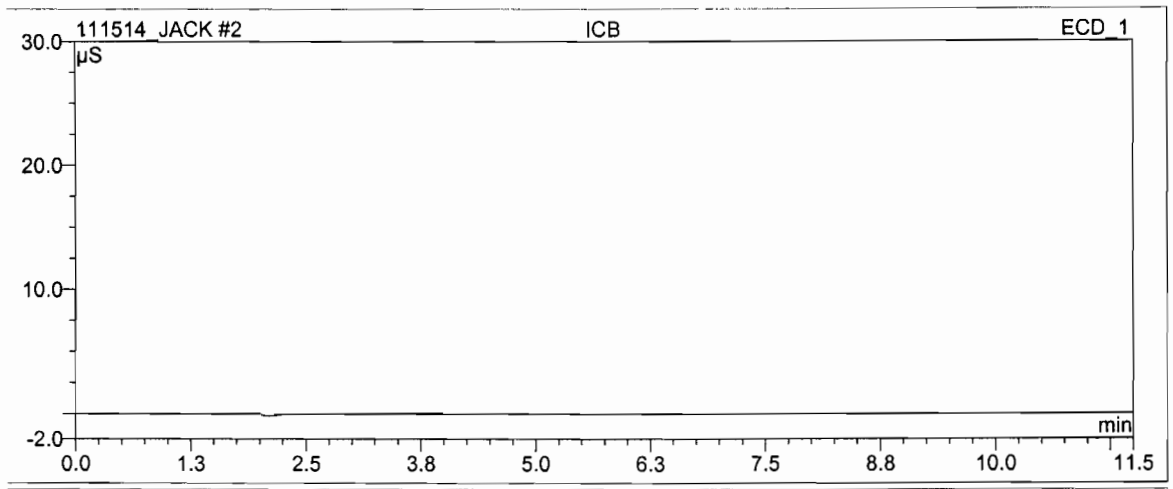


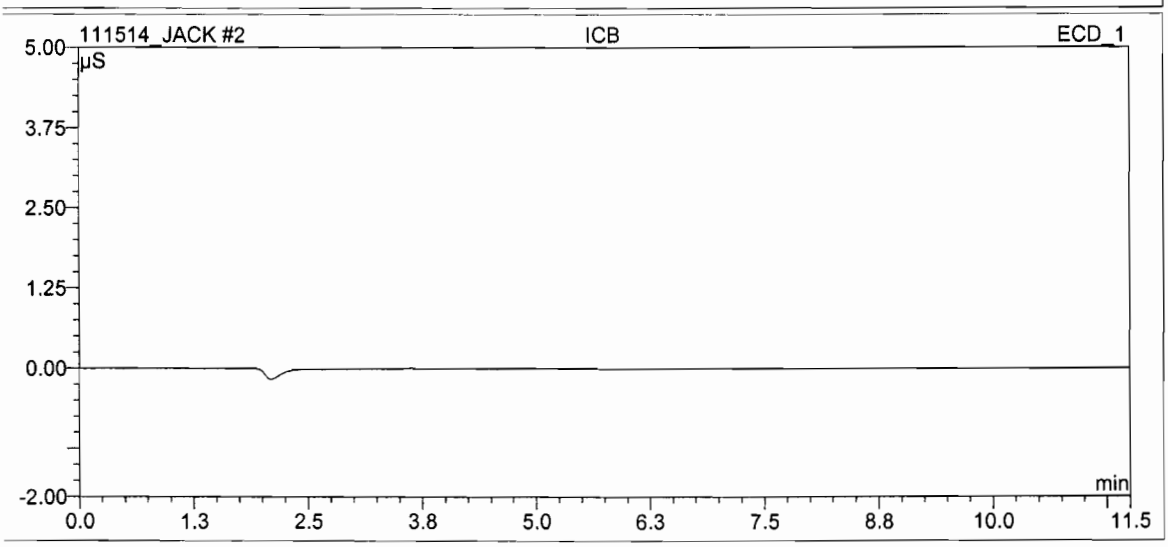


Integration Report - ECD_1

Sample Name:	**ICB**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 12:56**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
		TOTAL:		0.00	0.00	0.00

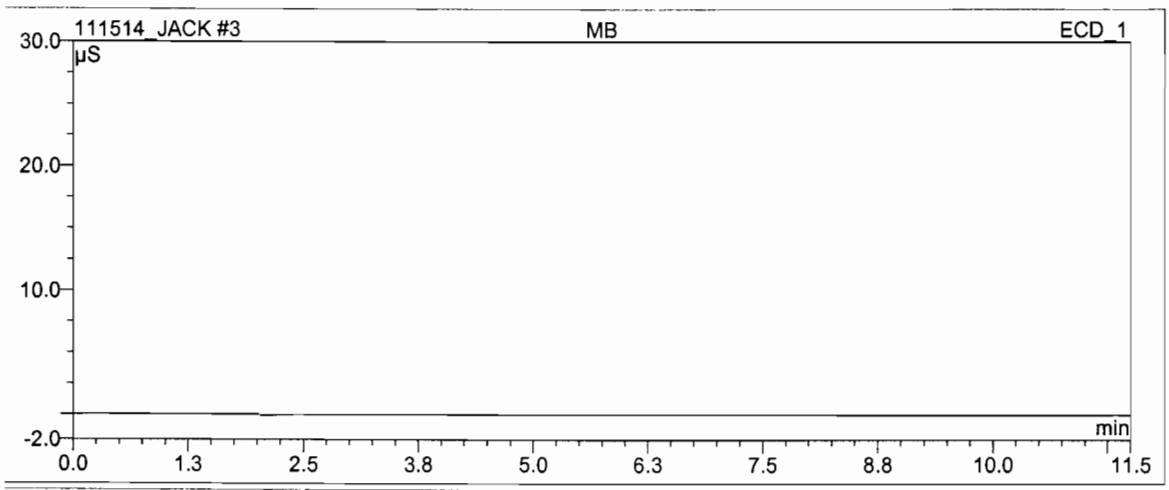


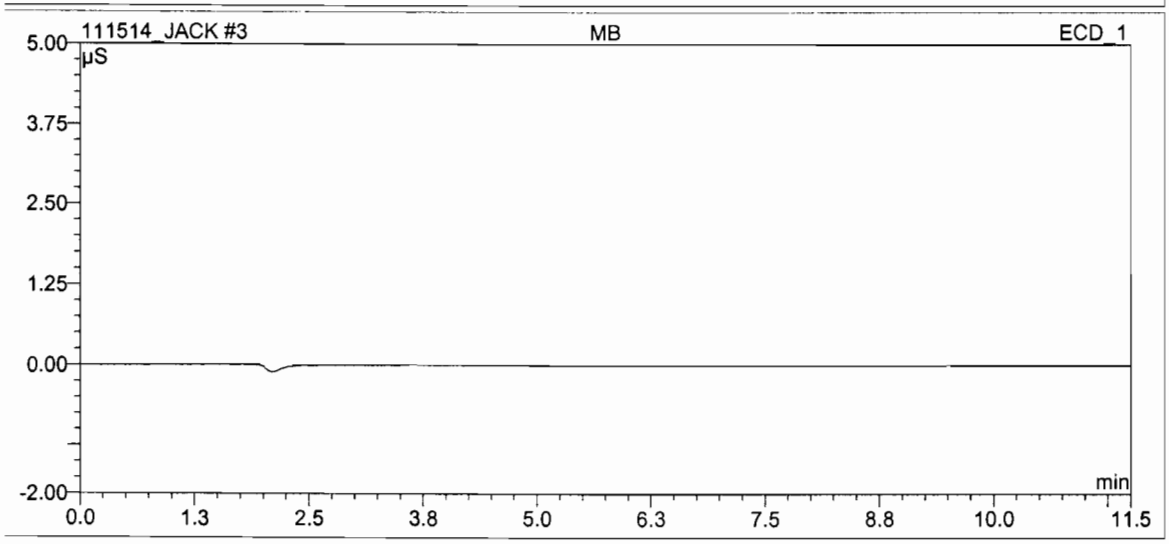


Integration Report - ECD_1

Sample Name:	**MB**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 13:10**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
		TOTAL:		0.00	0.00	0.00

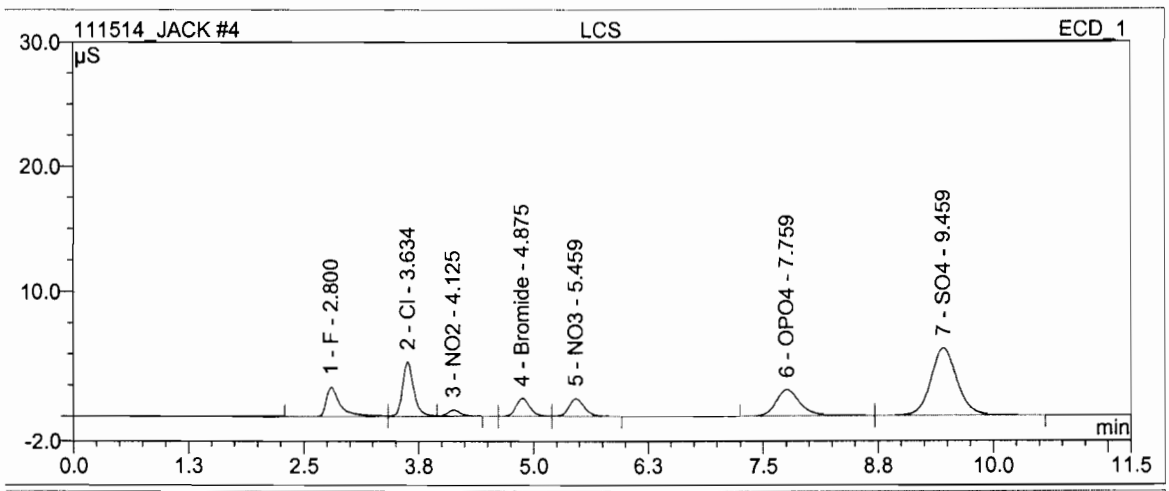


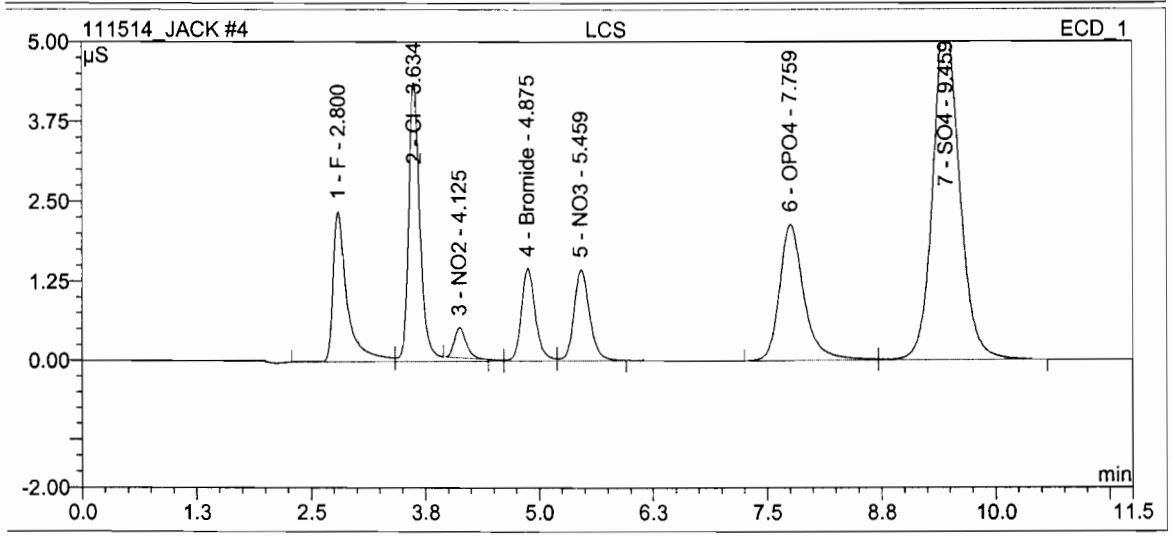


Integration Report - ECD_1

Sample Name:	**LCS**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 13:24**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BM	0.428	2.356	1030.7186
2	3.63	Cl	M	0.656	4.366	2050.9539
3	4.13	NO2	Rd	0.072	0.474	115.1703
4	4.88	Bromide	M	0.260	1.453	2027.0989
5	5.46	NO3	MB	0.286	1.431	401.0550
6	7.76	OPO4	BM	0.671	2.139	7776.9679
7	9.46	SO4	MB	1.819	5.407	7781.8031
		TOTAL:		4.19	17.63	21183.77





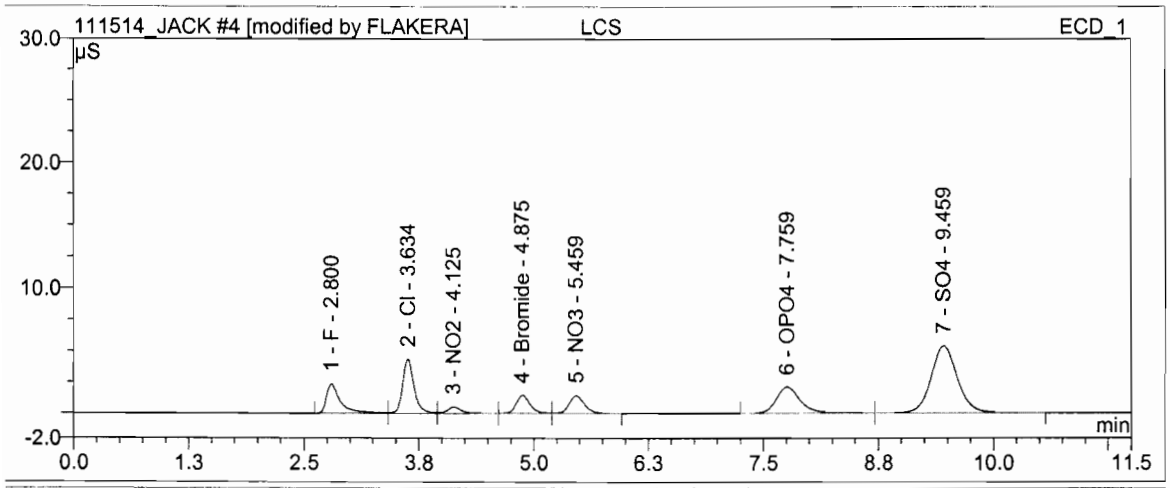
MI AF 11-21-14

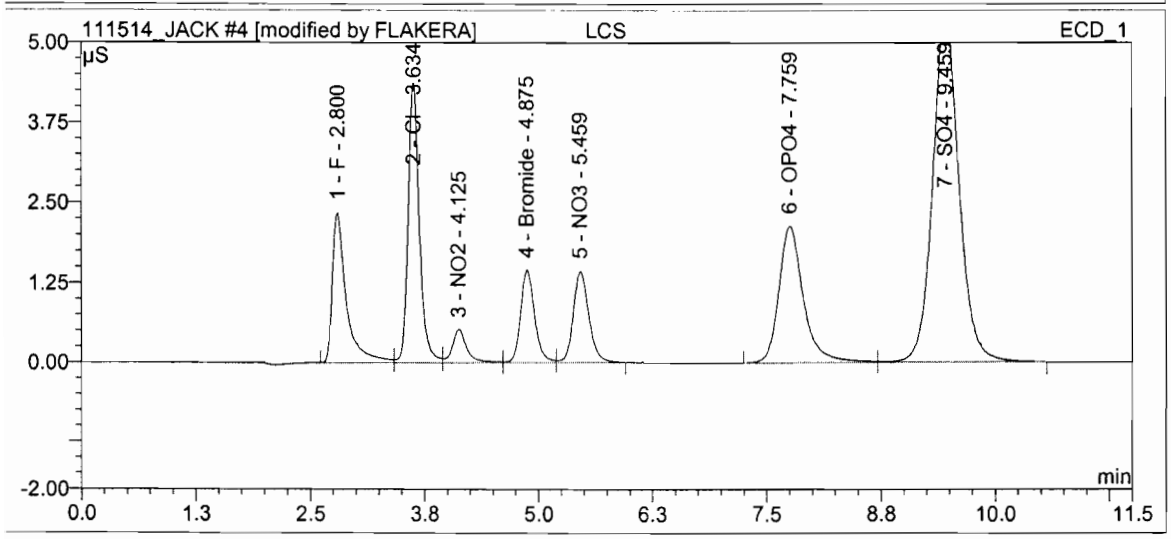
All but OPO4, SO4

Integration Report - ECD_1

Sample Name:	**LCS**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 13:24**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BM *	0.415	2.343	998.7804
2	3.63	Cl	M *	0.624	4.356	1951.0110
3	4.13	NO2	M *	0.094	0.520	150.5237
4	4.88	Bromide	M *	0.257	1.449	2006.8882
5	5.46	NO3	MB*	0.284	1.429	399.3486
6	7.76	OPO4	BM	0.671	2.139	7776.9679
7	9.46	SO4	MB	1.819	5.407	7781.8031
		TOTAL:		4.17	17.64	21065.32

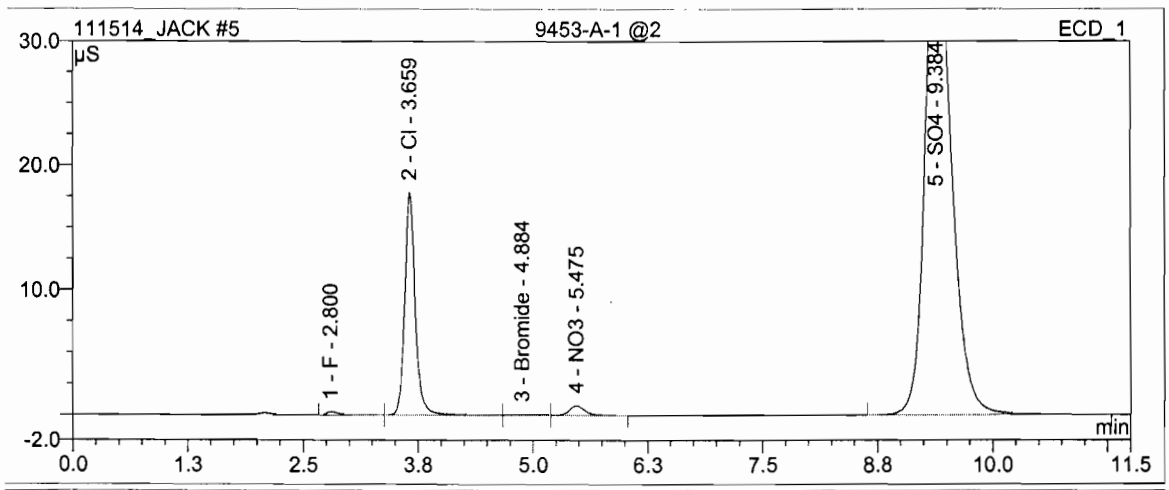


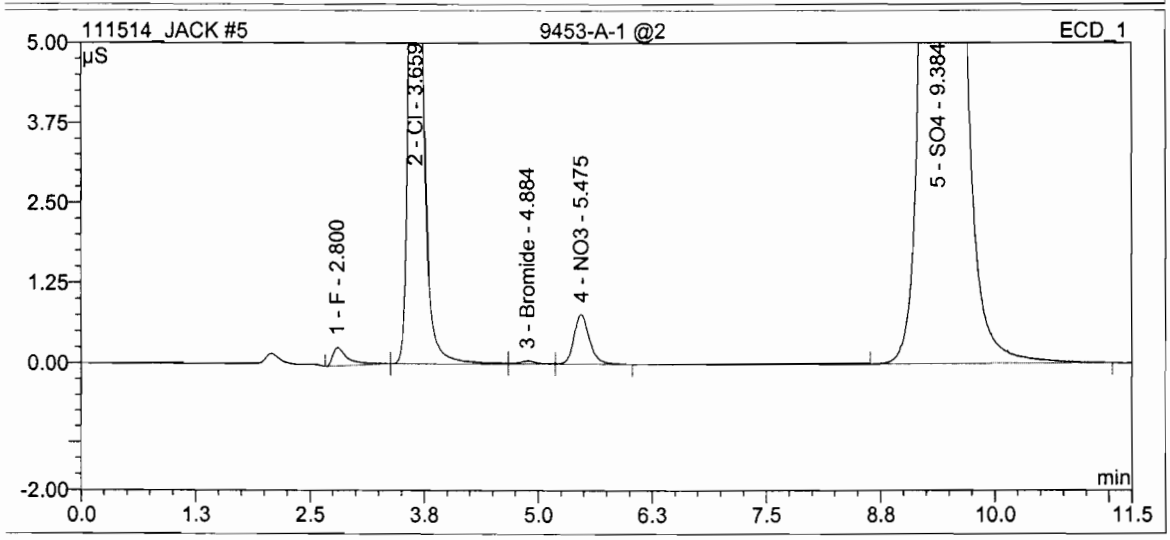


Integration Report - ECD_1

Sample Name:	**9453-A-1 @2**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 13:38**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BMB	0.056	0.289	135.2275
2	3.66	Cl	bM	2.367	17.847	7397.3305
3	4.88	Bromide	M	0.011	0.050	85.7850
4	5.48	NO3	MB	0.155	0.776	217.6788
5	9.38	SO4	BMB	13.390	41.537	57271.3841
		TOTAL:		15.98	60.50	65107.41

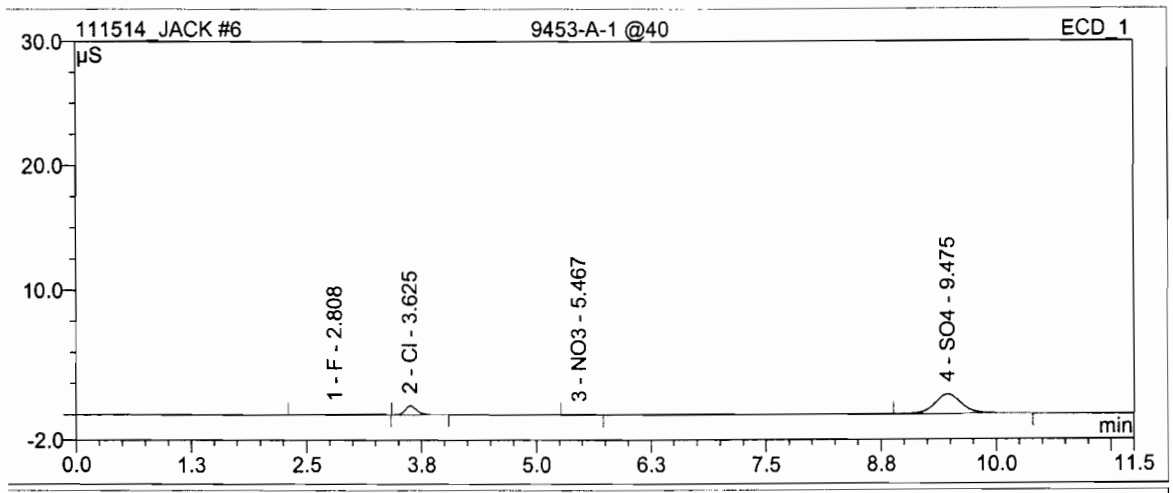


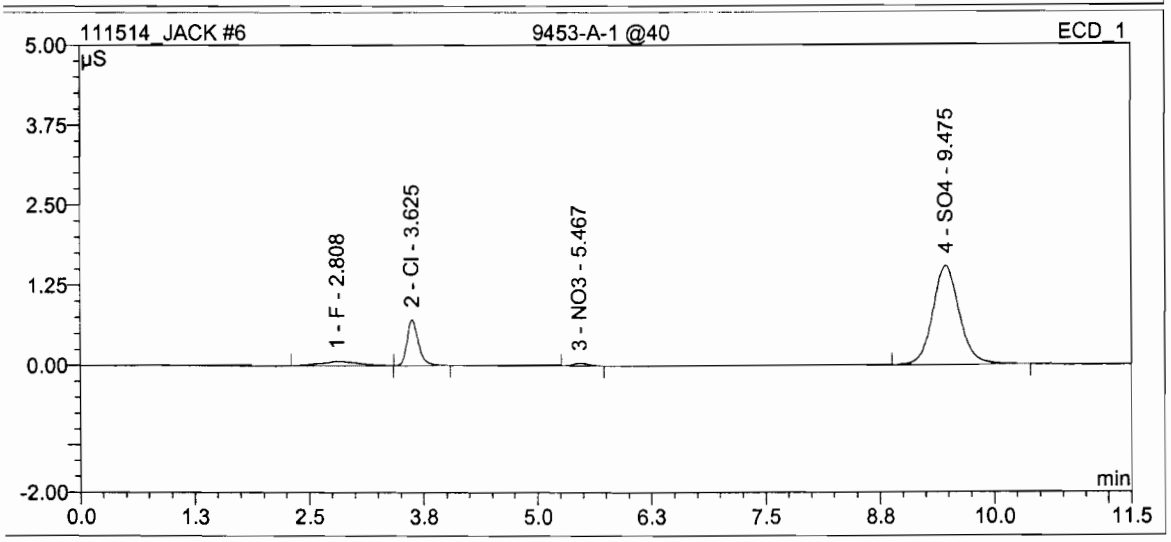


Integration Report - ECD_1

Sample Name:	**9453-A-1 @40**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 13:52**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.81	F	BMB	0.034	0.072	81.2051
2	3.63	Cl	BMB	0.104	0.714	323.6318
3	5.47	NO3	BMB	0.008	0.042	11.2641
4	9.48	SO4	BMB	0.525	1.539	2245.4987
		TOTAL:		0.67	2.37	2661.60

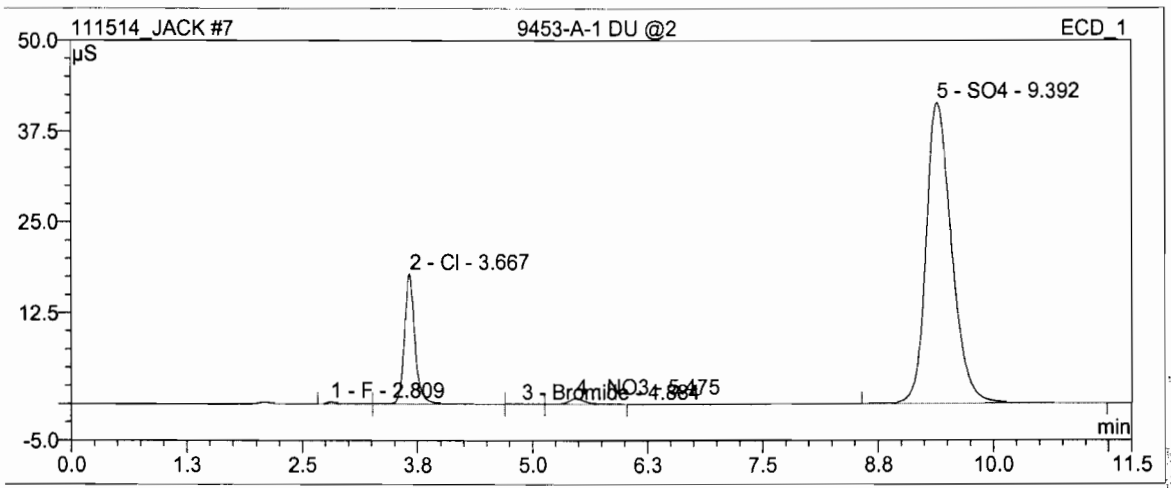


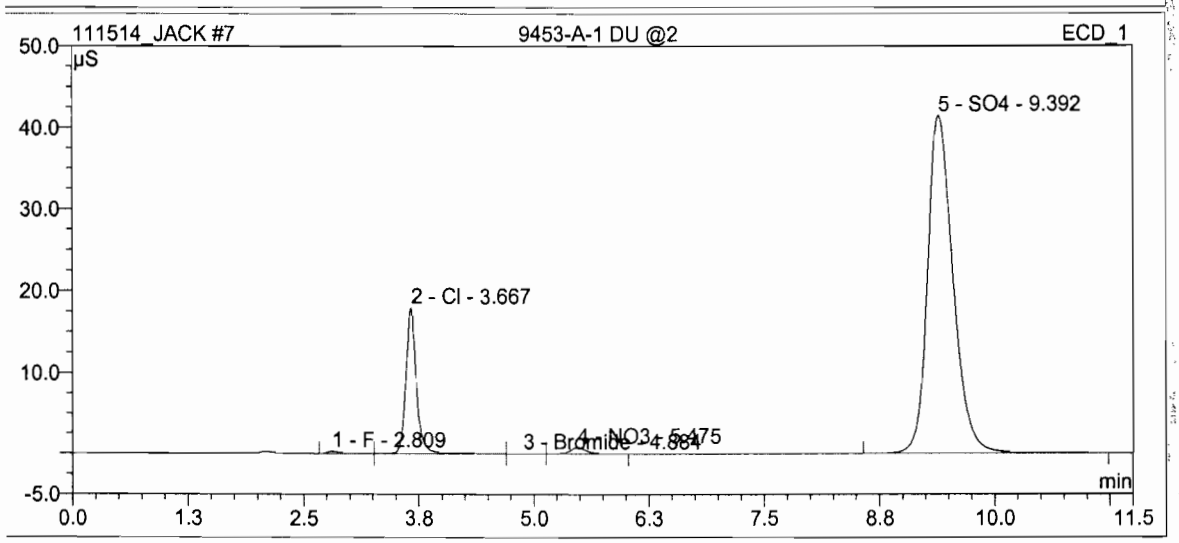


Integration Report - ECD_1

Sample Name:	**9453-A-1 DU @2**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 14:05**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.81	F	BM	0.062	0.289	150.4199
2	3.67	Cl	M	2.405	17.970	7516.5057
3	4.88	Bromide	M	0.015	0.060	119.6712
4	5.48	NO3	MB	0.160	0.783	224.6376
5	9.39	SO4	BMB	13.380	41.446	57230.3326
		TOTAL:		16.02	60.55	65241.57





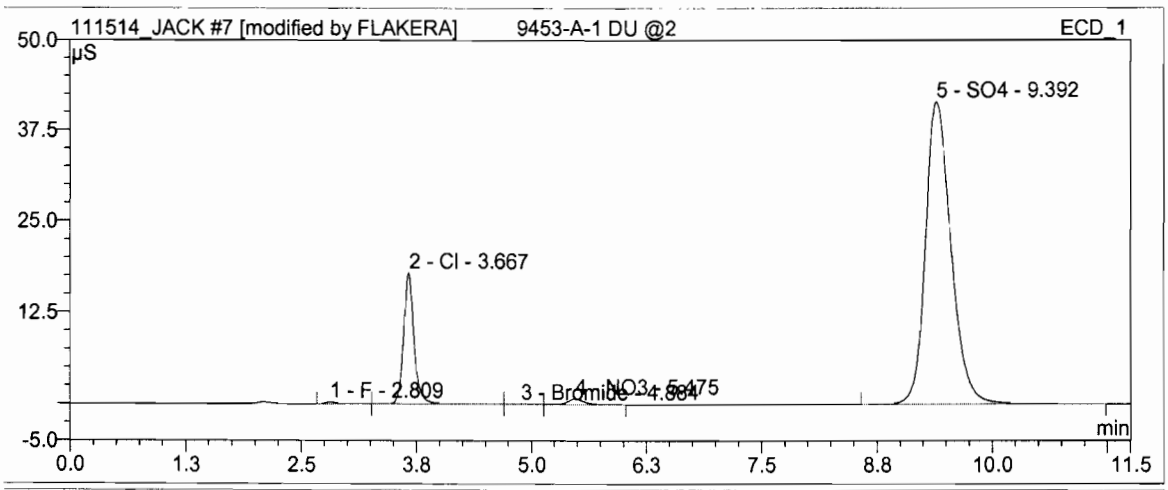
MI AF 11-2414

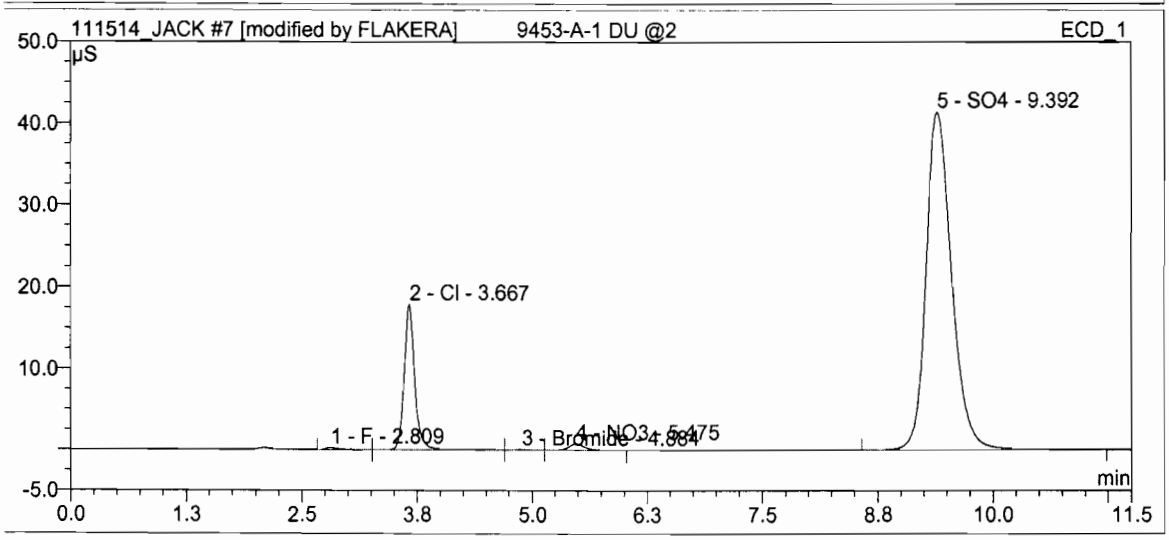
F, Cl, Br, NO3

Integration Report - ECD_1

Sample Name:	**9453-A-1 DU @2**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 14:05**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.81	F	BMb*	0.052	0.281	125.2253
2	3.67	Cl	bM *	2.368	17.940	7400.8473
3	4.88	Bromide	M *	0.009	0.045	72.2700
4	5.48	NO3	MB*	0.155	0.777	217.5751
5	9.39	SO4	BMB	13.380	41.446	57230.3326
		TOTAL:		15.96	60.49	65046.25

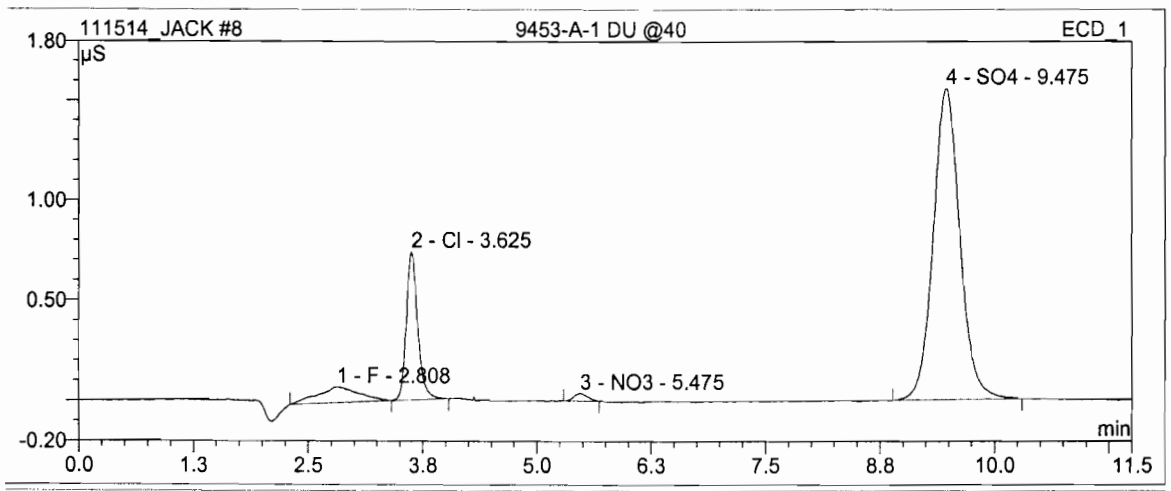


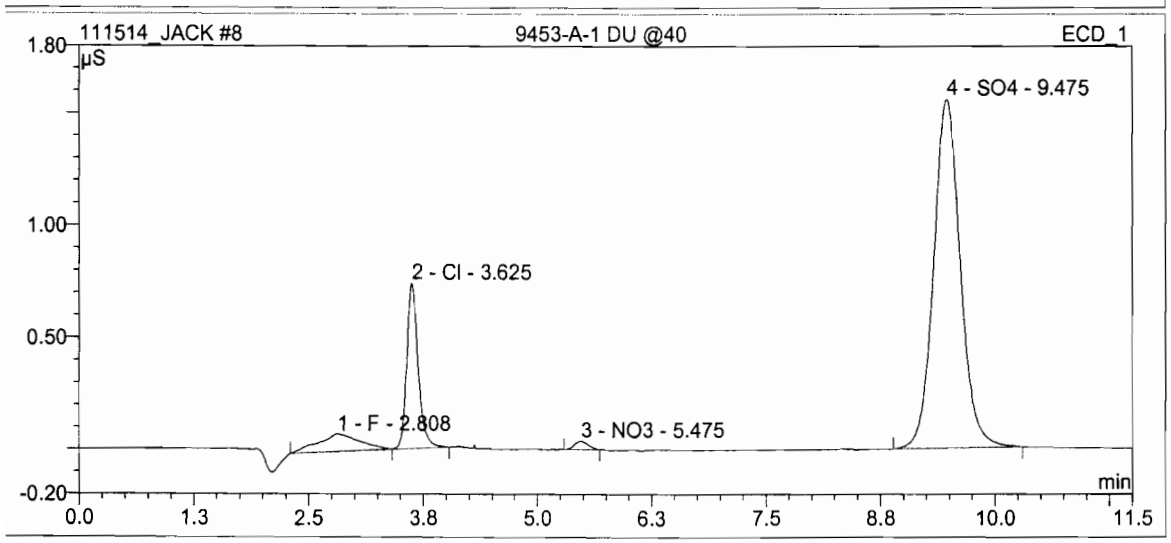


Integration Report - ECD_1

Sample Name:	**9453-A-1 DU @40**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 14:19**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.81	F	Ru	0.040	0.078	96.6177
2	3.63	Cl	BMB	0.109	0.739	340.9632
3	5.48	NO3	BMB	0.007	0.038	9.2841
4	9.48	SO4	BMB	0.528	1.556	2259.4737
		TOTAL:		0.68	2.41	2706.34





MI AF 12-1-14

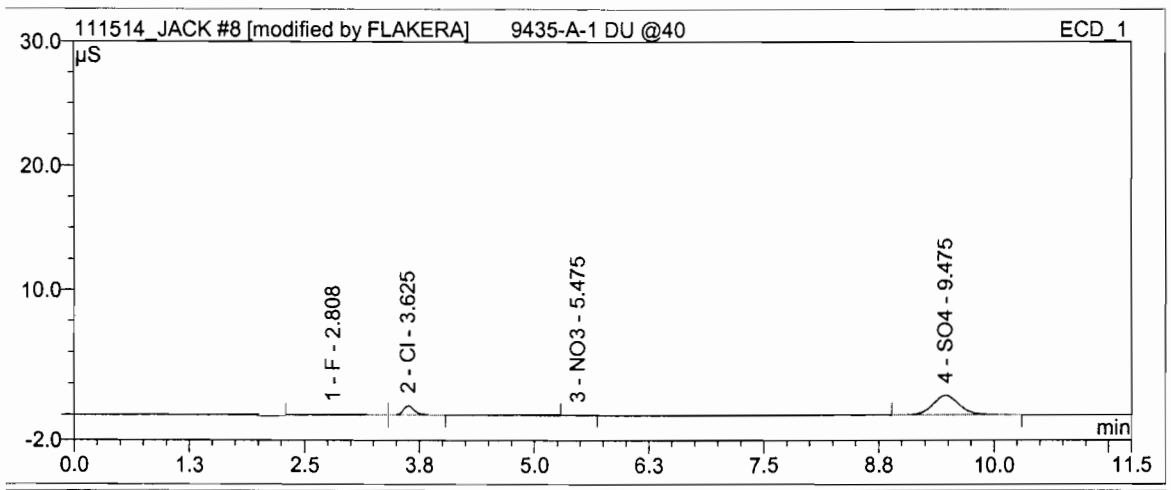
F,Cl

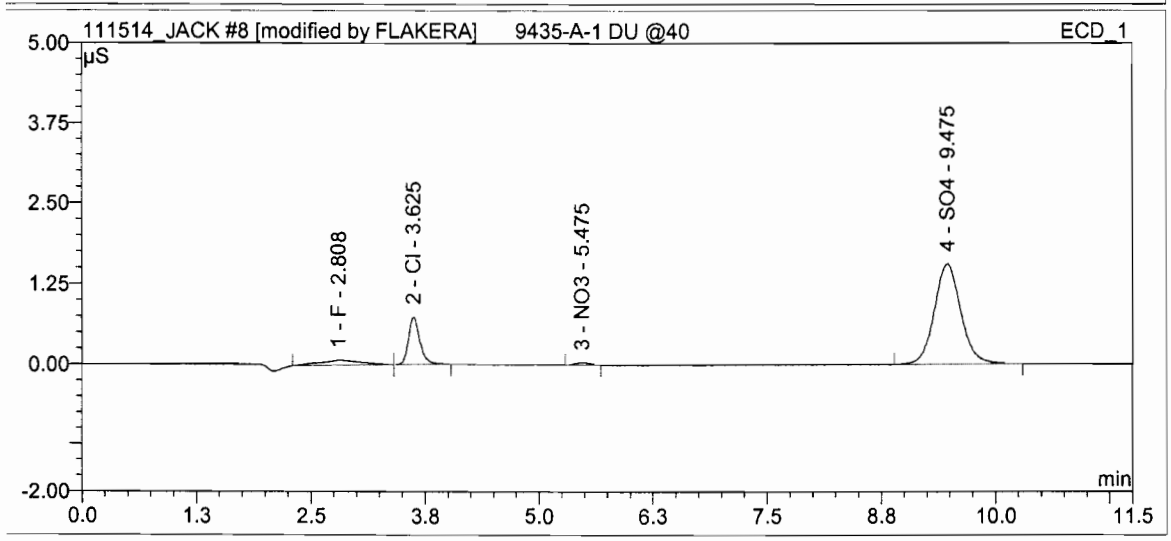
SBAF 11-21-14

Integration Report - ECD_1

Sample Name:	**9435-A-1 DU @40**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 14:19**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.81	F	BM *	0.042	0.079	100.6708
2	3.63	Cl	MB*	0.107	0.739	335.7054
3	5.48	NO3	BMB	0.007	0.038	9.2841
4	9.48	SO4	BMB	0.528	1.556	2259.4737
		TOTAL:		0.68	2.41	2705.13

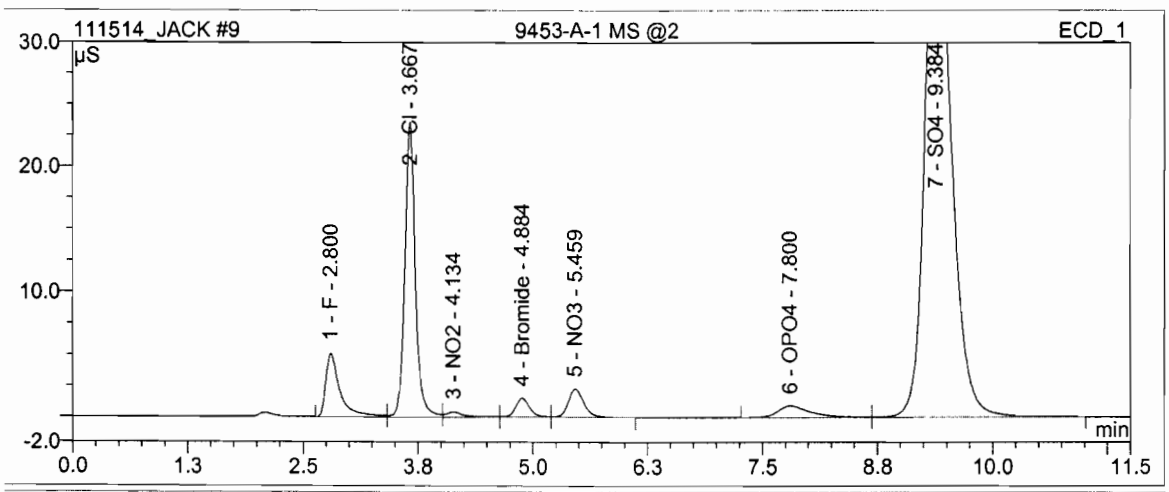


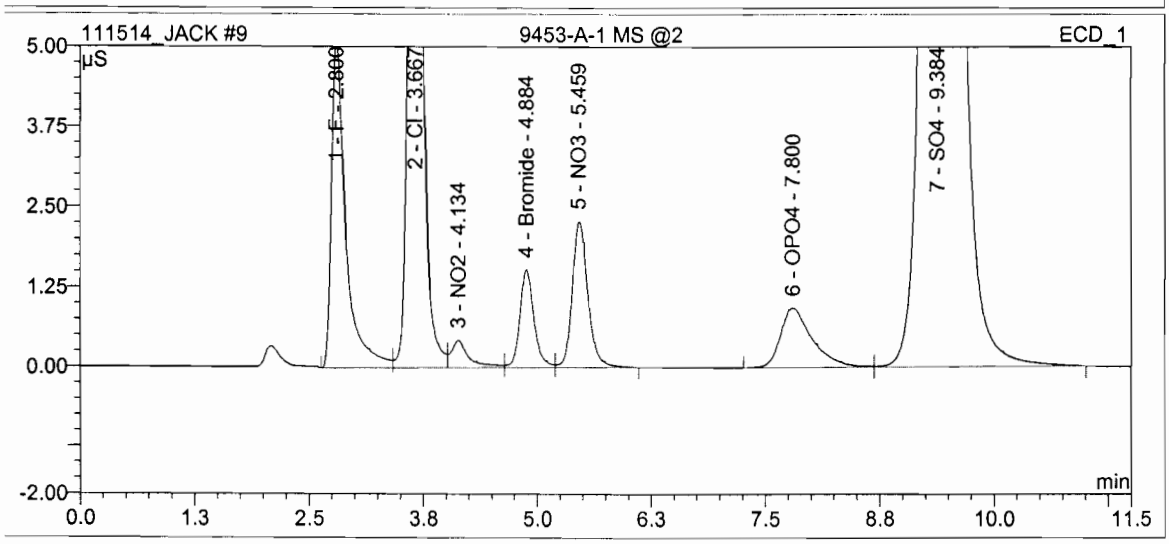


Integration Report - ECD_1

Sample Name:	**9453-A-1 MS @2**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 14:33**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BM	0.923	5.142	2222.3193
2	3.67	Cl	M	3.112	23.603	9724.4312
3	4.13	NO2	M	0.096	0.426	153.4539
4	4.88	Bromide	M	0.275	1.533	2148.4873
5	5.46	NO3	MB	0.455	2.277	639.1975
6	7.80	OPO4	BM	0.378	0.936	4384.6954
7	9.38	SO4	MB	14.392	44.646	61558.2771
		TOTAL:		19.63	78.56	80830.86

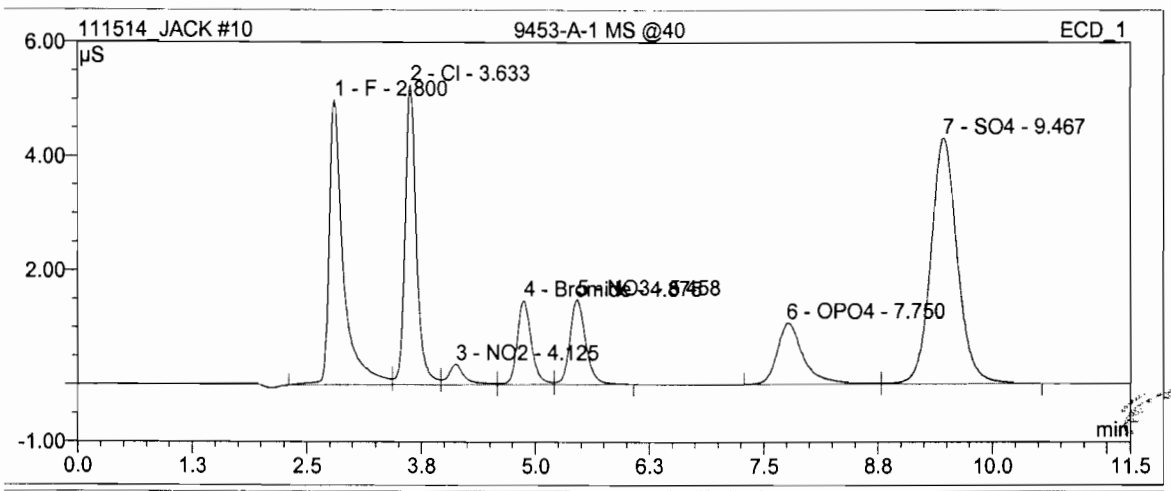


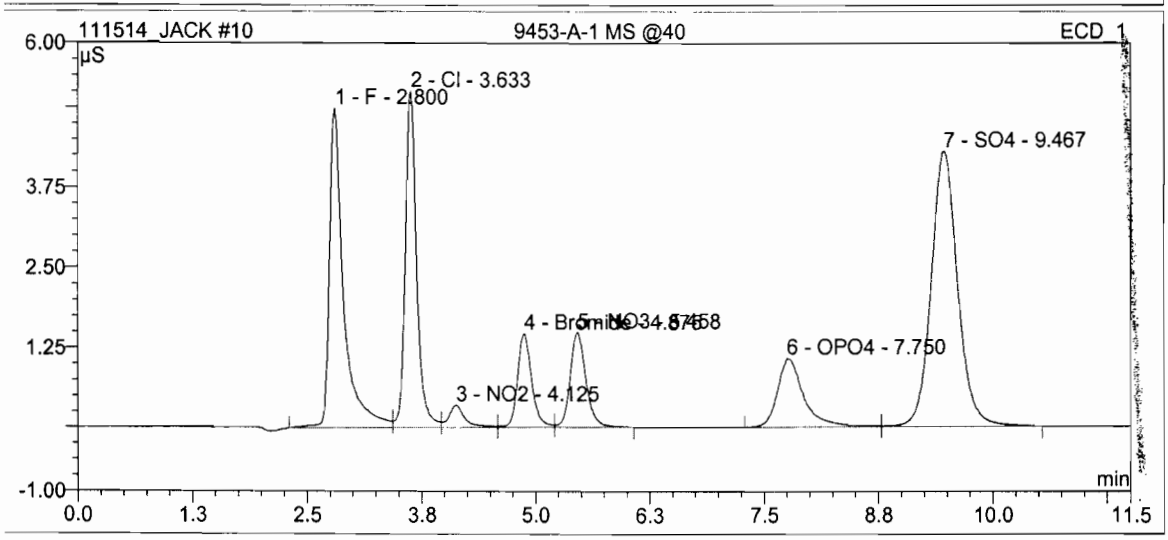


Integration Report - ECD_1

Sample Name:	**9453-A-1 MS @40**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 14:47**	*Run Time:*	**11.51**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BM	0.908	4.995	2185.3033
2	3.63	Cl	M	0.757	5.260	2366.0063
3	4.13	NO2	M	0.073	0.359	117.2410
4	4.88	Bromide	M	0.265	1.474	2071.4126
5	5.46	NO3	MB	0.300	1.493	421.6875
6	7.75	OPO4	BM	0.362	1.079	4201.6476
7	9.47	SO4	MB	1.456	4.302	6226.7197
		TOTAL:		4.12	18.96	17590.02





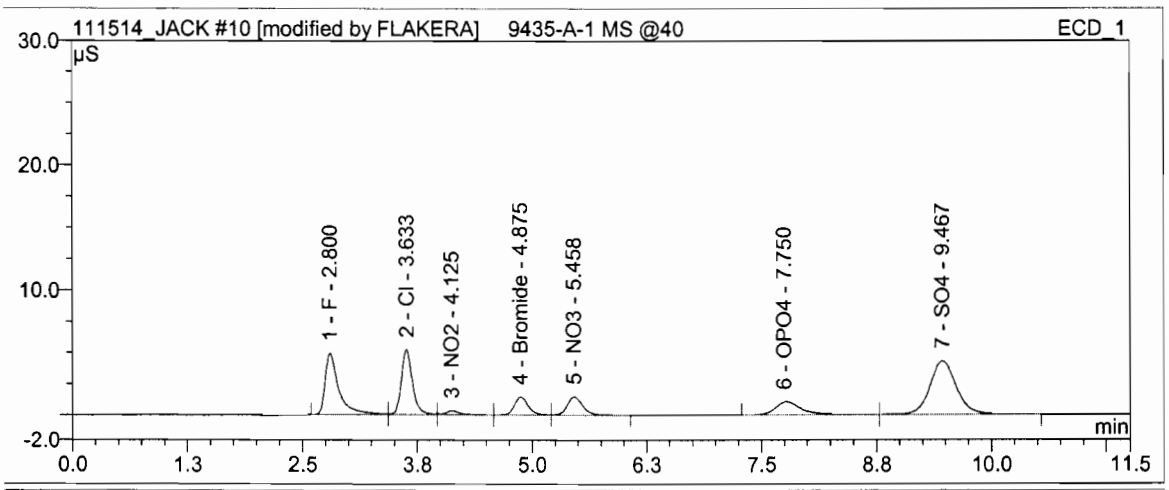
all but OPO4, SO4

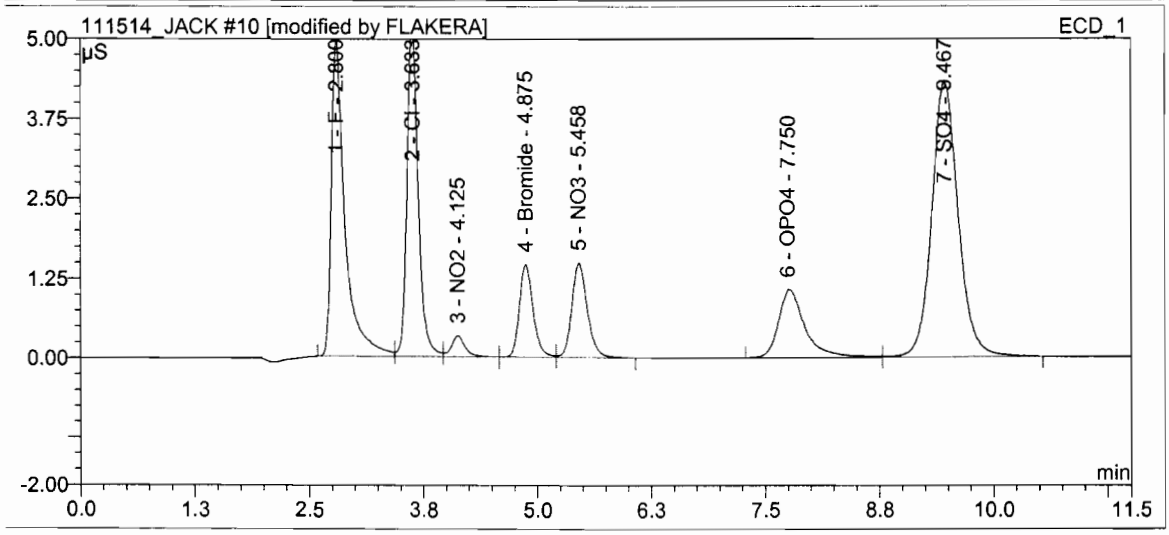
53 µF 11-21-14

Integration Report - ECD_1

Sample Name:	**9435-A-1 MS @40**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 14:47**	*Run Time:*	**11.51**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BM *	0.868	4.953	2088.9544
2	3.63	Cl	M *	0.741	5.228	2315.1938
3	4.13	NO2	M *	0.059	0.333	94.4755
4	4.88	Bromide	M *	0.256	1.459	1997.5879
5	5.46	NO3	MB*	0.295	1.485	414.9143
6	7.75	OPO4	BM	0.362	1.079	4201.6476
7	9.47	SO4	MB	1.456	4.302	6226.7197
		TOTAL:		4.04	18.84	17339.49

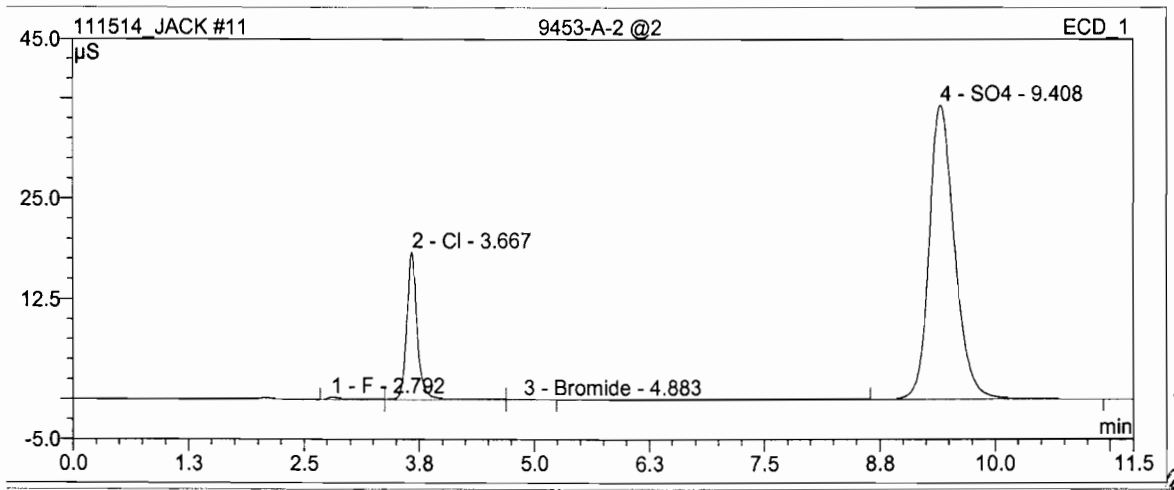


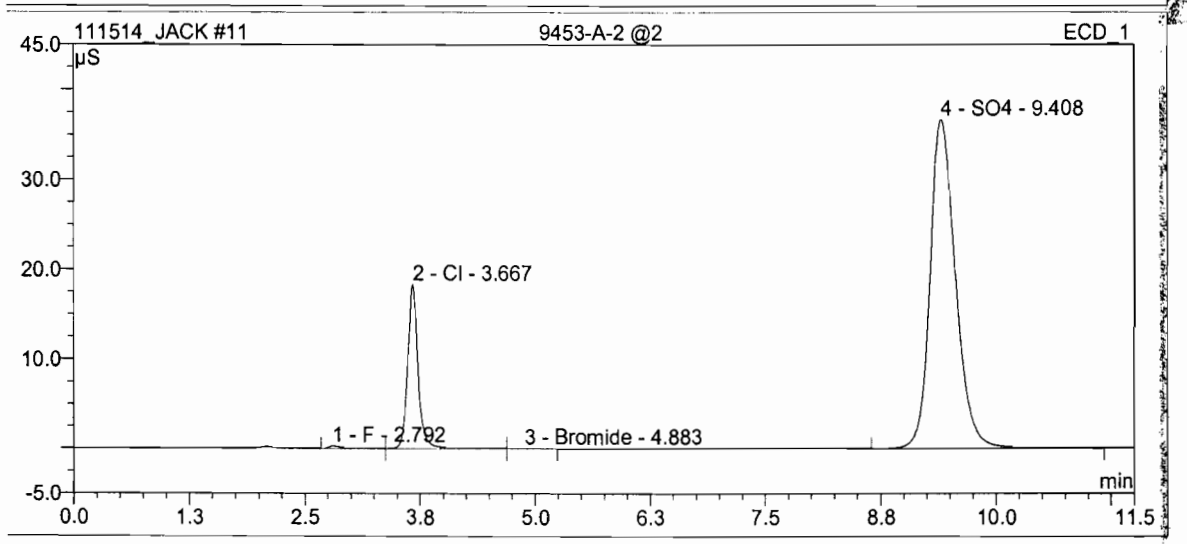


Integration Report - ECD_1

Sample Name:	**9453-A-2 @2**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 15:01**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.79	F	BM	0.073	0.319	175.1006
2	3.67	Cl	M	2.438	18.365	7620.3531
3	4.88	Bromide	MB	0.013	0.054	102.6469
4	9.41	SO4	BMB	11.812	36.692	50520.0739
TOTAL:				14.34	55.43	58418.17





MI AF 11-21-14

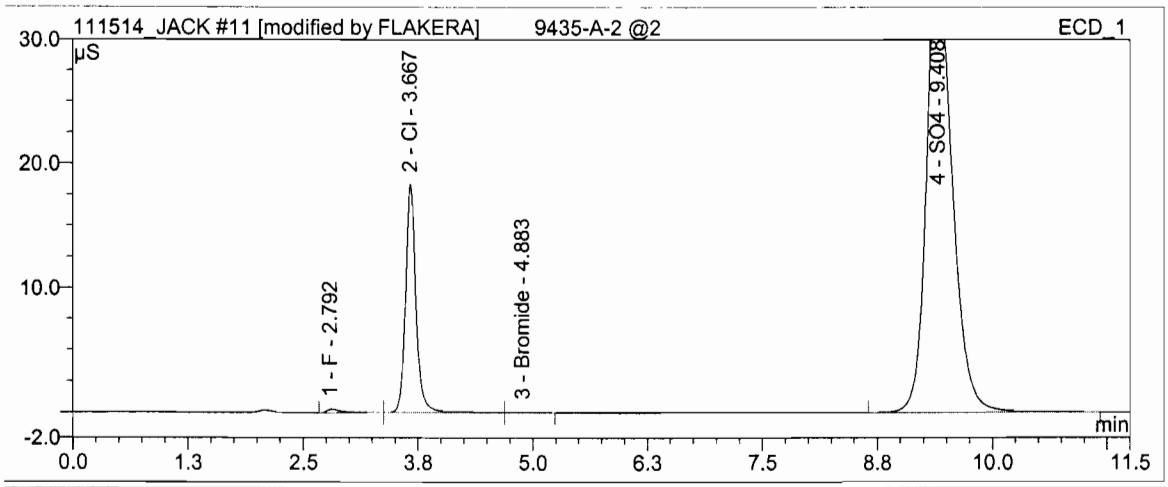
F, Cl, Br

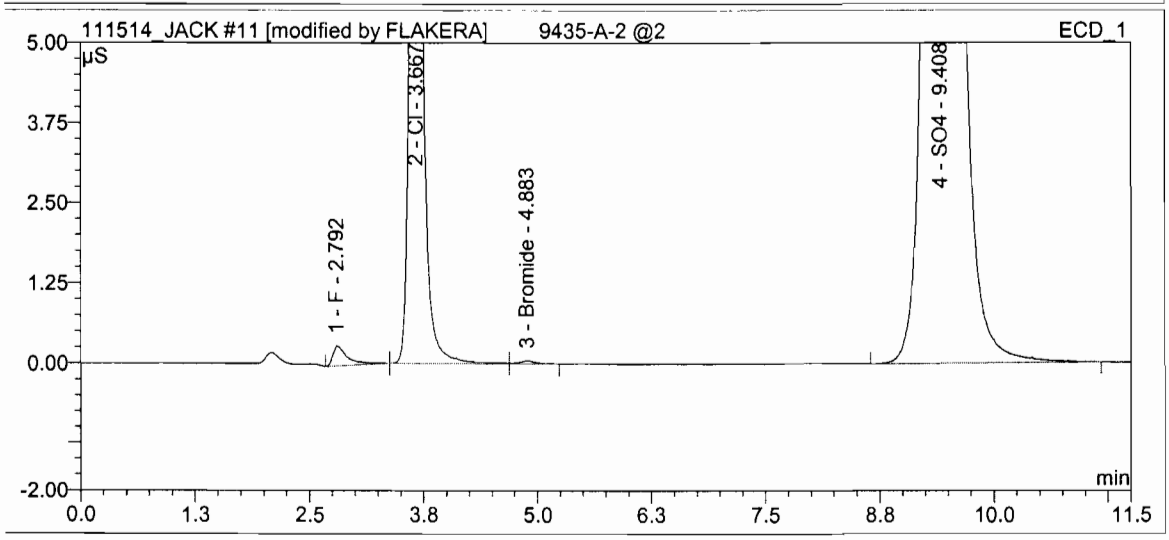
CMF 11-21-14

Integration Report - ECD_1

Sample Name:	**9435-A-2 @2**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 15:01**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.79	F	BMb*	0.058	0.313	140.5720
2	3.67	Cl	bM *	2.404	18.331	7511.2037
3	4.88	Bromide	MB*	0.010	0.046	76.7284
4	9.41	SO4	BMB	11.812	36.692	50520.0739
TOTAL:				14.28	55.38	58248.58

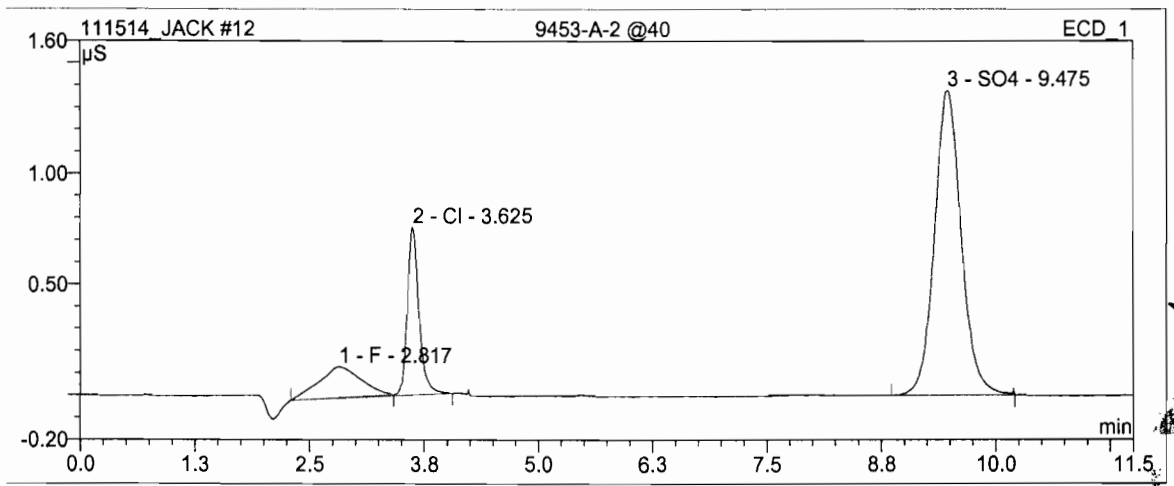


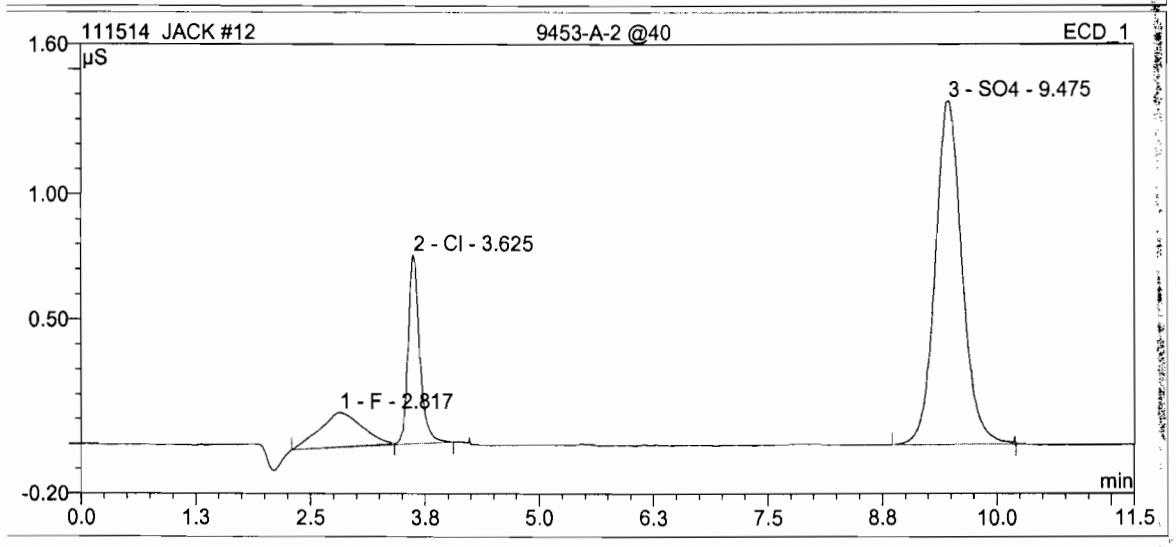


Integration Report - ECD_1

Sample Name:	**9453-A-2 @40**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 15:15**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.82	F	Ru	0.074	0.139	178.1171
2	3.63	Cl	BMB	0.115	0.757	359.6400
3	9.48	SO4	BMB	0.470	1.377	2010.5799
		TOTAL:		0.66	2.27	2548.34





MI AF 11-21-14

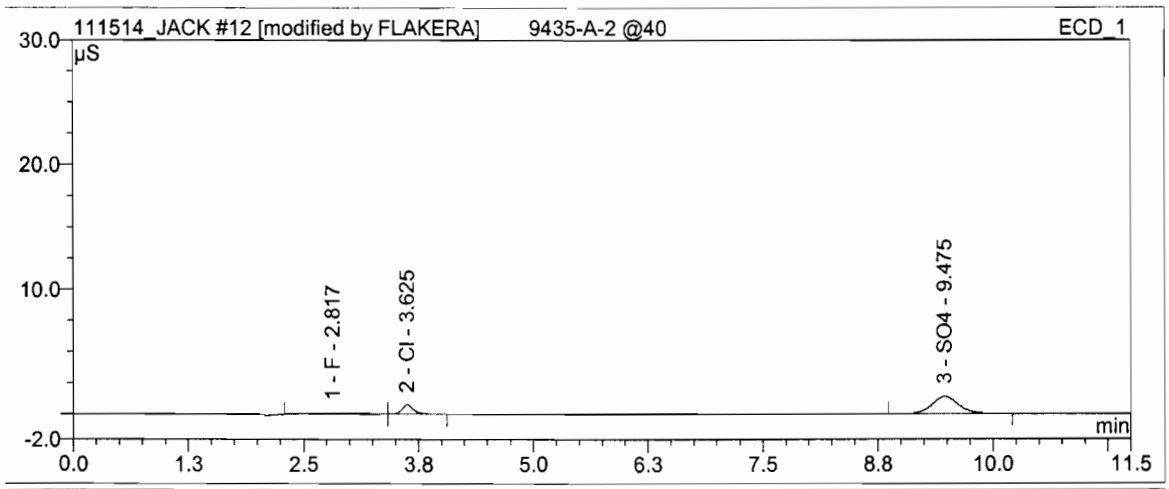
F.Cl

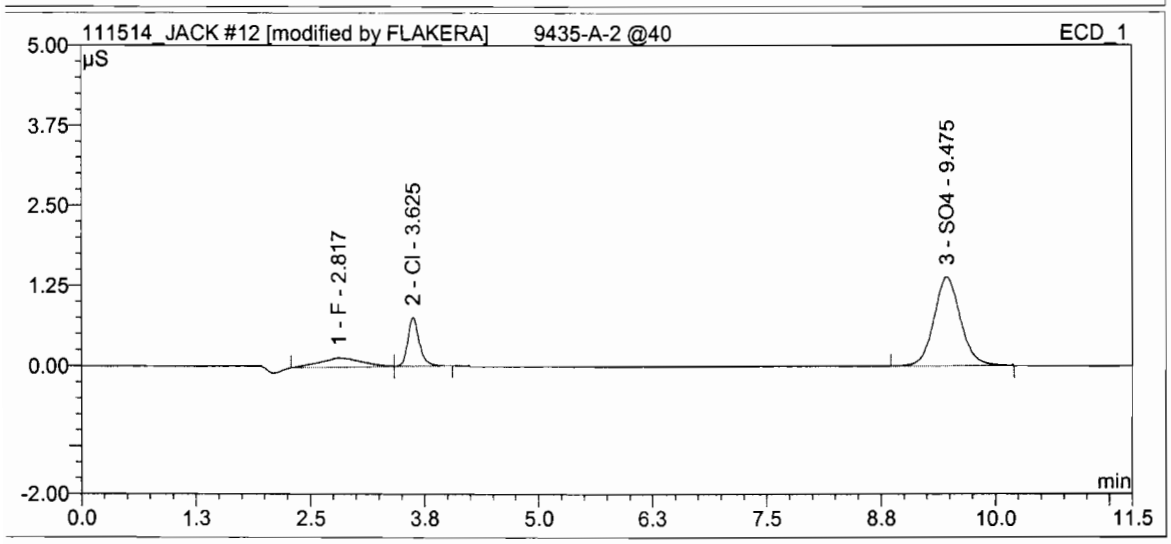
AF 11-21-14

Integration Report - ECD_1

Sample Name:	**9435-A-2 @40**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 15:15**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.82	F	BM *	0.077	0.141	185.6221
2	3.63	Cl	MB*	0.112	0.757	349.8990
3	9.48	SO4	BMB	0.470	1.377	2010.5799
		TOTAL:		0.66	2.27	2546.10

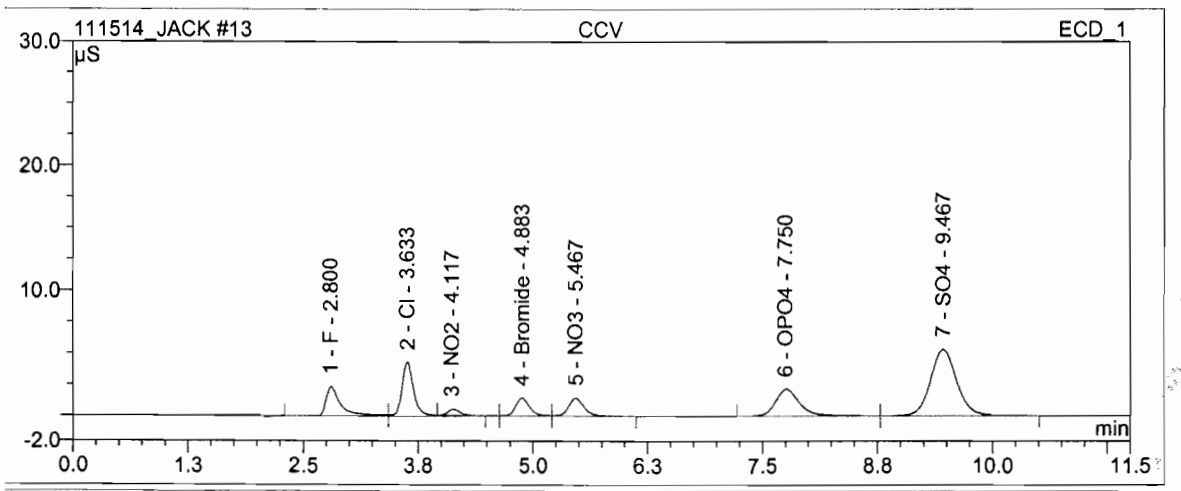


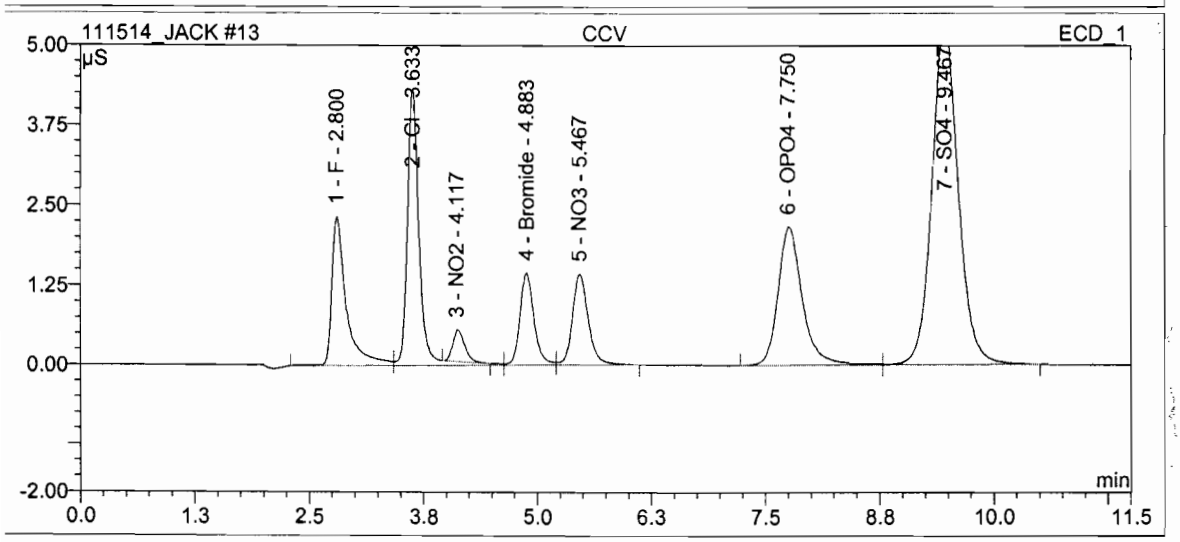


Integration Report - ECD_1

Sample Name:	**CCV**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 15:29**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BM	0.433	2.331	1042.4566
2	3.63	Cl	M	0.655	4.325	2047.6780
3	4.12	NO2	Rd	0.076	0.503	120.7446
4	4.88	Bromide	M	0.260	1.444	2029.2143
5	5.47	NO3	MB	0.290	1.426	407.6020
6	7.75	OPO4	BM	0.675	2.169	7825.0288
7	9.47	SO4	MB	1.791	5.338	7658.7442
		TOTAL:		4.18	17.54	21131.47





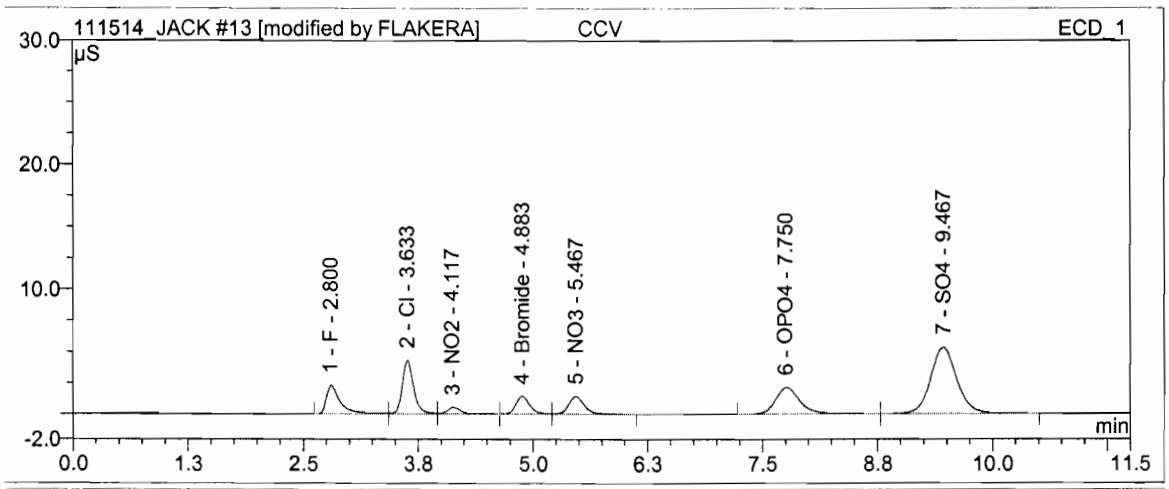
MI AF 11-21-14

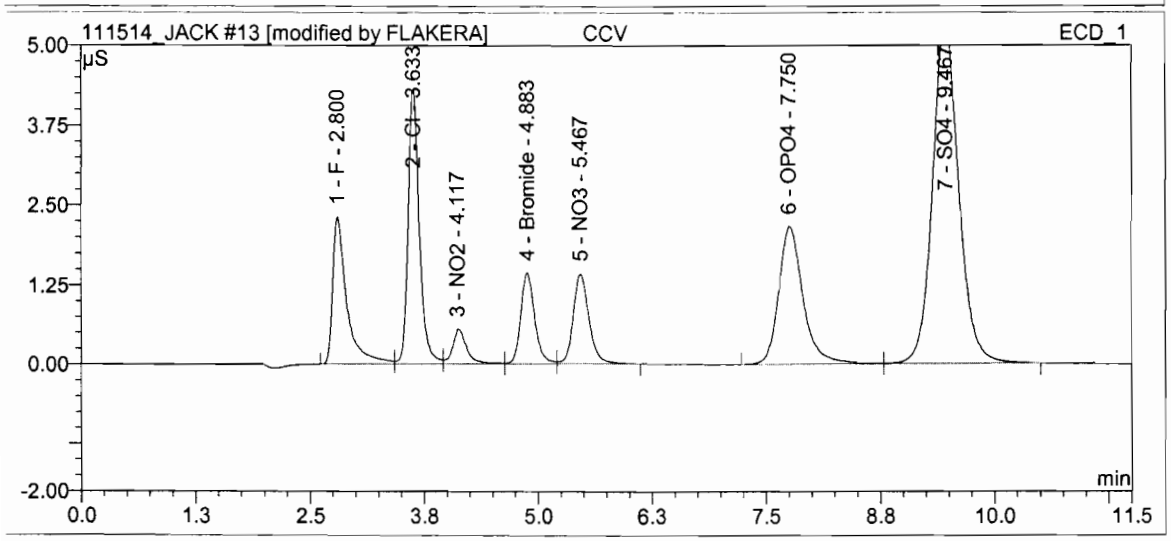
all but OPO4, SO4

Integration Report - ECD_1

Sample Name:	**CCV**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 15:29**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BM *	0.416	2.313	1000.6312
2	3.63	Cl	M *	0.618	4.312	1931.5903
3	4.12	NO2	M *	0.099	0.553	158.2999
4	4.88	Bromide	M *	0.256	1.437	2000.1076
5	5.47	NO3	MB*	0.288	1.423	404.4230
6	7.75	OPO4	BM	0.675	2.169	7825.0288
7	9.47	SO4	MB	1.791	5.338	7658.7442
		TOTAL:		4.14	17.54	20978.83

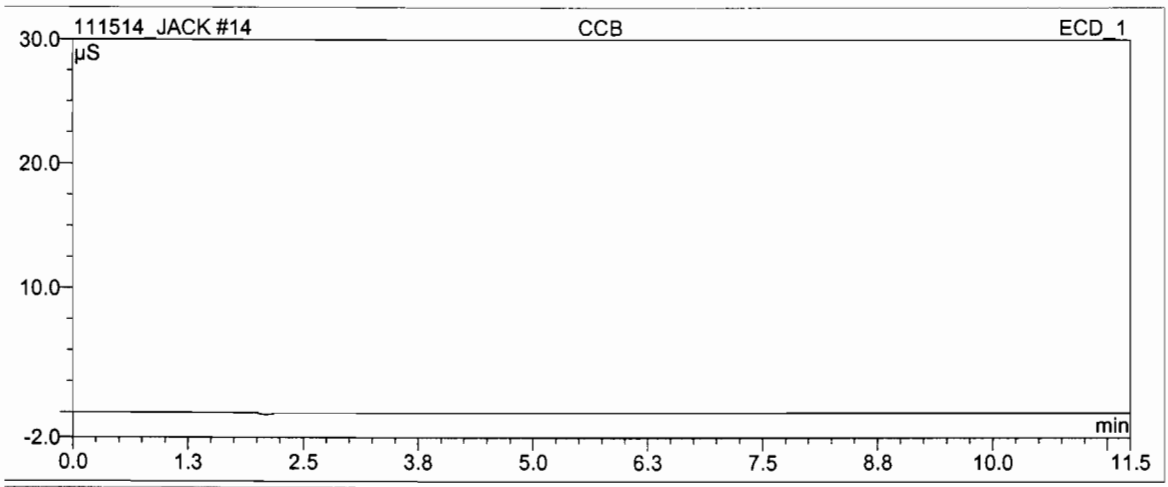


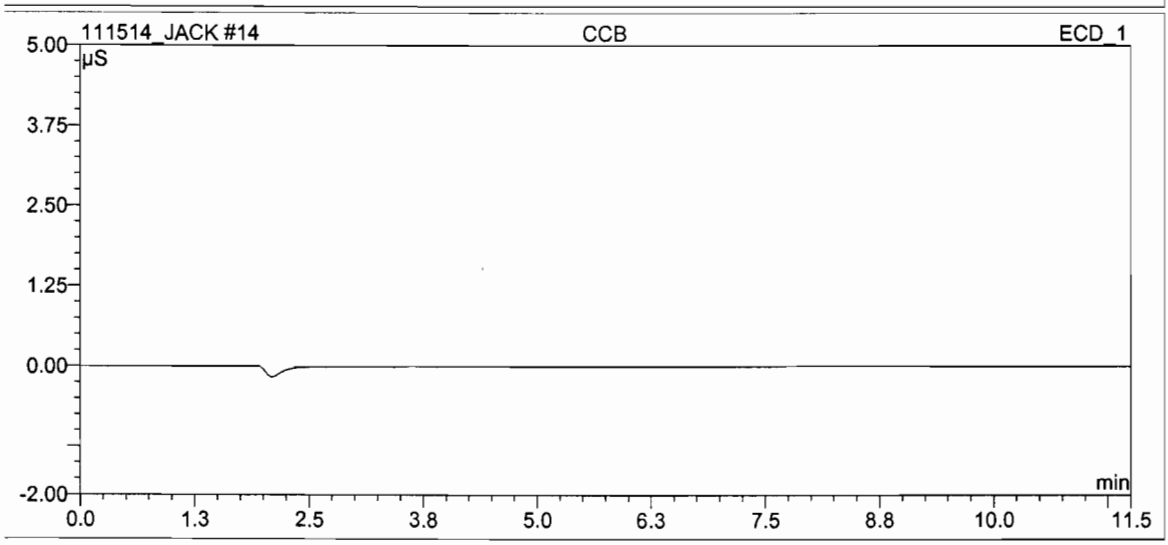


Integration Report - ECD_1

Sample Name:	**CCB**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 15:43**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
		TOTAL:		0.00	0.00	0.00

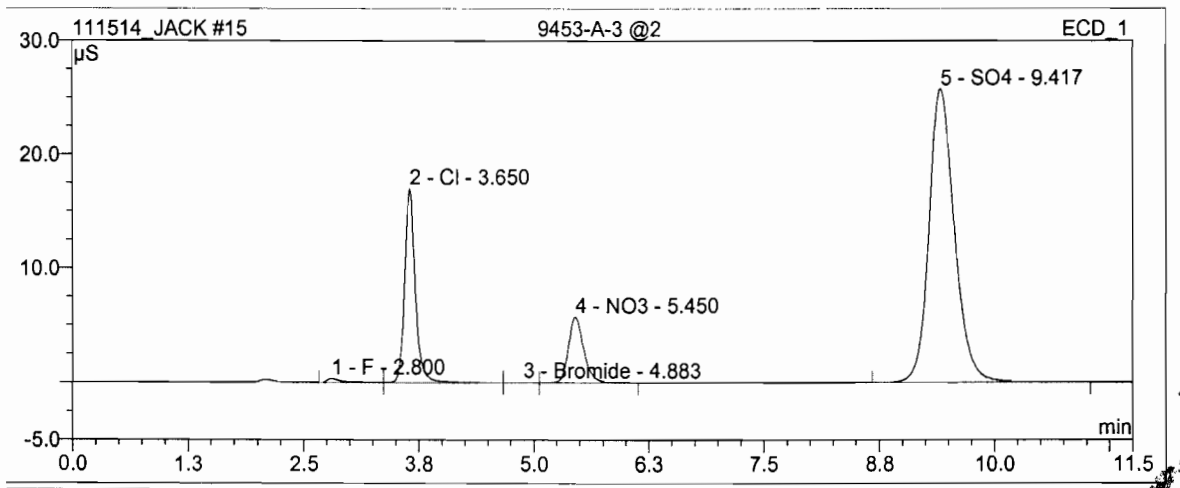


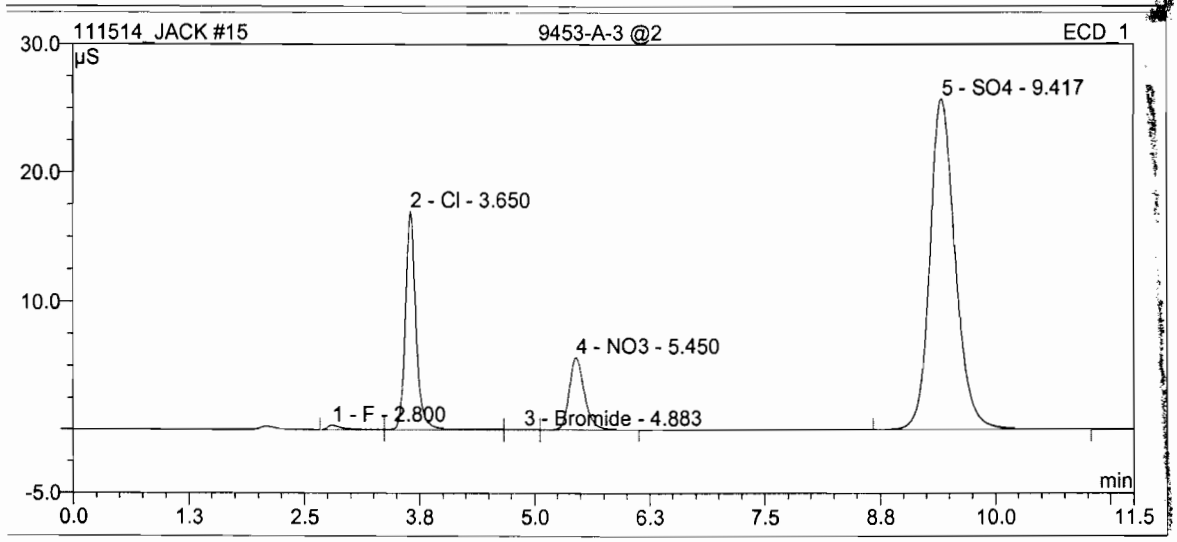


Integration Report - ECD_1

Sample Name:	**9453-A-3 @2**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 15:57**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BM	0.080	0.367	191.9637
2	3.65	Cl	M	2.294	16.991	7168.9396
3	4.88	Bromide	M	0.011	0.048	87.5475
4	5.45	NO3	MB	1.109	5.704	1558.3741
5	9.42	SO4	BMB	8.305	25.726	35520.0264
		TOTAL:		11.80	48.84	44526.85





MI AF 11-21-14

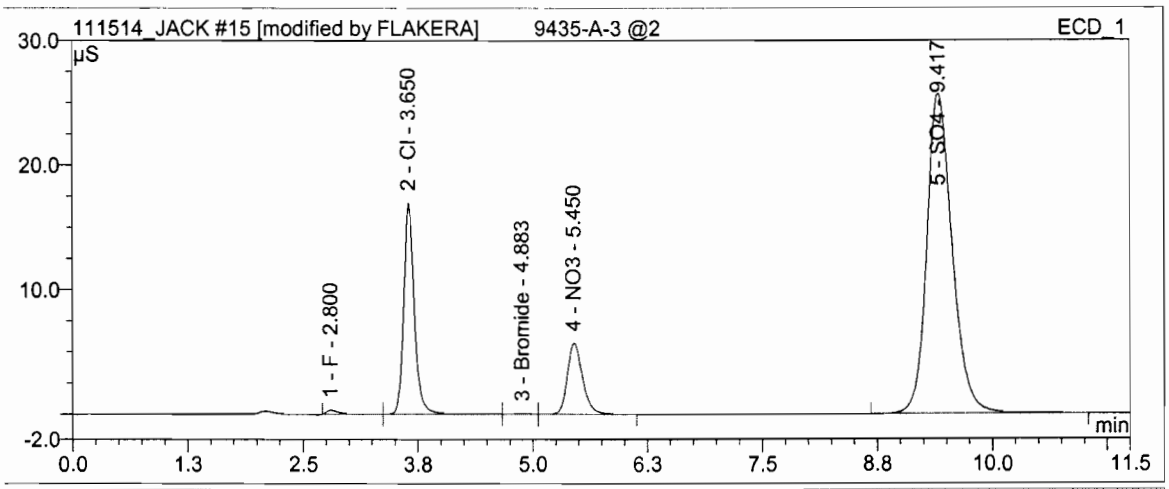
F, Cl, Br, NO3

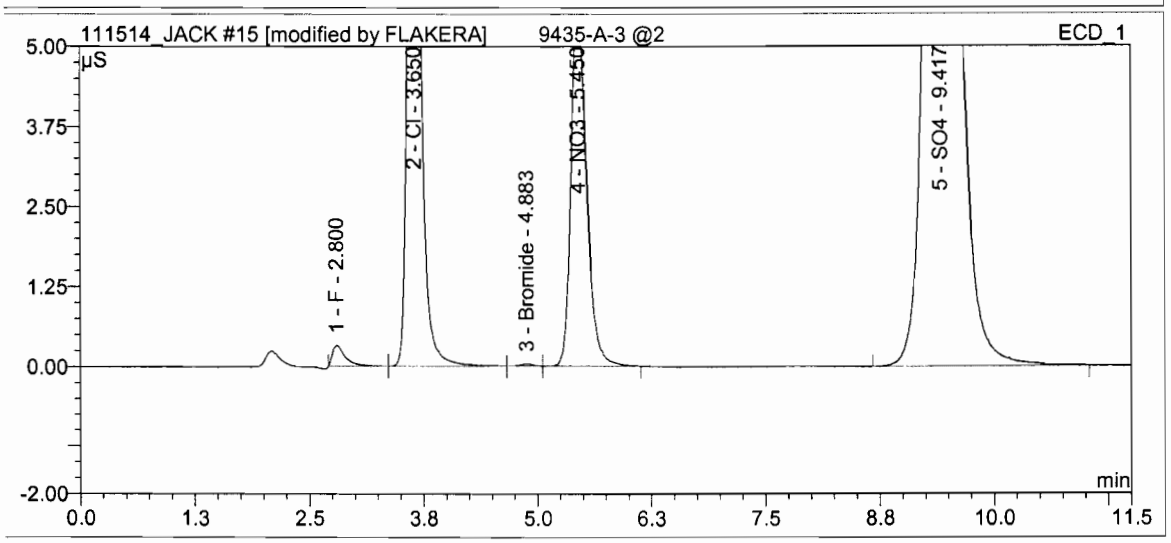
53 AF 11-21-14

Integration Report - ECD_1

Sample Name:	**9435-A-3 @2**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 15:57**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BM *	0.053	0.324	127.1653
2	3.65	Cl	M *	2.258	16.959	7057.8406
3	4.88	Bromide	M *	0.005	0.032	37.3659
4	5.45	NO3	MB*	1.102	5.696	1547.8890
5	9.42	SO4	BMB	8.305	25.726	35520.0264
		TOTAL:		11.72	48.74	44290.29

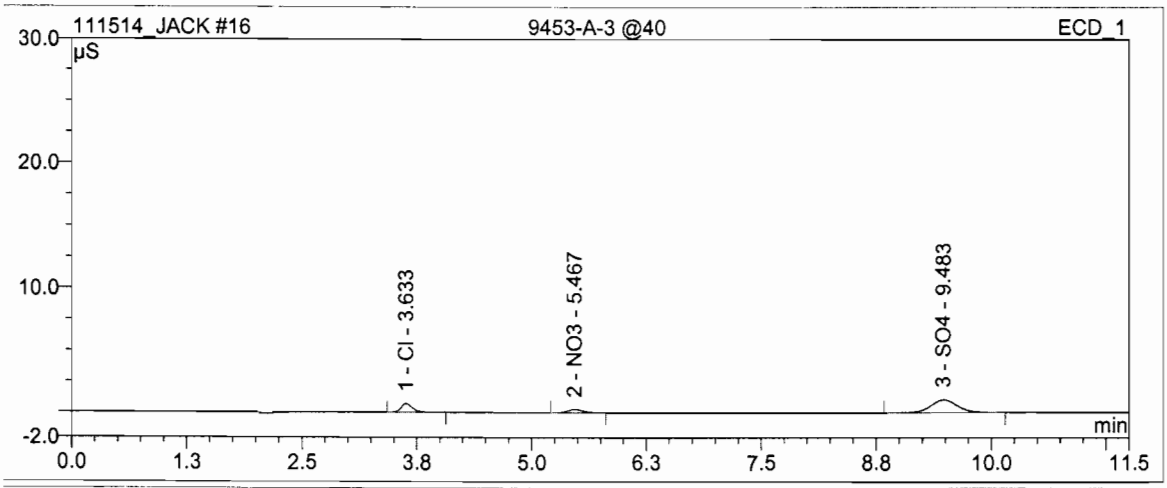


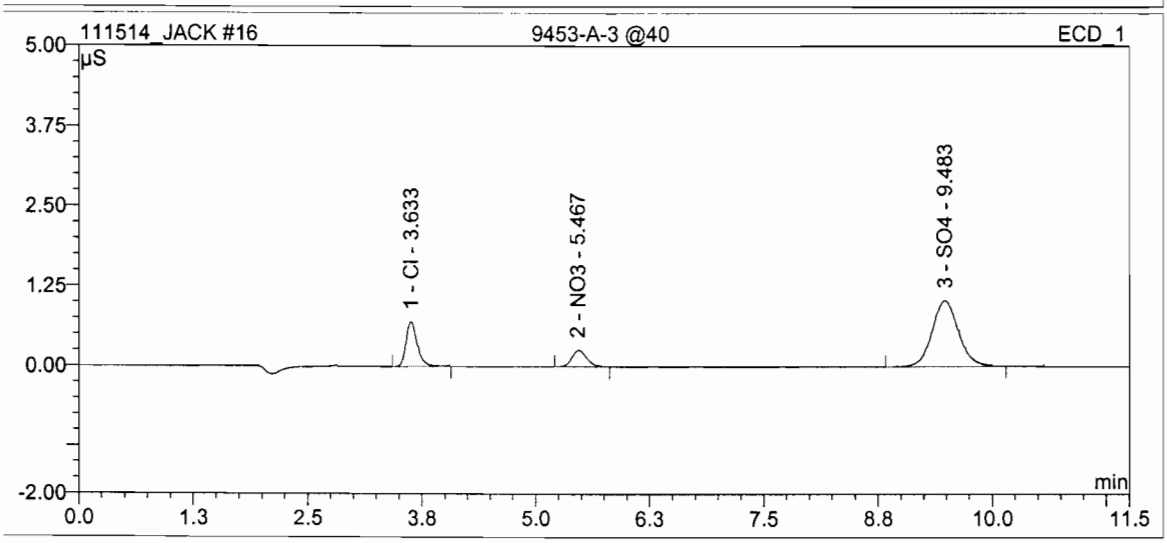


Integration Report - ECD_1

Sample Name:	**9453-A-3 @40**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 16:11**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	3.63	Cl	BMB	0.102	0.700	319.7281
2	5.47	NO3	BMB	0.051	0.259	70.9486
3	9.48	SO4	BMB	0.348	1.029	1487.9349
		TOTAL:		0.50	1.99	1878.61

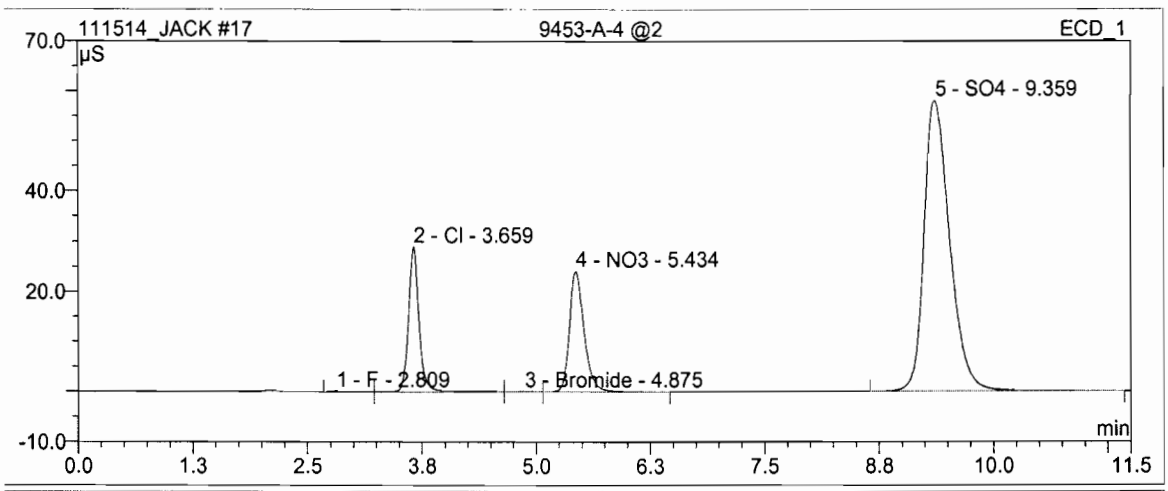


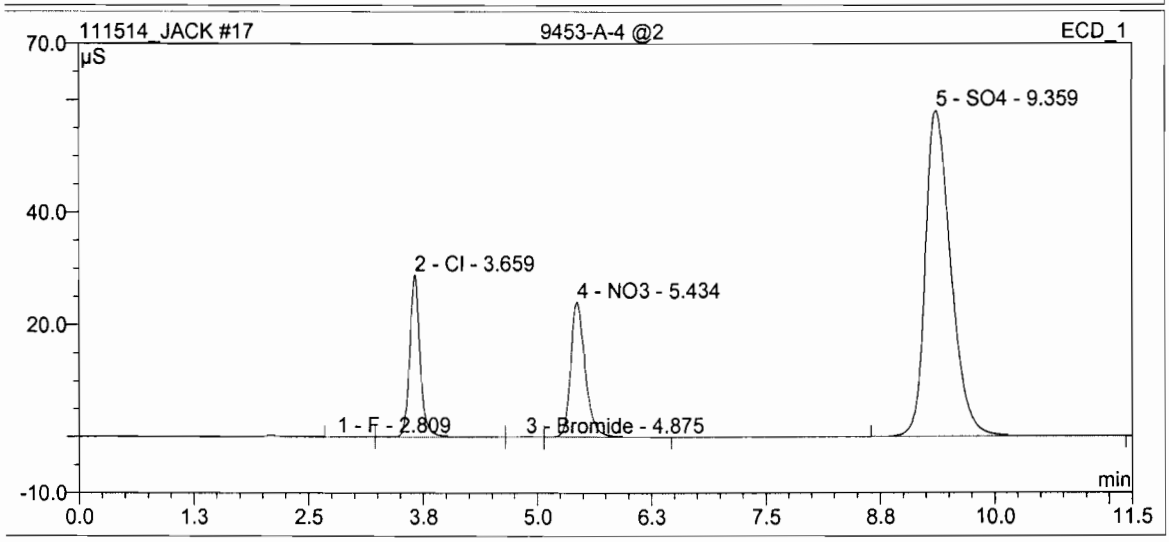


Integration Report - ECD_1

Sample Name:	**9453-A-4 @2**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 16:25**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.81	F	BM	0.038	0.160	92.2268
2	3.66	Cl	M	3.886	28.925	12142.4628
3	4.88	Bromide	M	0.020	0.086	153.3974
4	5.43	NO3	MB	4.504	24.122	6326.1665
5	9.36	SO4	BMB	18.977	58.100	81169.3448
		TOTAL:		27.42	111.39	99883.60





MT AF 11-21-14

F, Cl, Br, NO3, SO4

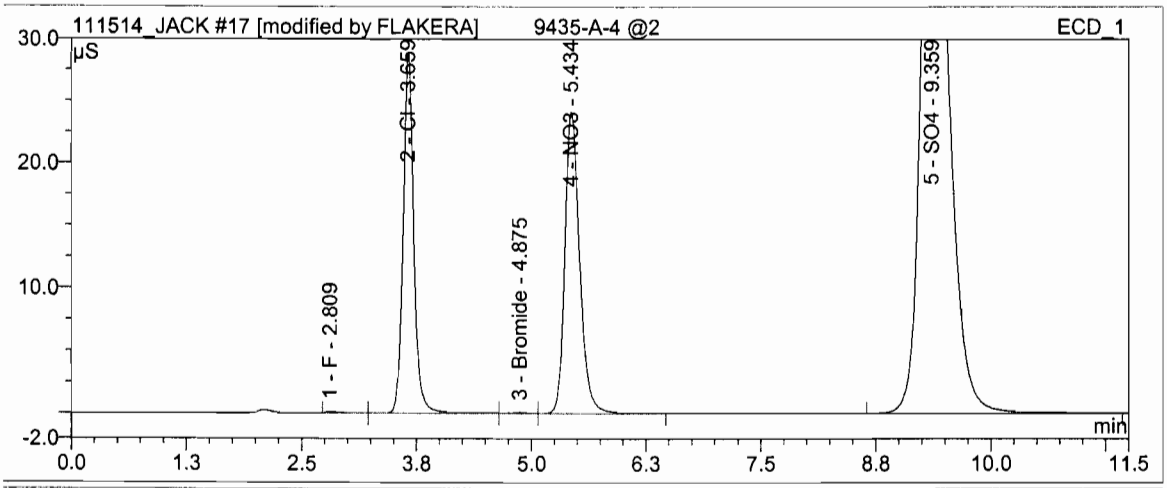
0

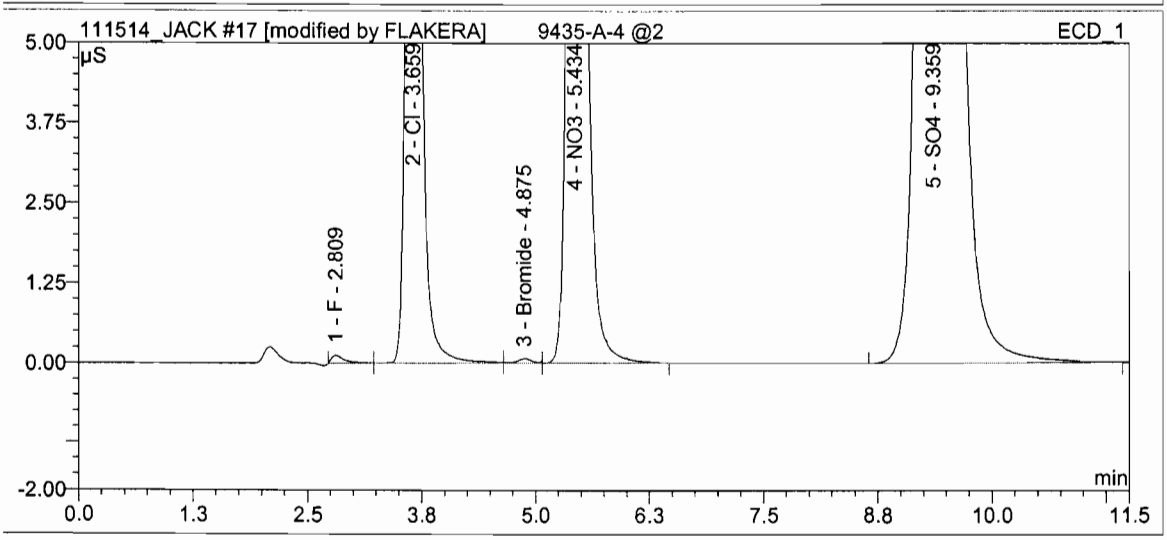
53 AF 11-21-14

Integration Report - ECD_1

Sample Name:	**9435-A-4 @2**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 16:25**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.81	F	BM *	0.019	0.122	46.8346
2	3.66	Cl	M *	3.848	28.896	12024.8316
3	4.88	Bromide	M *	0.013	0.069	97.8339
4	5.43	NO3	MB*	4.494	24.111	6311.9613
5	9.36	SO4	BMB	18.977	58.100	81169.3448
		TOTAL:		27.35	111.30	99650.81

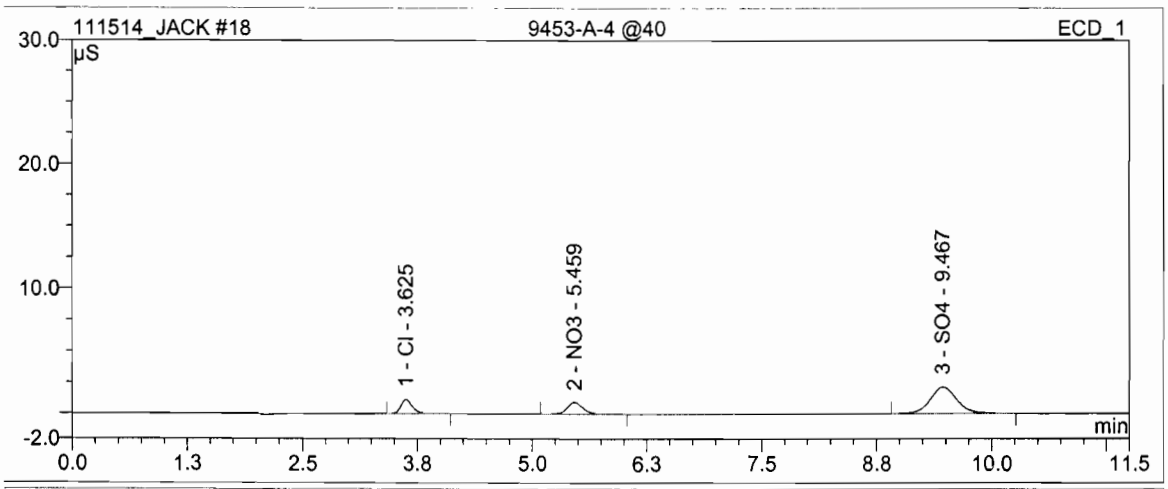


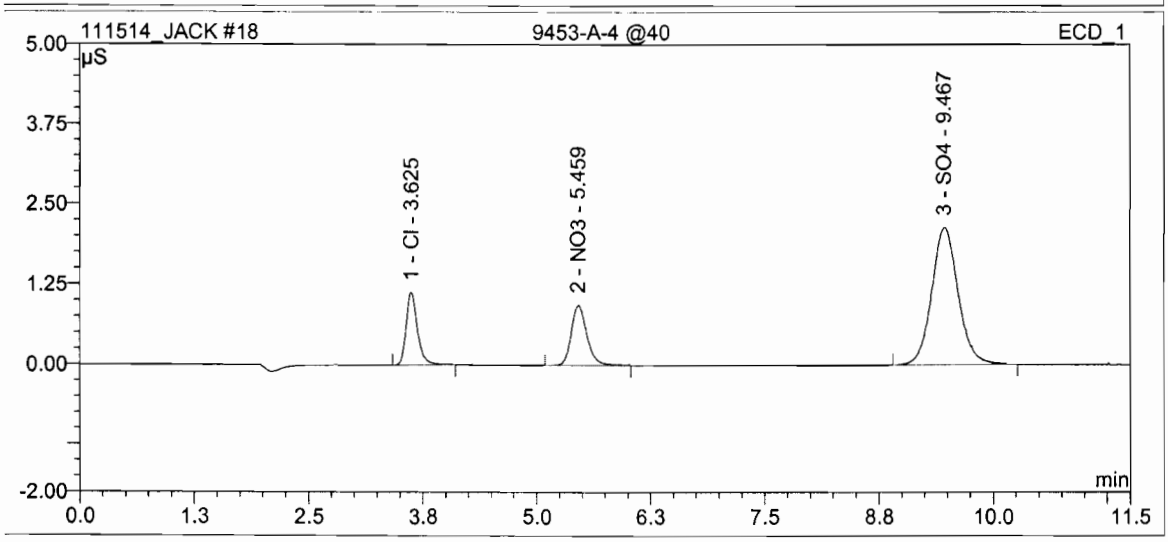


Integration Report - ECD_1

Sample Name:	**9453-A-4 @40**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 16:39**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	3.63	Cl	BMB	0.164	1.130	512.8270
2	5.46	NO3	BMB	0.190	0.938	266.5535
3	9.47	SO4	BMB	0.722	2.132	3089.3406
		TOTAL:		1.08	4.20	3868.72

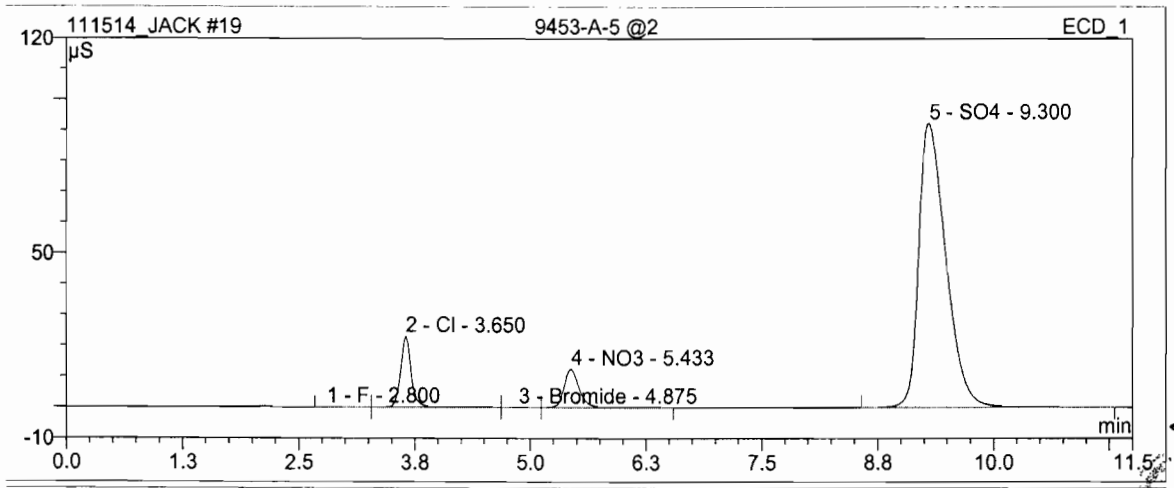


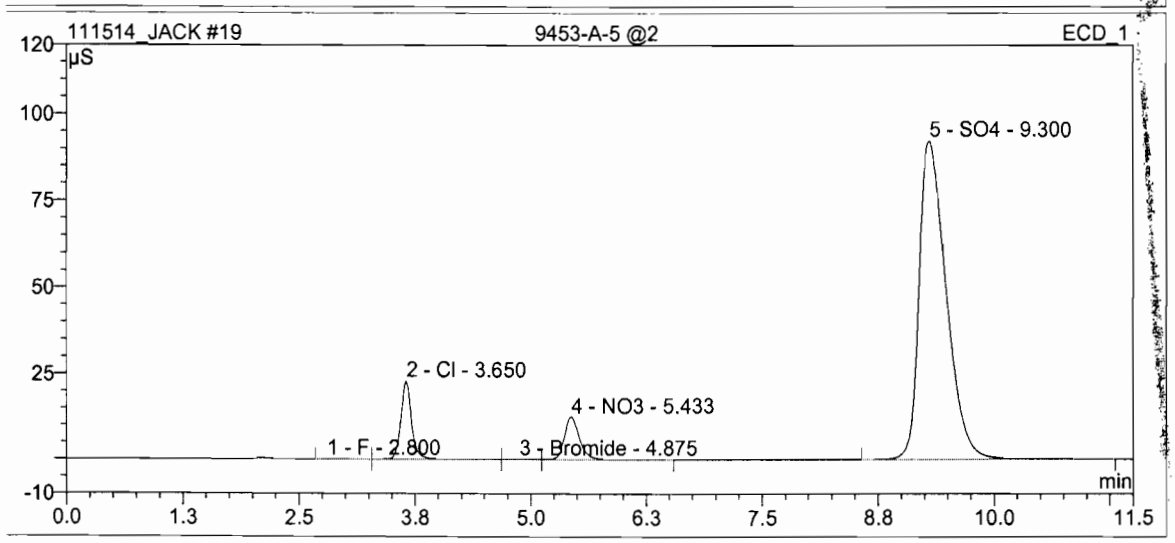


Integration Report - ECD_1

Sample Name:	**9453-A-5 @2**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 16:53**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BM	0.048	0.181	115.5015
2	3.65	Cl	M	3.123	22.977	9760.9590
3	4.88	Bromide	M	0.022	0.082	169.3469
4	5.43	NO3	MB	2.391	12.501	3358.2598
5	9.30	SO4	BMB	31.402	92.390	134314.1274
		TOTAL:		36.99	128.13	147718.19





MT AF 11-21-14

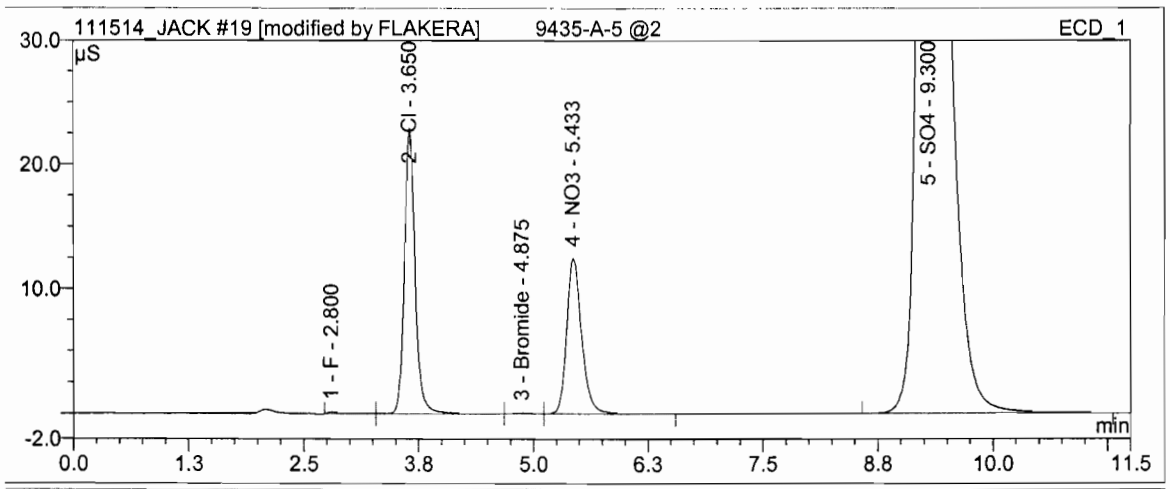
F, Cl, Br, NO3, SO4

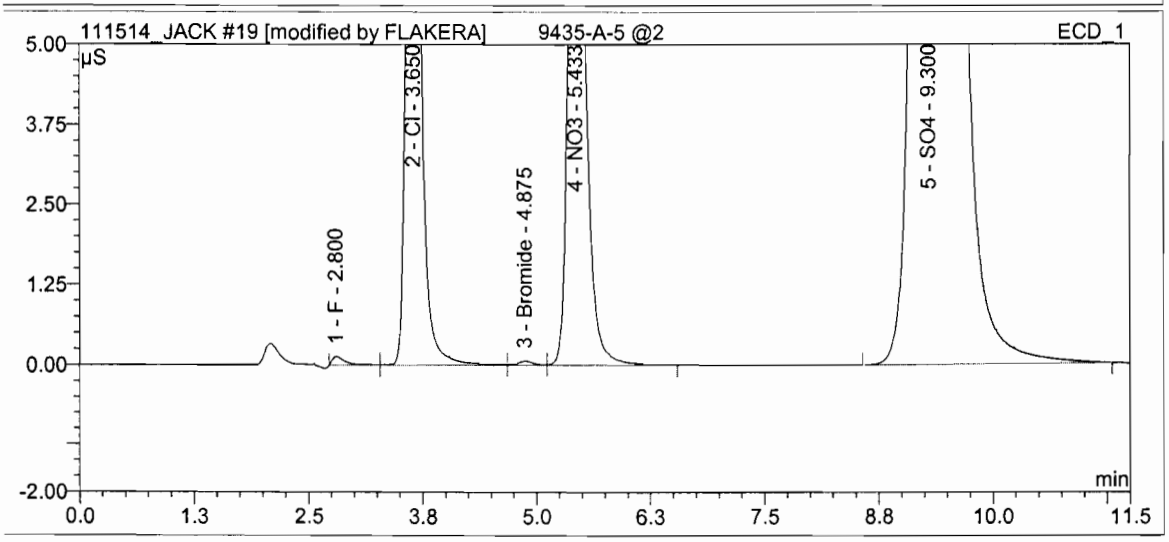
AF 11-21-14

Integration Report - ECD_1

Sample Name:	**9435-A-5 @2**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 16:53**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BM *	0.022	0.134	52.8669
2	3.65	Cl	M *	3.078	22.940	9617.7716
3	4.88	Bromide	M *	0.013	0.061	98.2045
4	5.43	NO3	MB*	2.378	12.487	3339.8625
5	9.30	SO4	BMB	31.402	92.390	134314.1274
		TOTAL:		36.89	128.01	147422.83

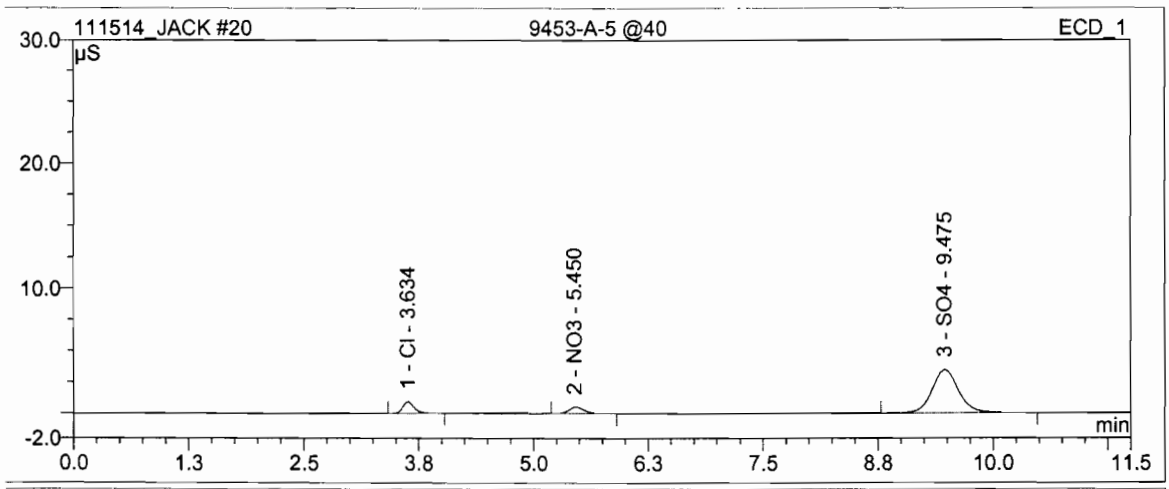


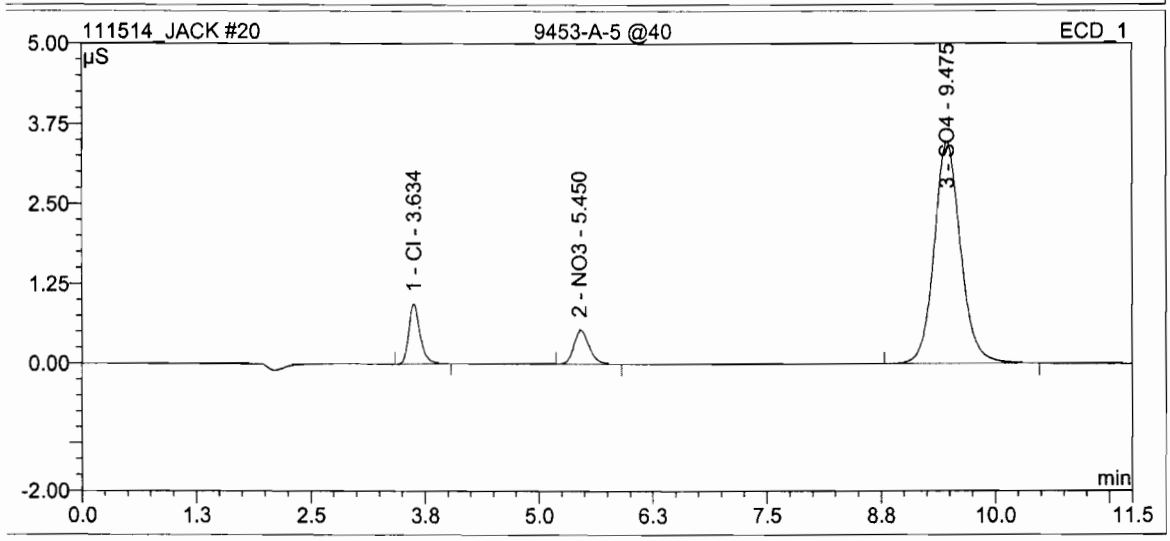


Integration Report - ECD_1

Sample Name:	**9453-A-5 @40**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 17:06**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	3.63	Cl	BMB	0.137	0.940	426.9703
2	5.45	NO3	BMB	0.104	0.545	145.9333
3	9.48	SO4	BMB	1.169	3.461	4998.5725
TOTAL:				1.41	4.95	5571.48

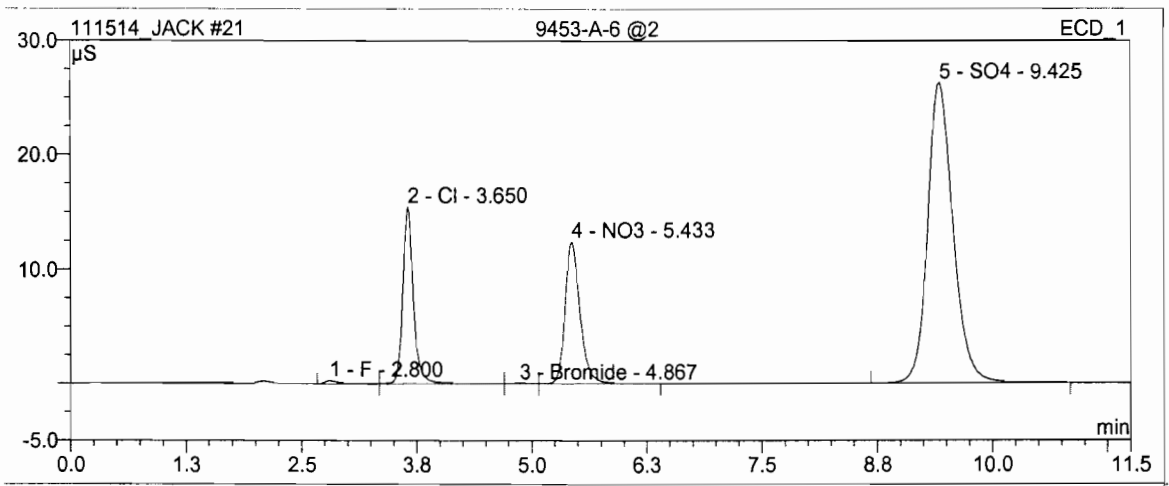


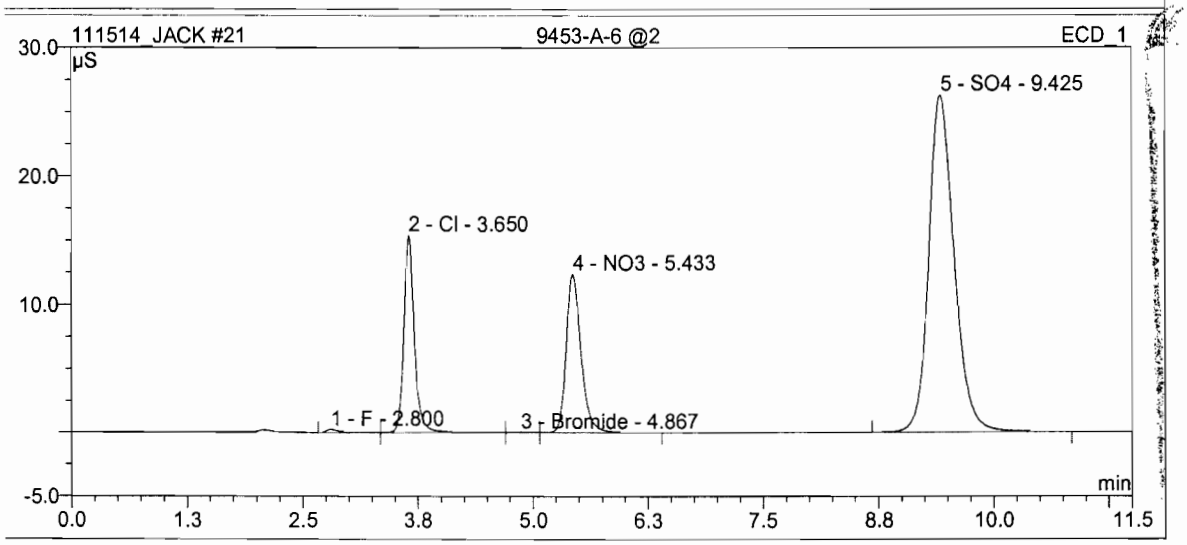


Integration Report - ECD_1

Sample Name:	**9453-A-6 @2**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 17:20**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BM	0.063	0.272	152.0954
2	3.65	Cl	M	2.087	15.447	6522.3926
3	4.87	Bromide	M	0.011	0.044	86.6627
4	5.43	NO3	MB	2.361	12.427	3316.4121
5	9.43	SO4	BMB	8.461	26.266	36188.4598
		TOTAL:		12.98	54.46	46266.02





MI AF 11-21-14

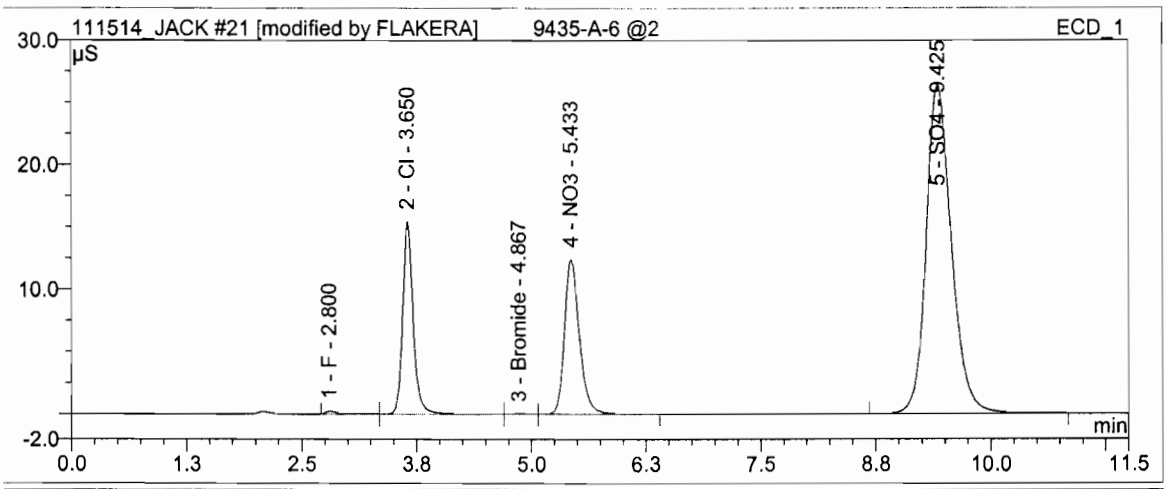
F, Cl, Br, NO3, SO4

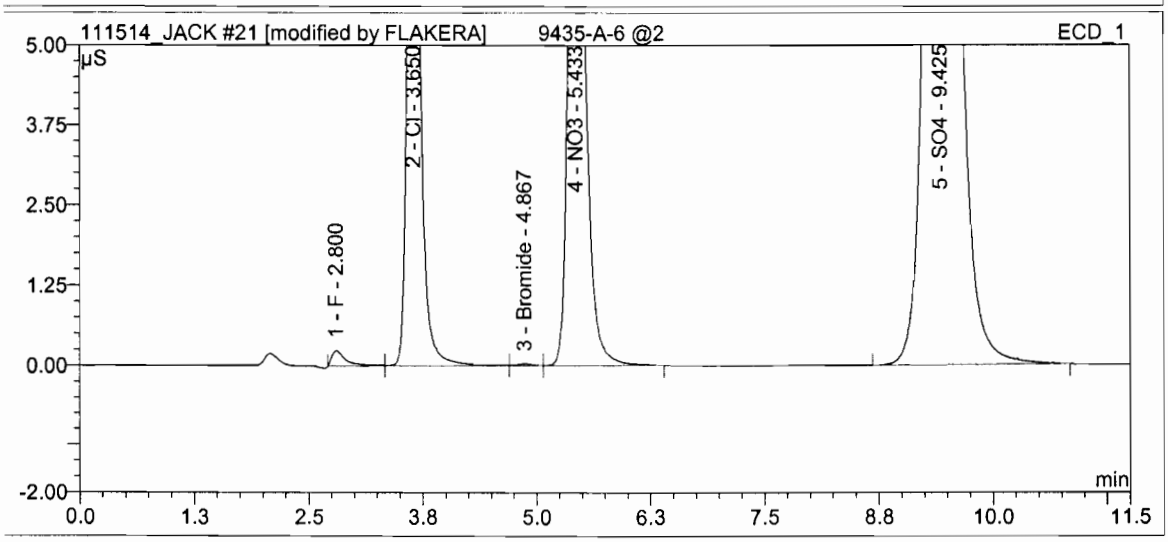
AF 11-21-14

Integration Report - ECD_1

Sample Name:	**9435-A-6 @2**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 17:20**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BM *	0.043	0.240	104.4602
2	3.65	Cl	M *	2.058	15.422	6430.9031
3	4.87	Bromide	M *	0.006	0.030	46.5671
4	5.43	NO3	MB*	2.353	12.419	3305.2417
5	9.43	SO4	BMB	8.461	26.266	36188.4598
		TOTAL:		12.92	54.38	46075.63

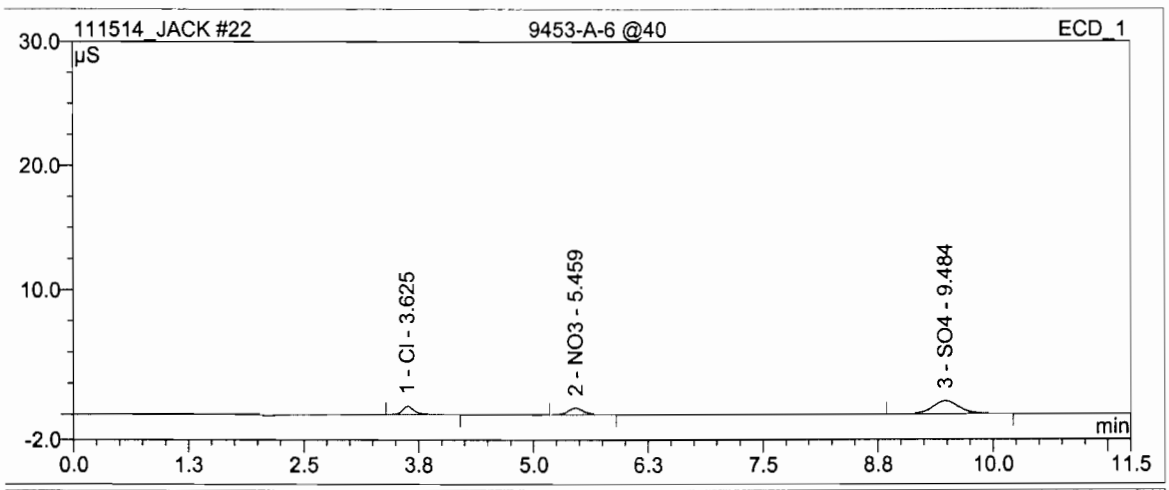


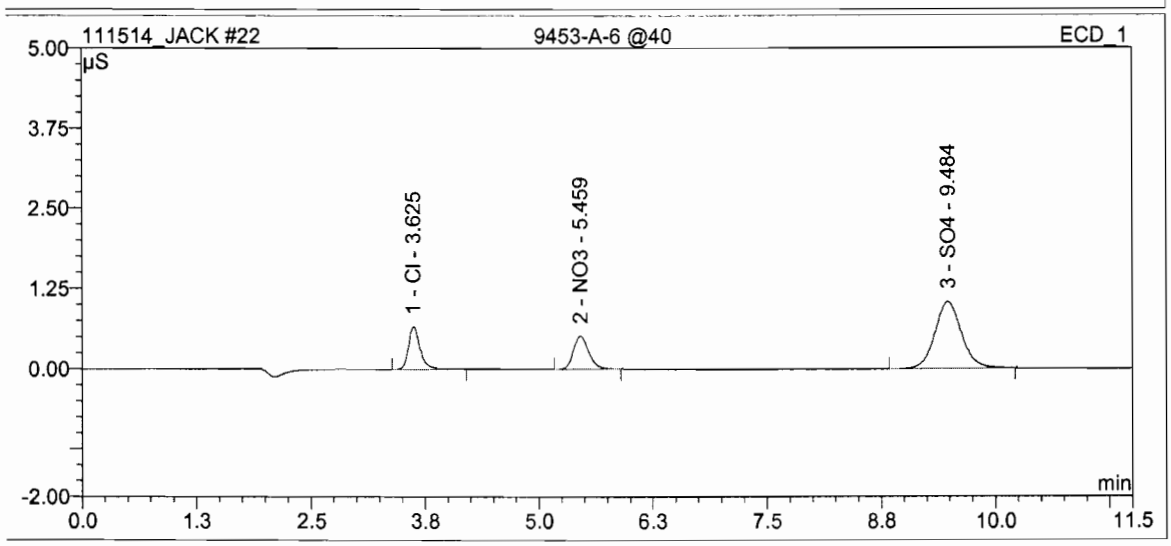


Integration Report - ECD_1

Sample Name:	**9453-A-6 @40**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 17:34**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	3.63	Cl	BMB	0.102	0.666	318.2340
2	5.46	NO3	BMB	0.102	0.519	143.5055
3	9.48	SO4	BMB	0.354	1.039	1512.0780
		TOTAL:		0.56	2.22	1973.82

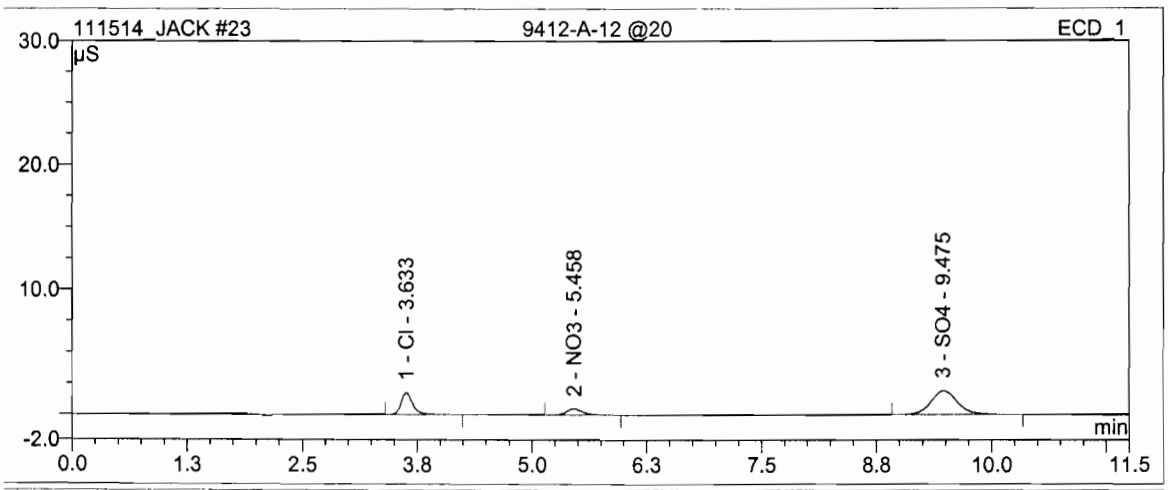


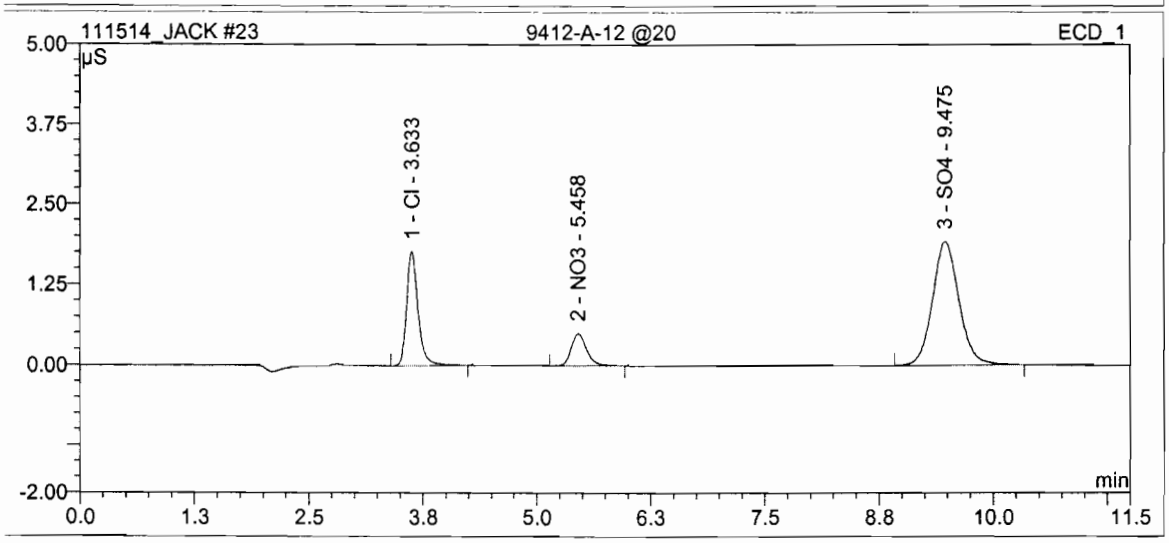


Integration Report - ECD_1

Sample Name:	**9412-A-12 @20**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 17:48**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	3.63	Cl	BMB	0.257	1.762	804.0850
2	5.46	NO3	BMB	0.099	0.498	138.7826
3	9.48	SO4	BMB	0.648	1.912	2769.8654
		TOTAL:		1.00	4.17	3712.73

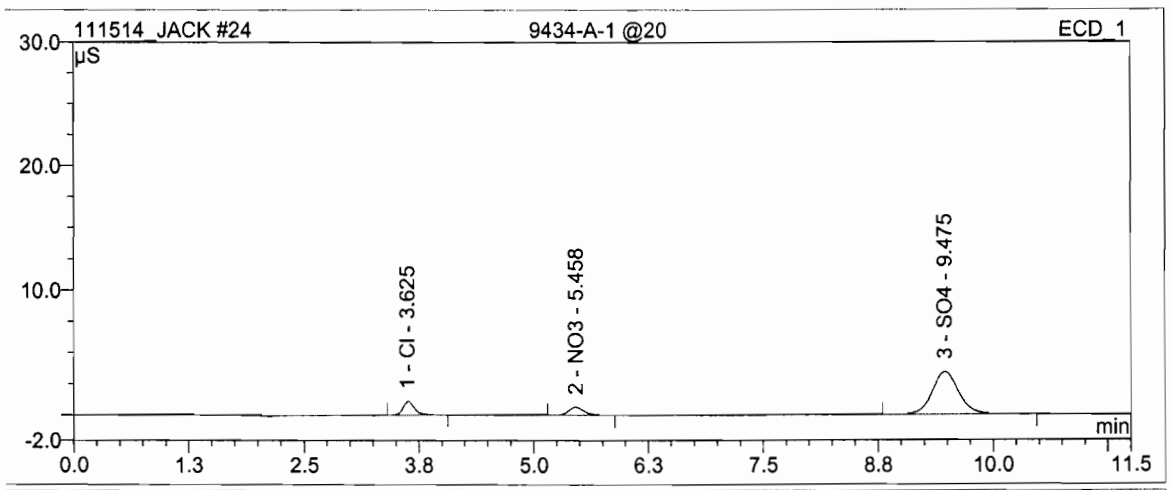


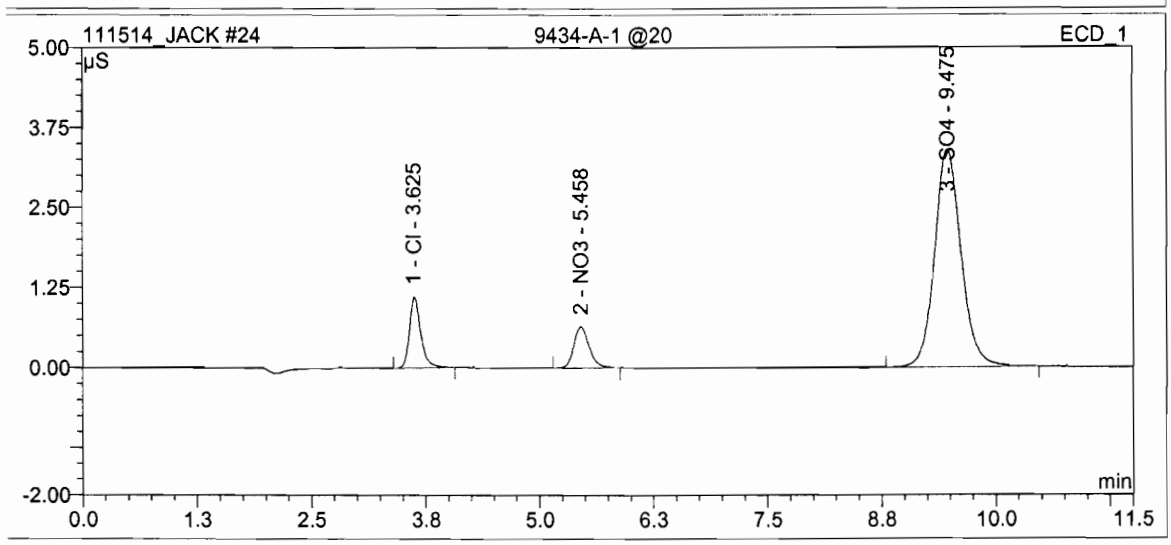


Integration Report - ECD_1

Sample Name:	**9434-A-1 @20**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 18:02**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	3.63	Cl	BMB	0.160	1.104	498.6989
2	5.46	NO3	BMB	0.126	0.642	177.4028
3	9.48	SO4	BMB	1.148	3.401	4909.9889
		TOTAL:		1.43	5.15	5586.09

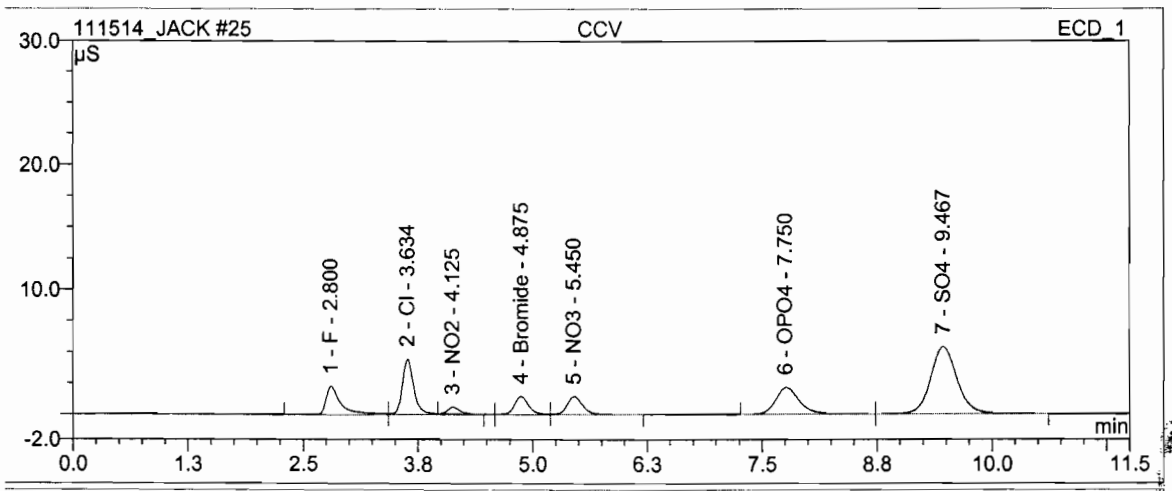


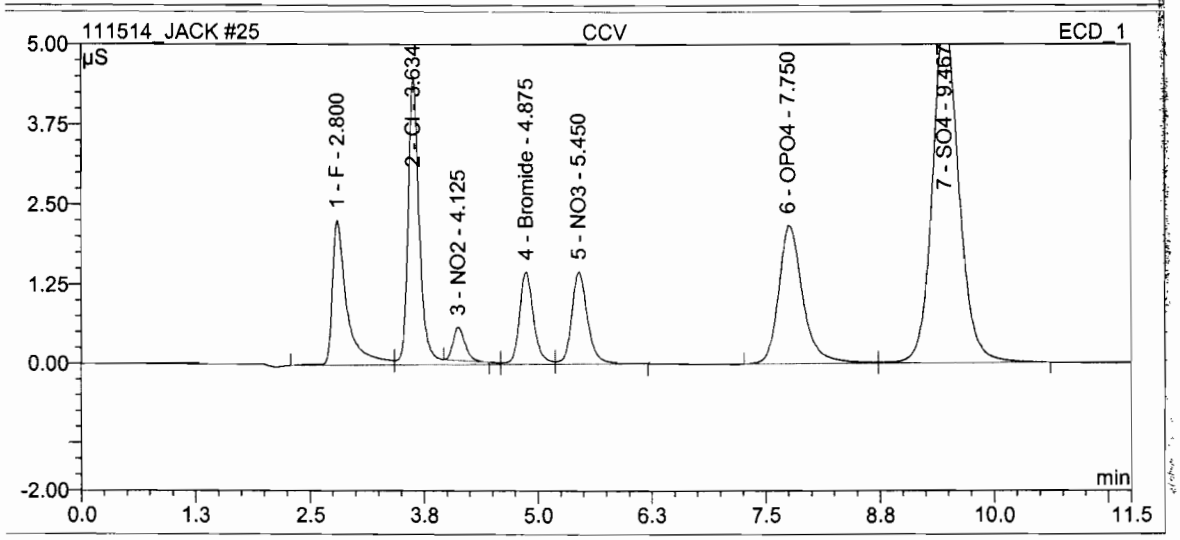


Integration Report - ECD_1

Sample Name:	**CCV**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 18:16**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BM	0.431	2.274	1037.8277
2	3.63	Cl	M	0.680	4.465	2125.9869
3	4.13	NO2	Rd	0.079	0.520	126.2923
4	4.88	Bromide	M	0.265	1.459	2067.1091
5	5.45	NO3	MB	0.298	1.458	418.8296
6	7.75	OPO4	BM	0.673	2.169	7801.5914
7	9.47	SO4	MB	1.814	5.399	7759.0667
		TOTAL:		4.24	17.74	21336.70





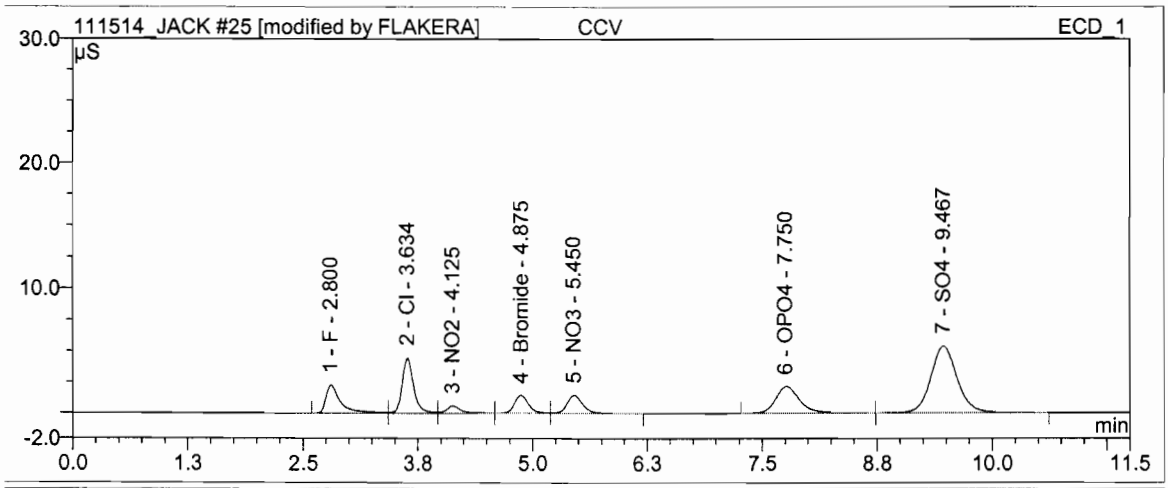
MI AF 11-21-14

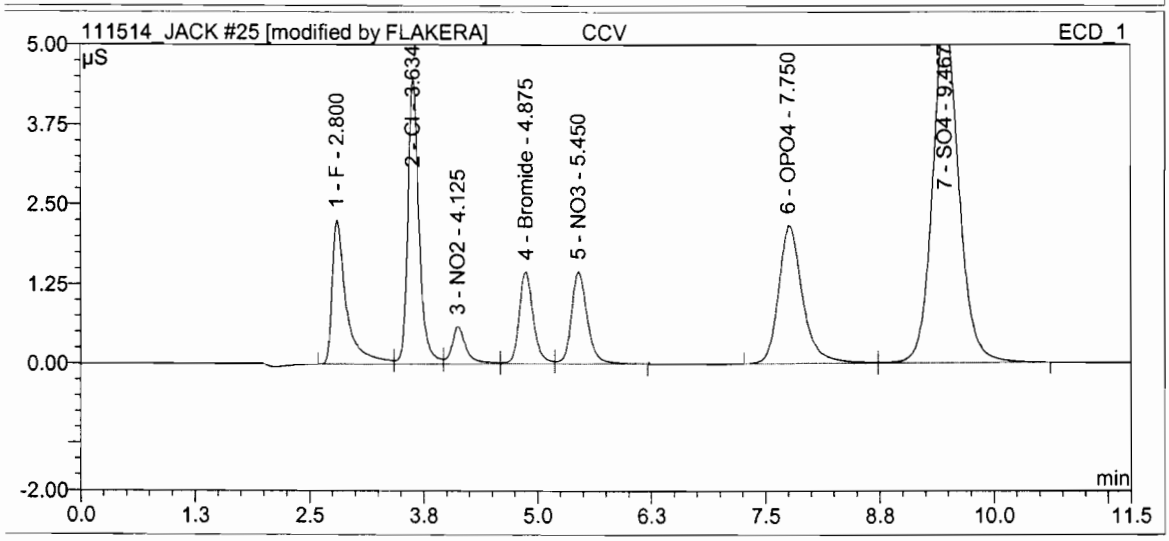
all but OPO4 SO4

Integration Report - ECD_1

Sample Name:	**CCV**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 18:16**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BM *	0.414	2.257	997.3468
2	3.63	Cl	M *	0.639	4.452	1998.0624
3	4.13	NO2	M *	0.107	0.580	171.3975
4	4.88	Bromide	M *	0.261	1.452	2036.5964
5	5.45	NO3	MB*	0.296	1.454	415.2367
6	7.75	OPO4	BM	0.673	2.169	7801.5914
7	9.47	SO4	MB	1.814	5.399	7759.0667
		TOTAL:		4.20	17.76	21179.30

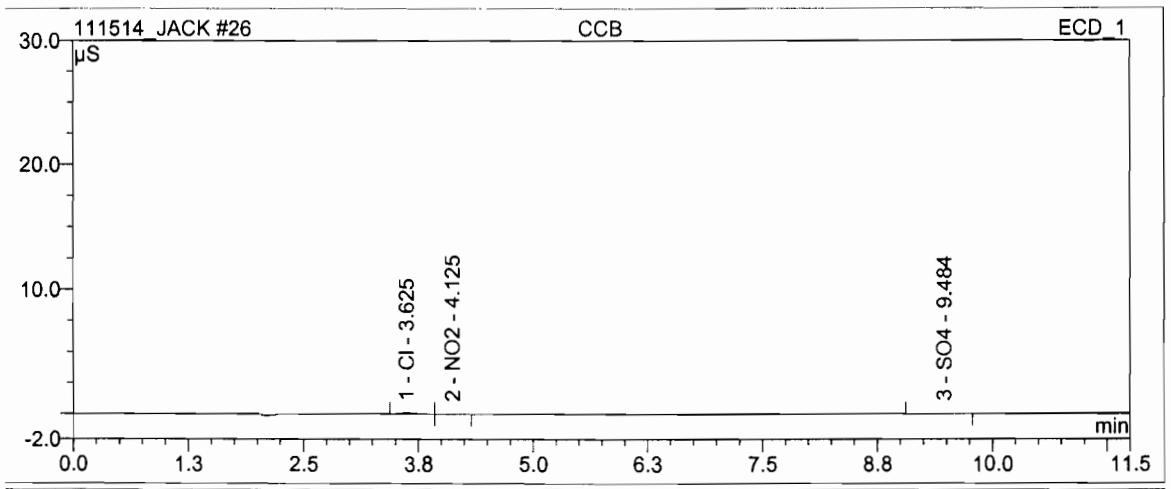


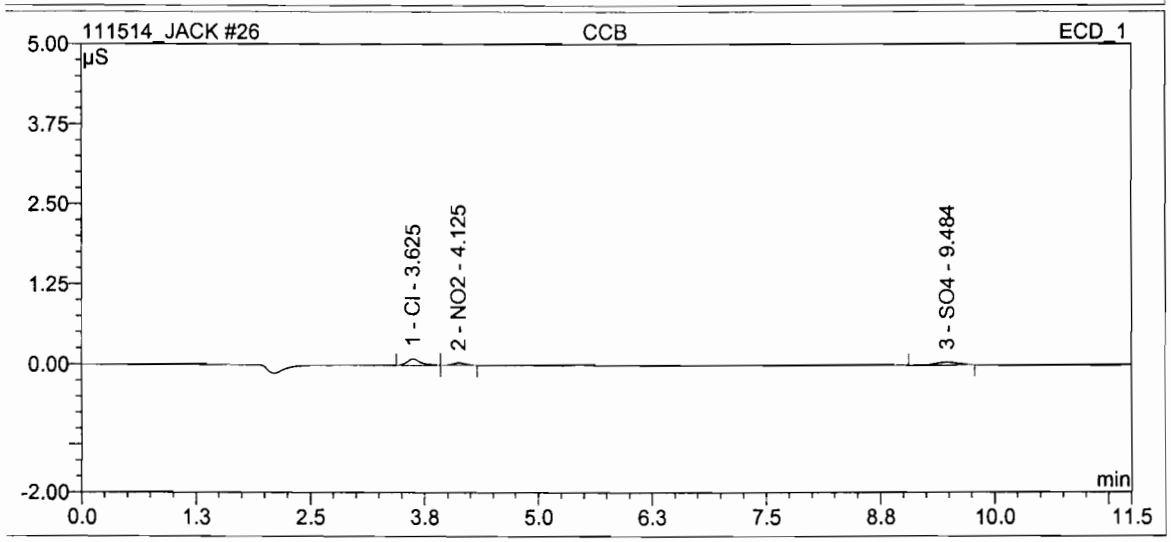


Integration Report - ECD_1

Sample Name:	**CCB**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 18:30**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	3.63	Cl	BM	0.018	0.101	56.9578
2	4.13	NO2	MB	0.007	0.038	10.5775
3	9.48	SO4	BMB	0.013	0.046	57.6510
		TOTAL:		0.04	0.19	125.19

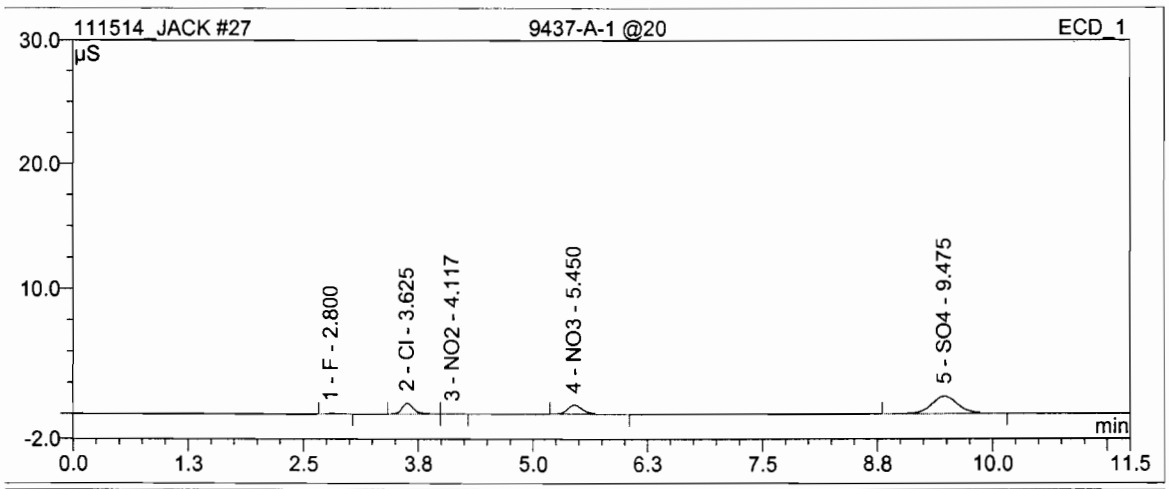


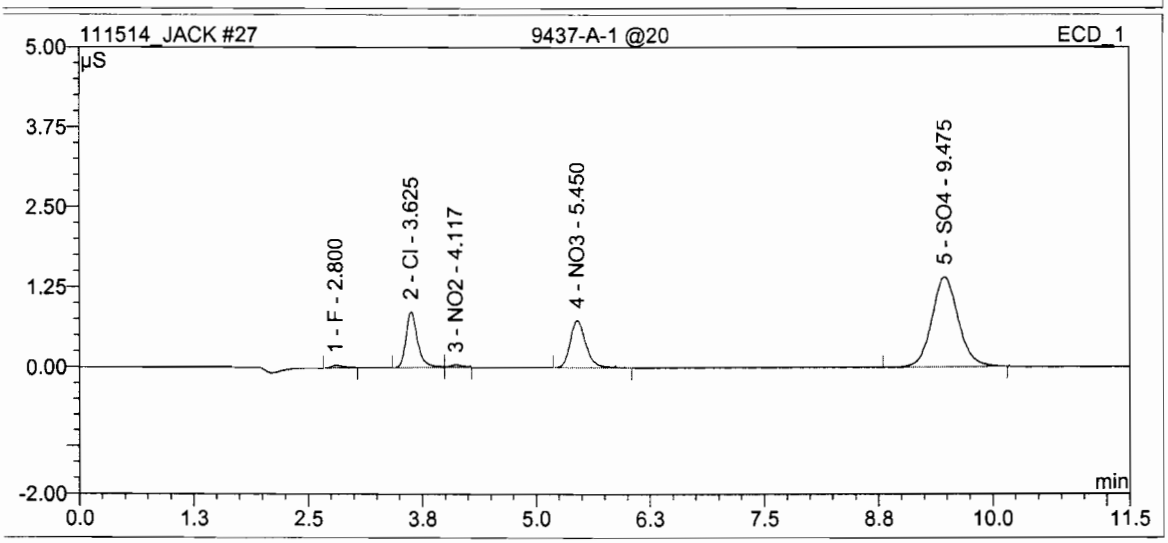


Integration Report - ECD_1

Sample Name:	**9437-A-1 @20**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 18:44**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BMB	0.006	0.040	14.6103
2	3.63	Cl	BM	0.131	0.872	408.4846
3	4.12	NO2	MB	0.007	0.039	11.2822
4	5.45	NO3	BMB	0.148	0.738	208.3063
5	9.48	SO4	BMB	0.475	1.402	2033.0594
		TOTAL:		0.77	3.09	2675.74

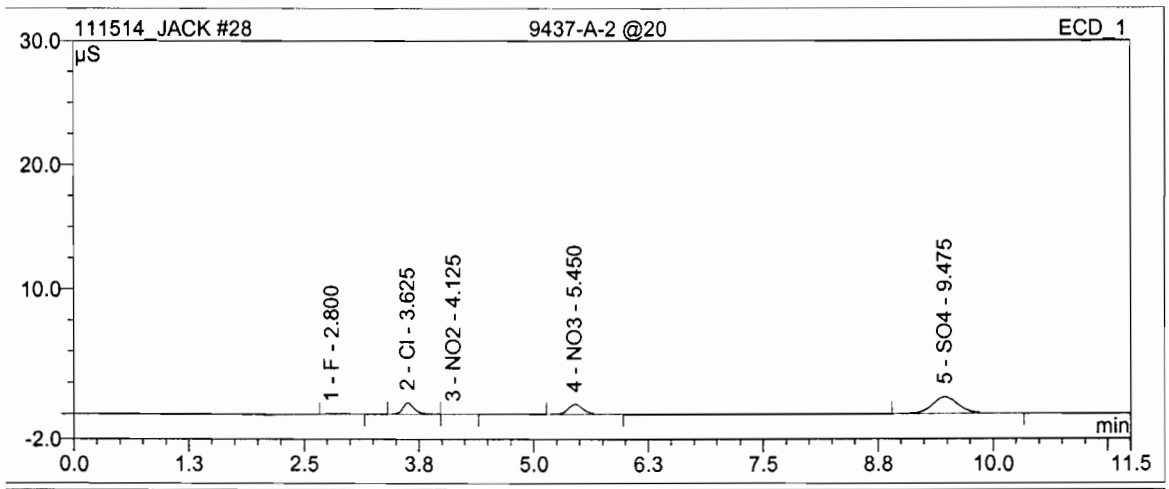


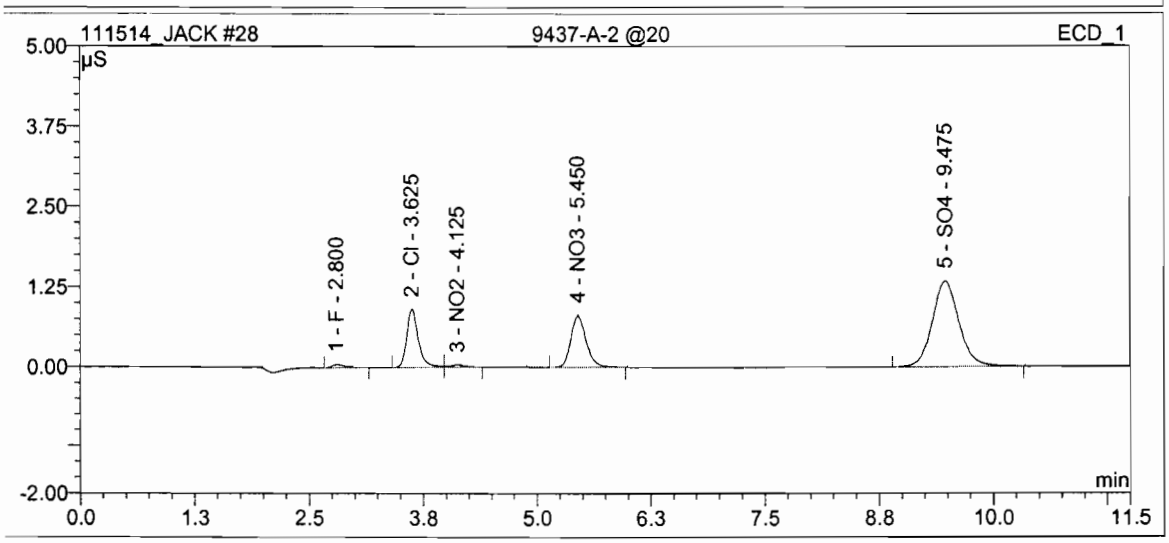


Integration Report - ECD_1

Sample Name:	**9437-A-2 @20**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 18:58**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BMB	0.009	0.051	21.0567
2	3.63	Cl	BM	0.135	0.907	422.8186
3	4.13	NO2	MB	0.007	0.037	10.9585
4	5.45	NO3	BMB	0.159	0.823	223.5478
5	9.48	SO4	BMB	0.456	1.335	1949.2450
TOTAL:				0.77	3.15	2627.63

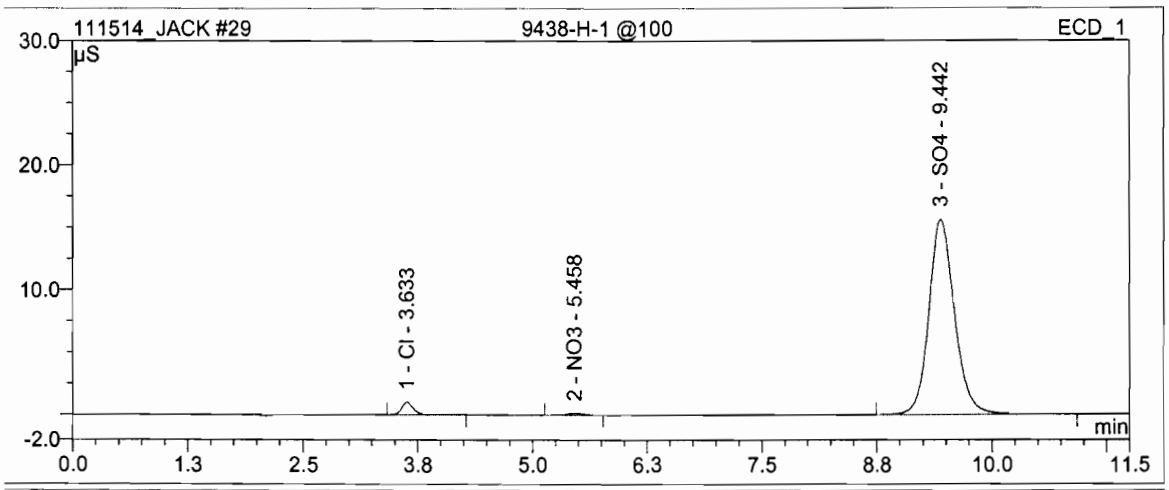


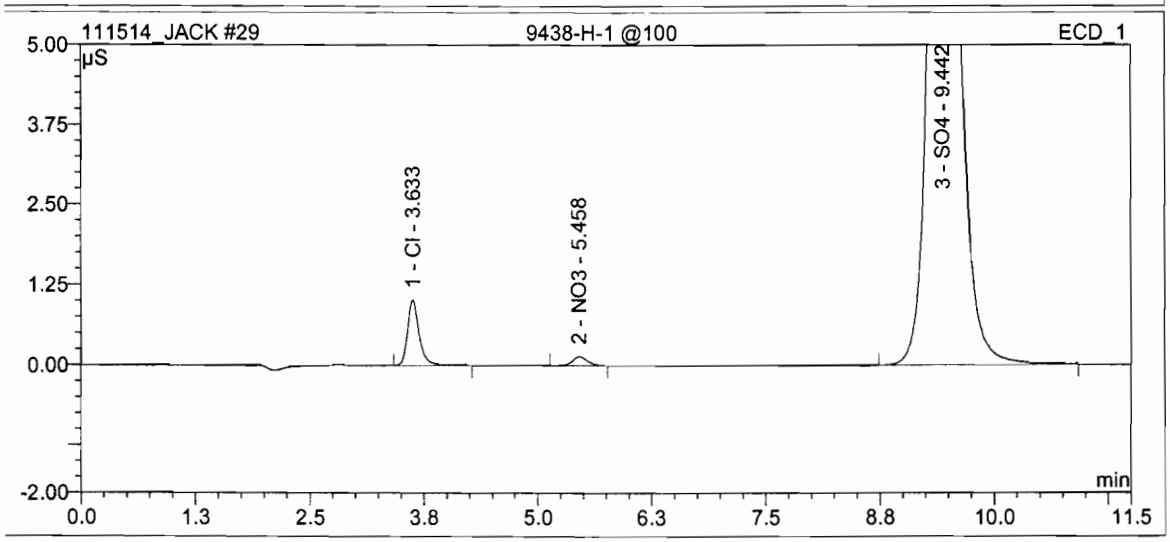


Integration Report - ECD_1

Sample Name:	**9438-H-1 @100**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 19:12**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	3.63	Cl	BMB	0.153	1.011	477.7021
2	5.46	NO3	BMB	0.028	0.144	39.7785
3	9.44	SO4	BMB	5.096	15.606	21797.0428
		TOTAL:		5.28	16.76	22314.52

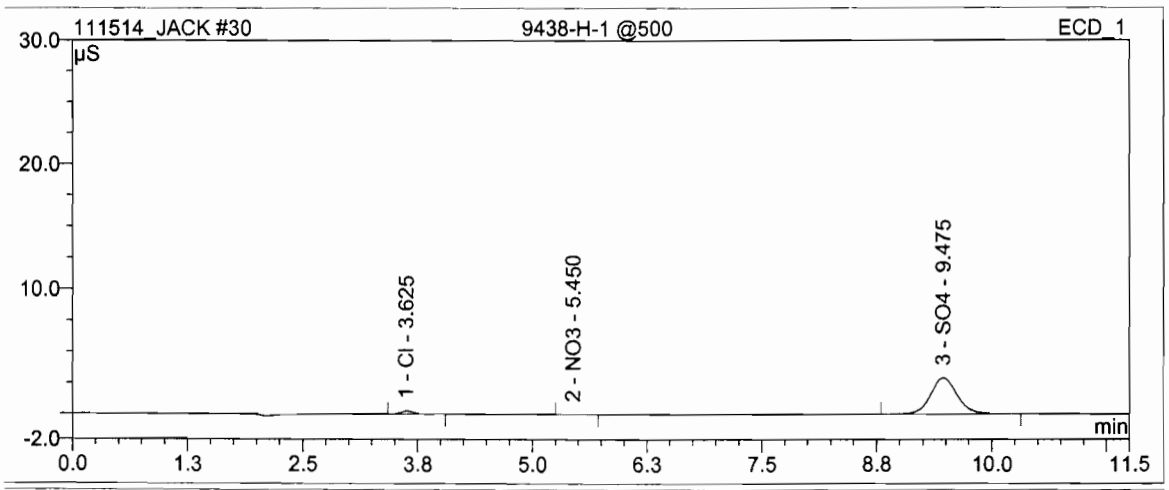


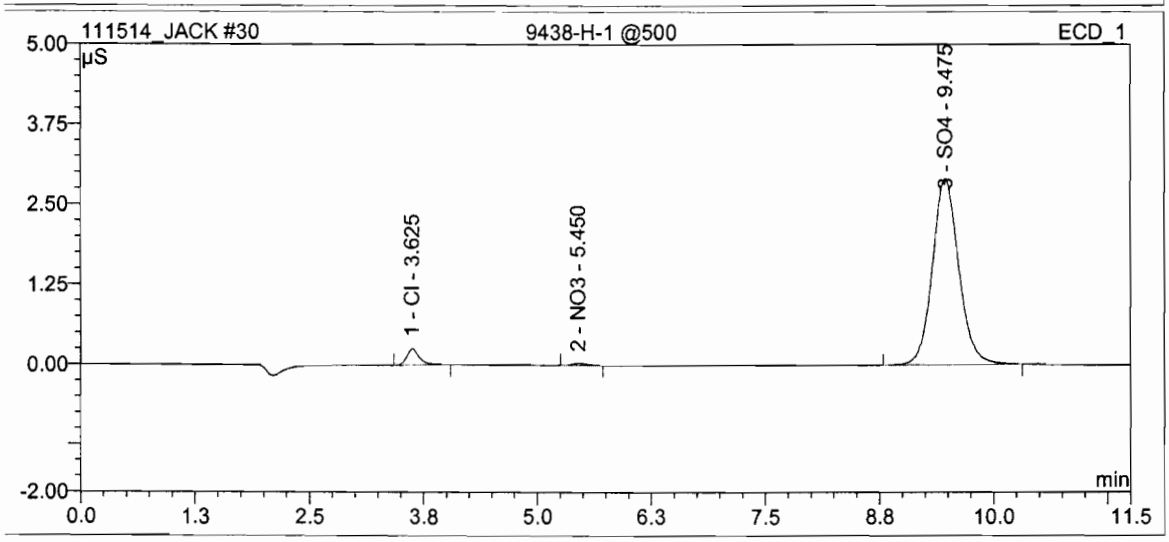


Integration Report - ECD_1

Sample Name:	**9438-H-1 @500**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 19:26**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	3.63	Cl	BMB	0.041	0.255	128.8369
2	5.45	NO3	BMB	0.006	0.033	8.7218
3	9.48	SO4	BMB	0.975	2.896	4169.2013
TOTAL:				1.02	3.18	4306.76

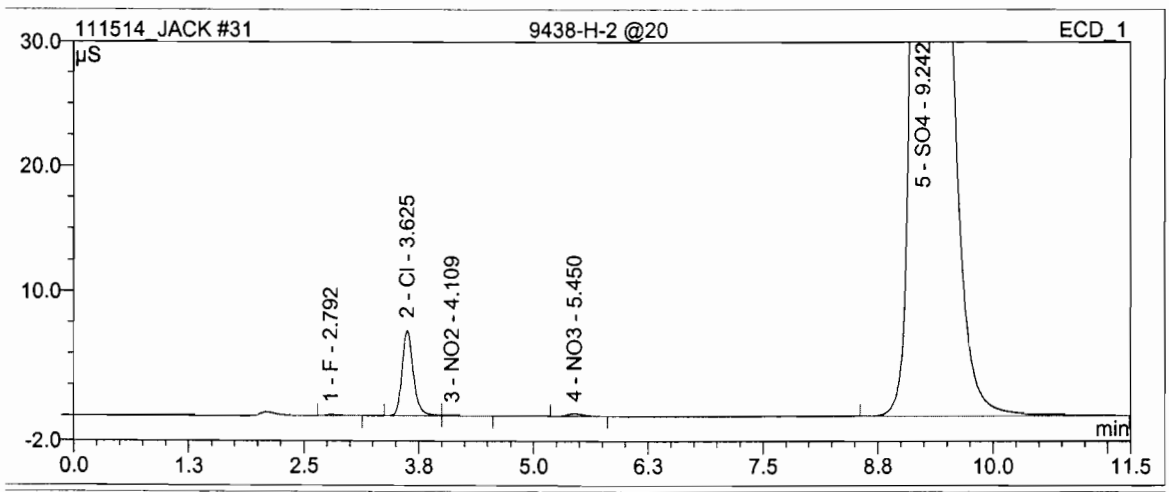


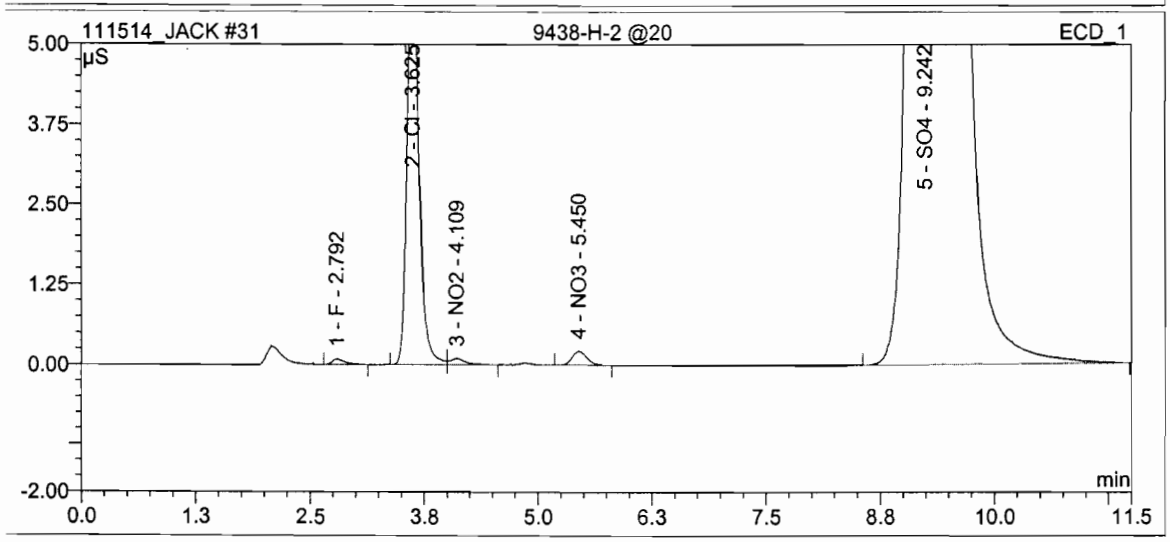


Integration Report - ECD_1

Sample Name:	**9438-H-2 @20**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 19:40**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.79	F	BMB	0.014	0.087	34.4766
2	3.63	Cl	BM	0.979	6.879	3059.0929
3	4.11	NO2	MB	0.019	0.096	30.3592
4	5.45	NO3	BMB	0.042	0.217	59.2279
5	9.24	SO4	BMB	43.980	123.177	188111.7486
		TOTAL:		45.03	130.46	191294.91

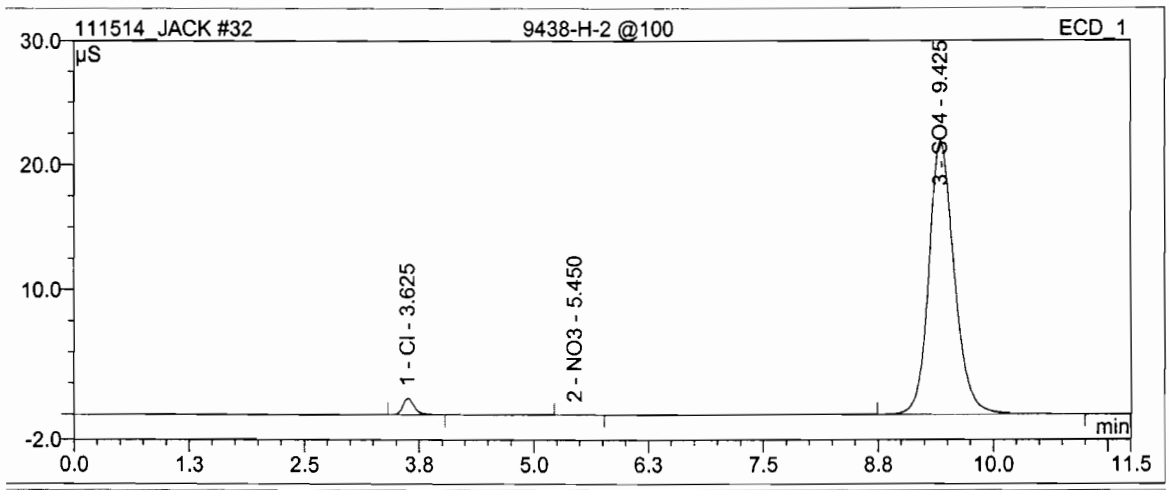


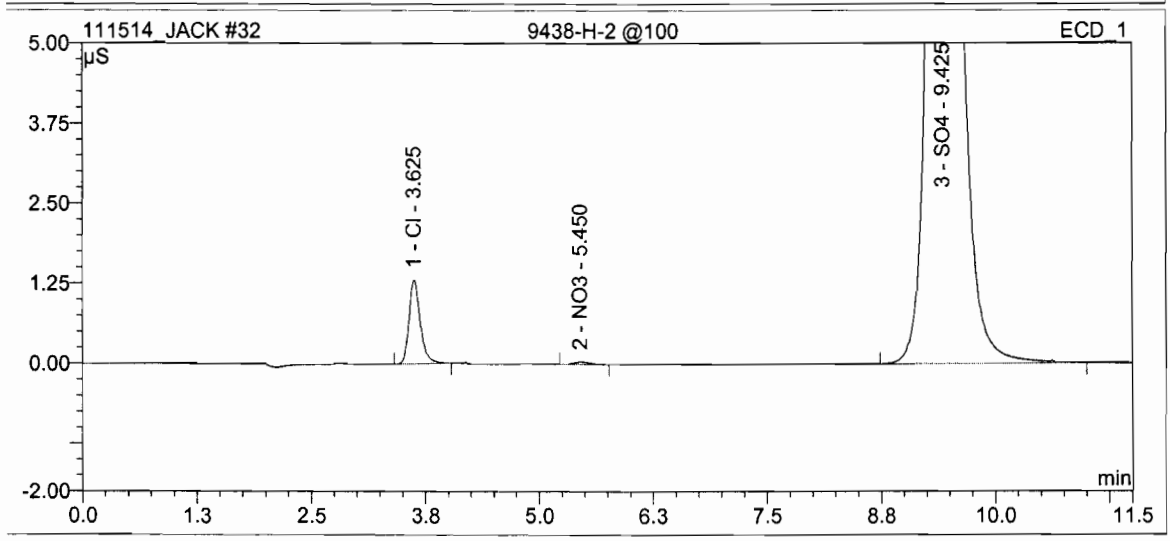


Integration Report - ECD_1

Sample Name:	**9438-H-2 @100**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 19:53**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	3.63	Cl	BMB	0.188	1.302	587.6481
2	5.45	NO3	BMB	0.008	0.041	11.8862
3	9.43	SO4	BMB	7.082	21.870	30291.7671
		TOTAL:		7.28	23.21	30891.30

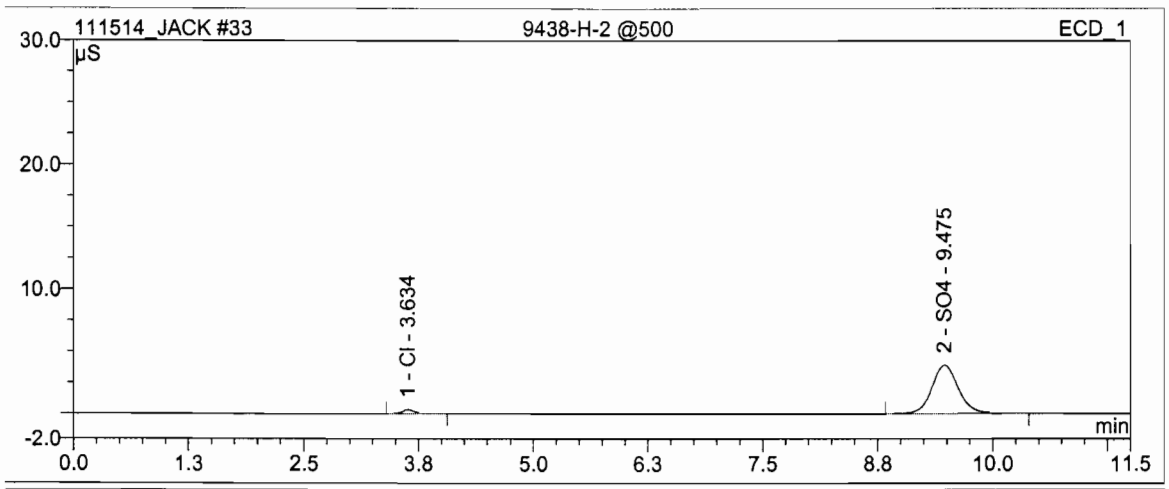


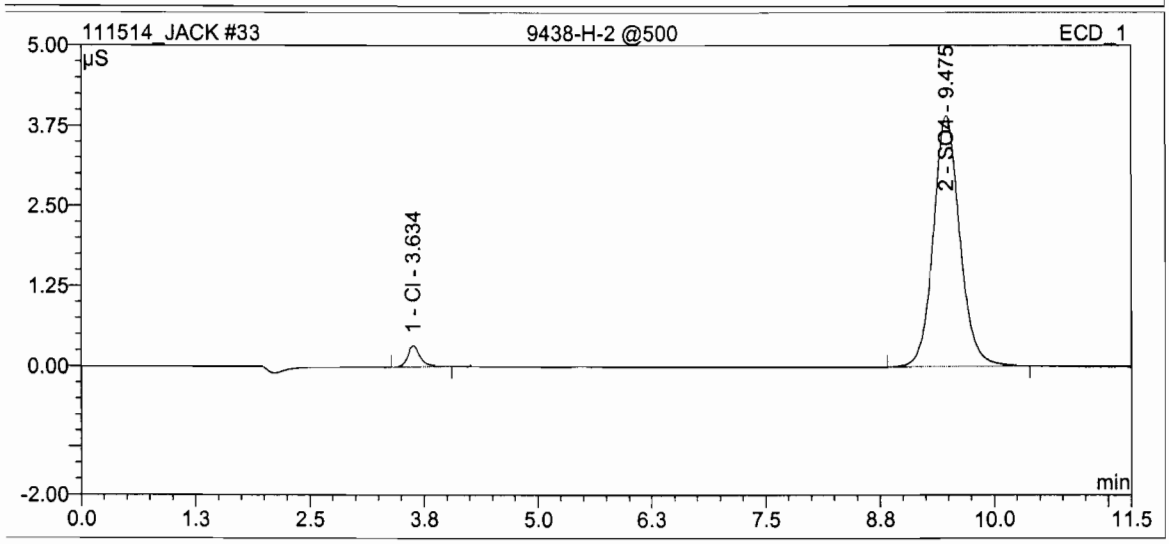


Integration Report - ECD_1

Sample Name:	**9438-H-2 @500**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 20:07**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	3.63	Cl	BMB	0.053	0.330	166.1464
2	9.48	SO4	BMB	1.313	3.906	5614.2547
TOTAL:				1.37	4.24	5780.40

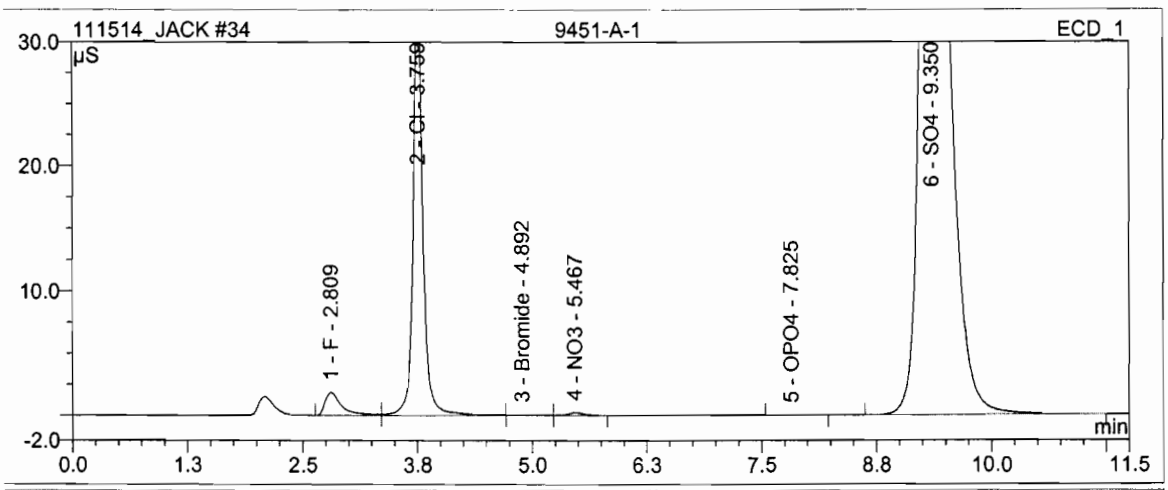


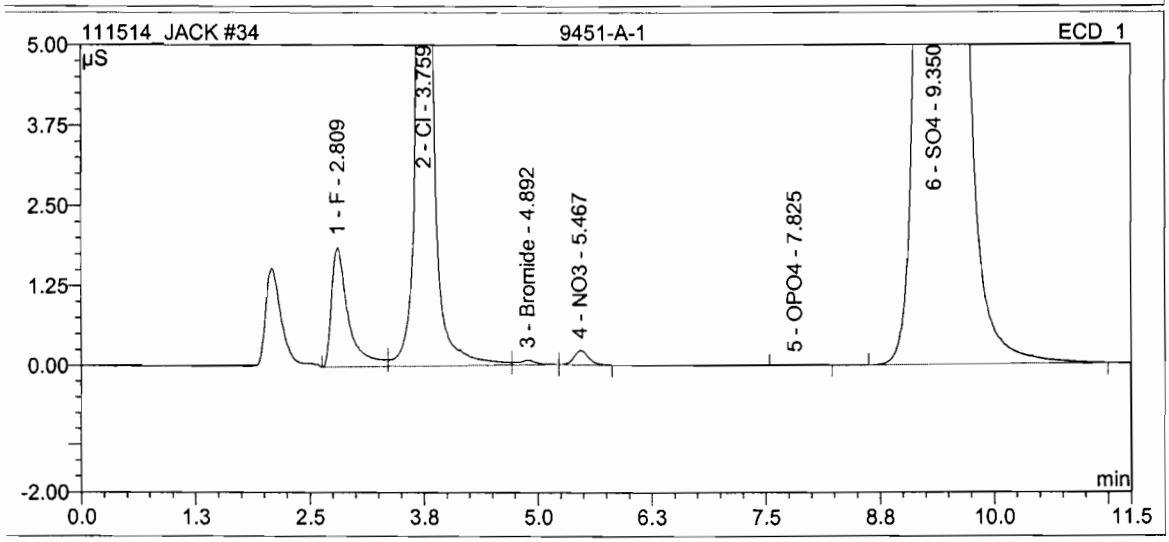


Integration Report - ECD_1

Sample Name:	**9451-A-1**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 20:21**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.81	F	BM	0.403	1.869	970.9767
2	3.76	Cl	M	4.229	35.804	13214.6767
3	4.89	Bromide	MB	0.016	0.074	127.9804
4	5.47	NO3	bMB	0.042	0.227	59.3507
5	7.83	OPO4	BMB	0.006	0.018	71.1623
6	9.35	SO4	BMB	24.028	72.866	102771.5846
		TOTAL:		28.72	110.86	117215.73

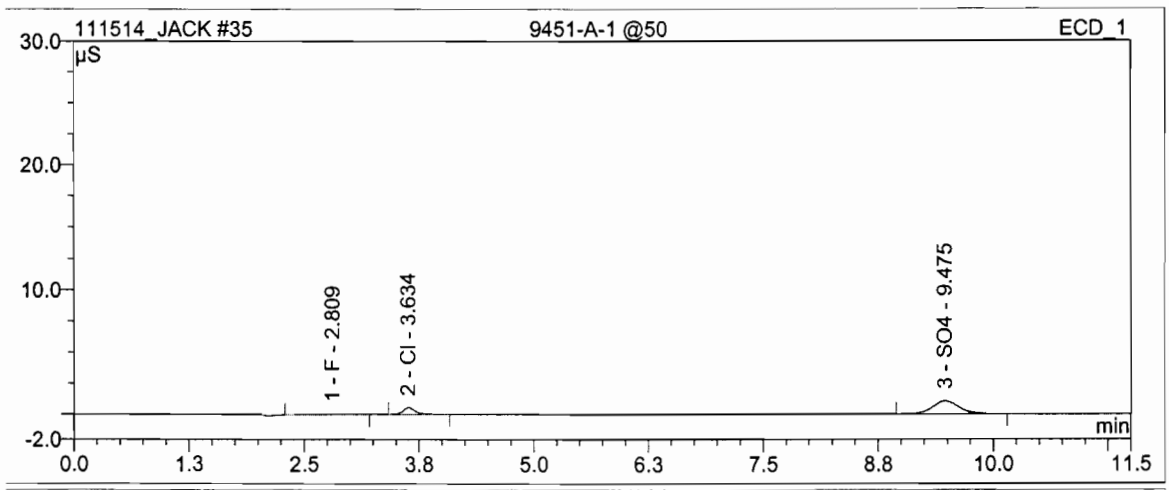


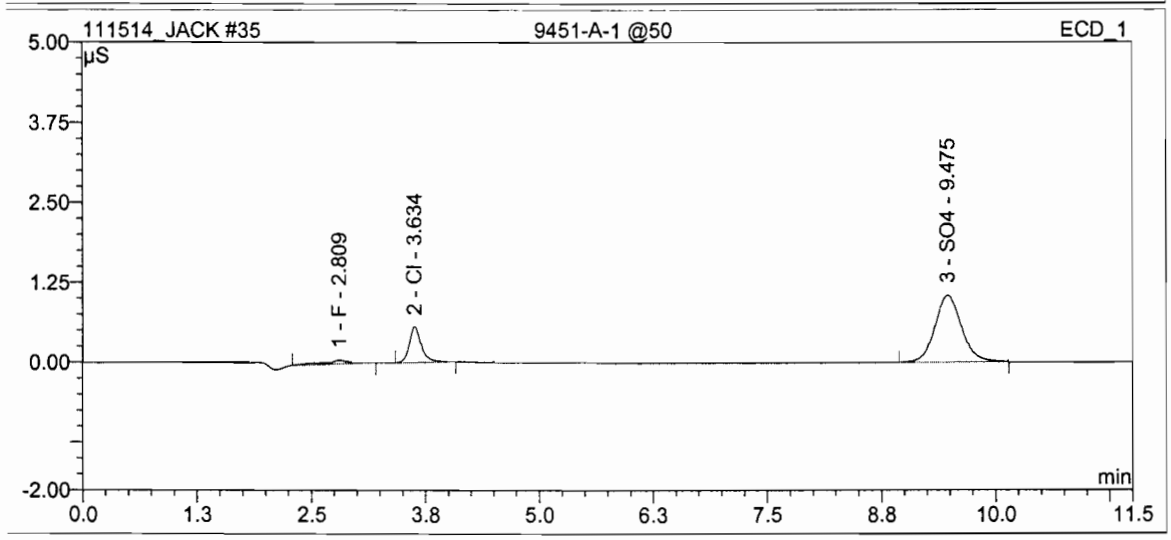


Integration Report - ECD_1

Sample Name:	**9451-A-1 @50**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 20:35**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.81	F	BMB	0.019	0.056	45.5755
2	3.63	Cl	BMB	0.086	0.552	268.9011
3	9.48	SO4	BMB	0.354	1.041	1512.2133
		TOTAL:		0.46	1.65	1826.69

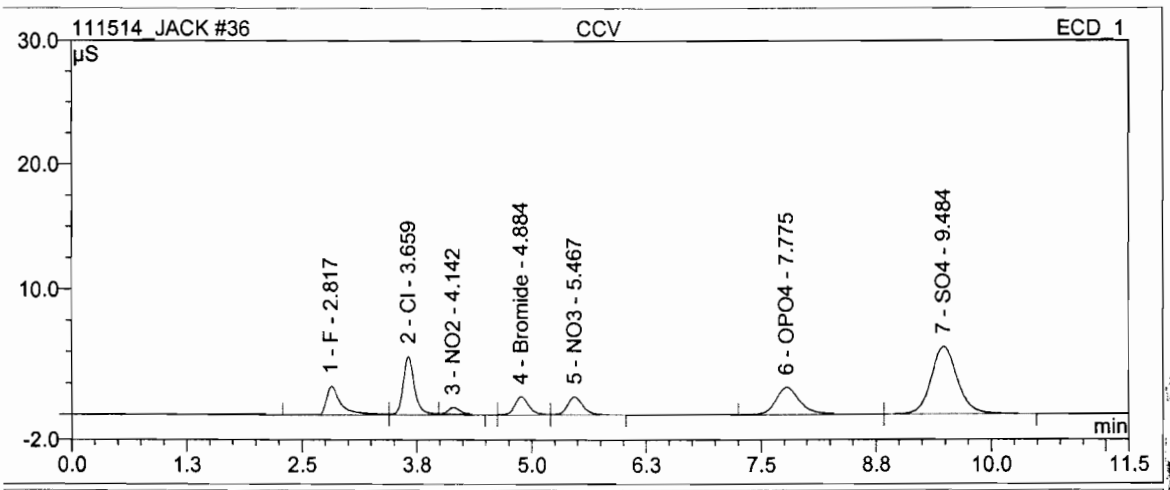


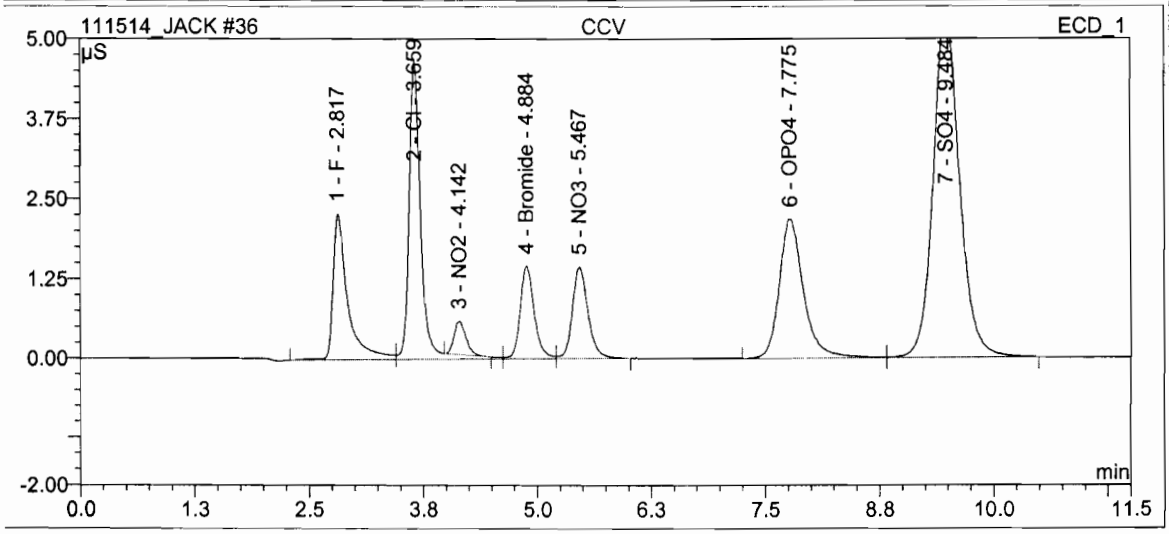


Integration Report - ECD_1

Sample Name:	**CCV**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 20:49**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.82	F	BM	0.434	2.282	1044.5683
2	3.66	Cl	M	0.707	4.673	2210.6211
3	4.14	NO2	Rd	0.080	0.527	127.7483
4	4.88	Bromide	M	0.263	1.462	2052.9483
5	5.47	NO3	MB	0.290	1.442	406.8493
6	7.78	OPO4	BM	0.680	2.180	7883.7431
7	9.48	SO4	MB	1.804	5.393	7714.7290
		TOTAL:		4.26	17.96	21441.21





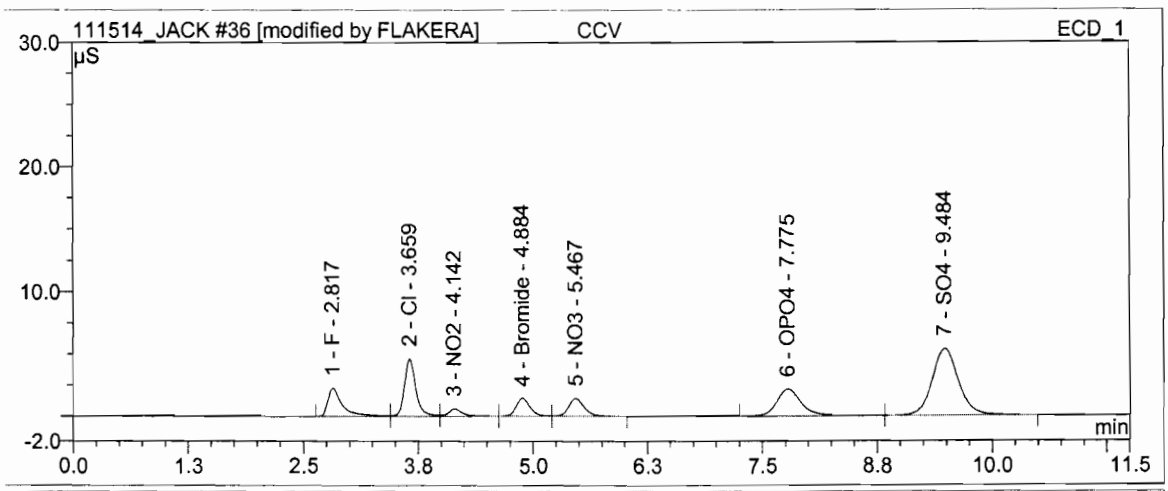
MI AE 11-21-14

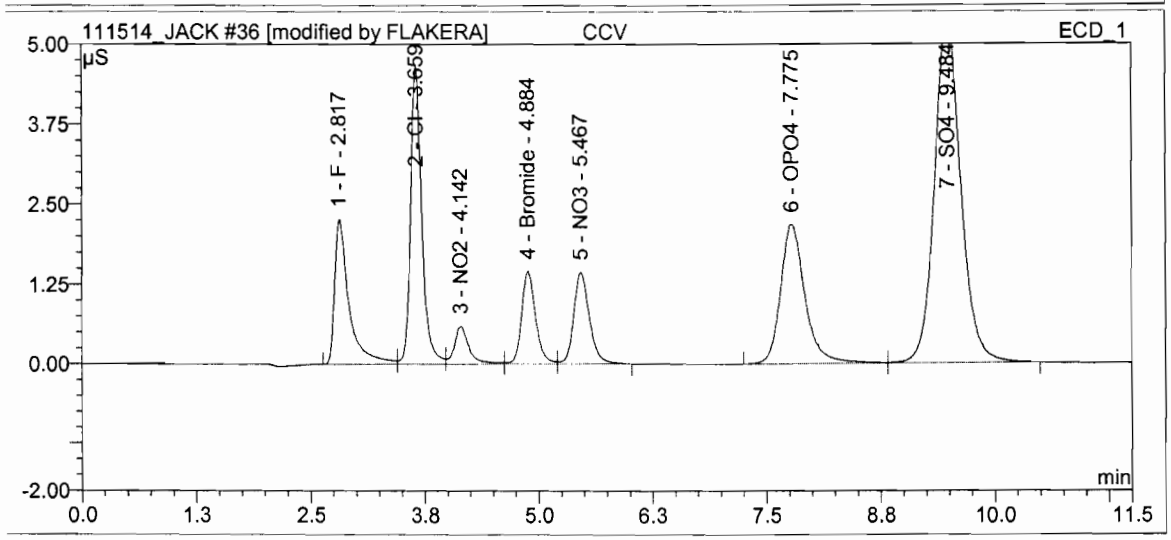
all but OPO4 SO4

Integration Report - ECD_1

Sample Name:	**CCV**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 20:49**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.82	F	BM *	0.414	2.262	996.5653
2	3.66	Cl	M *	0.663	4.658	2072.3966
3	4.14	NO2	M *	0.110	0.590	175.0979
4	4.88	Bromide	M *	0.259	1.455	2021.4169
5	5.47	NO3	MB*	0.288	1.439	403.9219
6	7.78	OPO4	BM	0.680	2.180	7883.7431
7	9.48	SO4	MB	1.804	5.393	7714.7290
		TOTAL:		4.22	17.98	21267.87

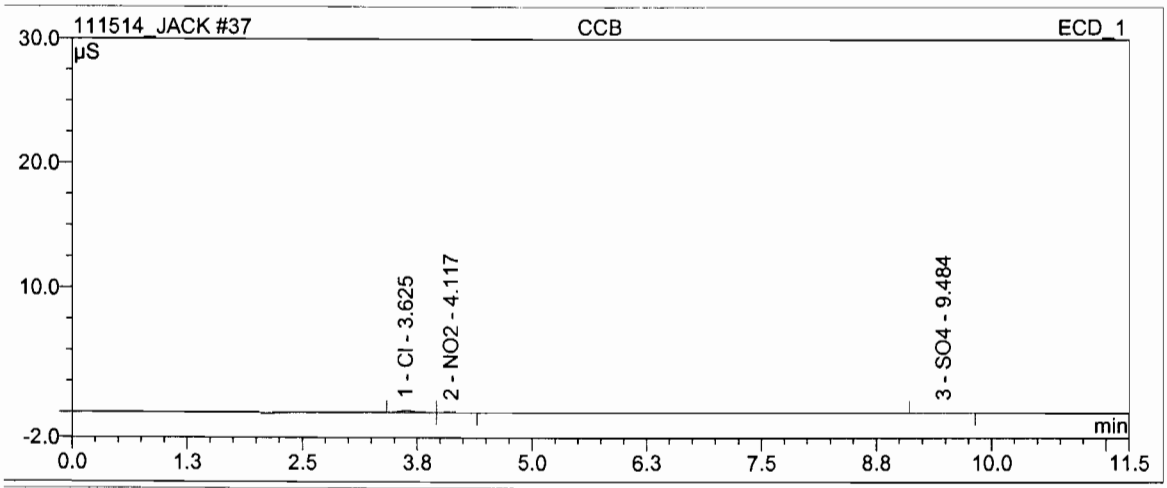


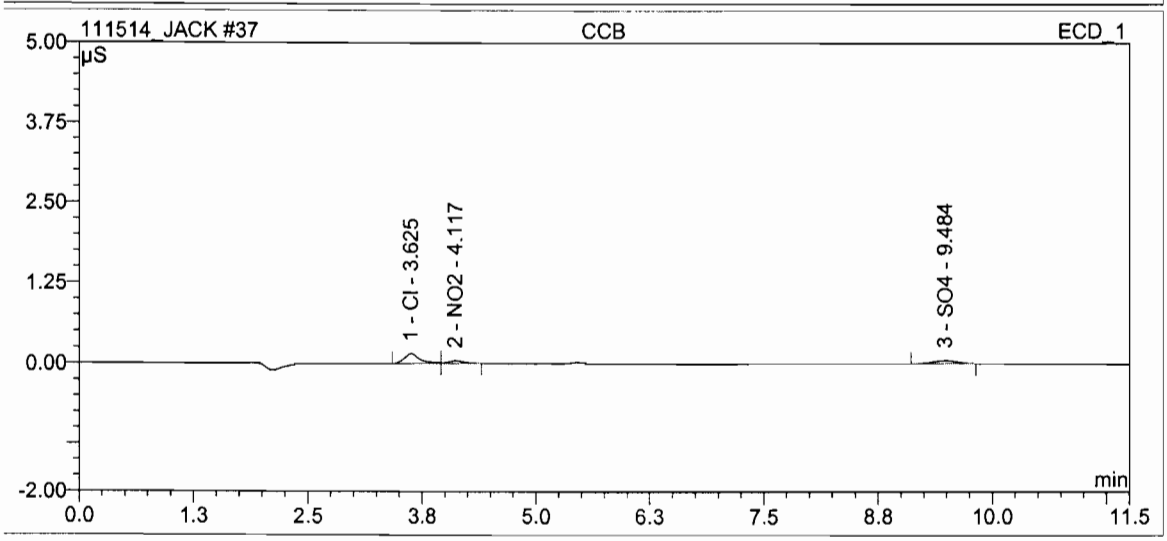


Integration Report - ECD_1

Sample Name:	**CCB**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 21:03**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	3.63	Cl	BM	0.031	0.154	95.3903
2	4.12	NO2	MB	0.008	0.041	12.2043
3	9.48	SO4	BMB	0.014	0.047	61.8964
		TOTAL:		0.05	0.24	169.49

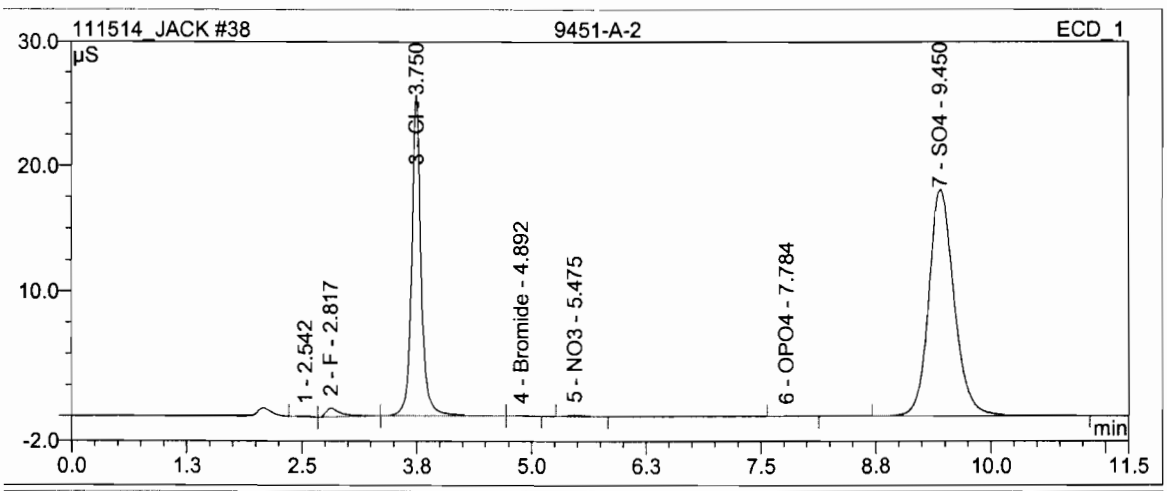


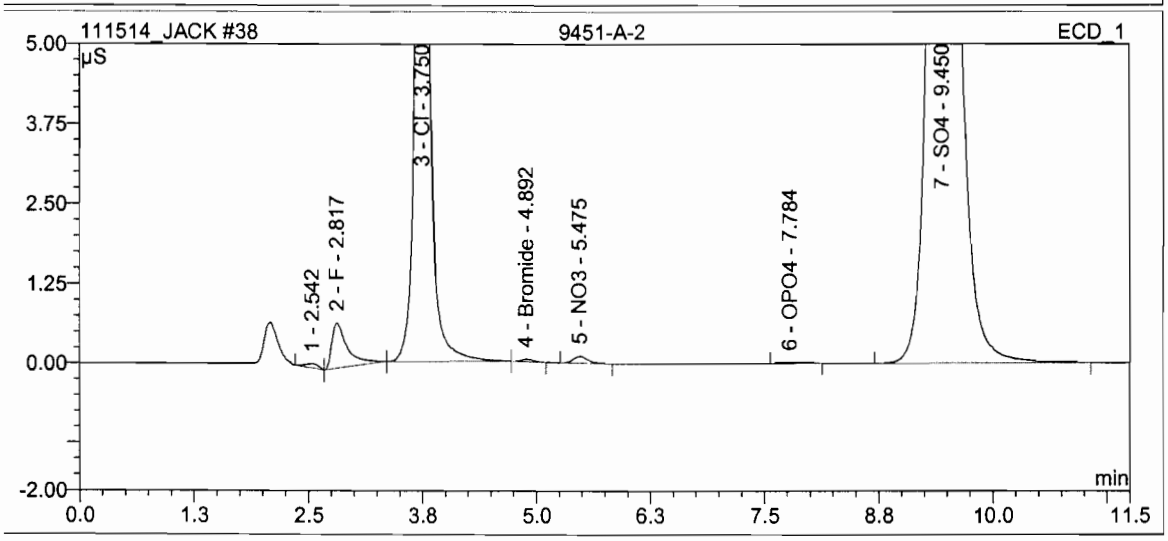


Integration Report - ECD_1

Sample Name:	**9451-A-2**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 21:17**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
2	2.82	F	bMb	0.142	0.716	342.2108
3	3.75	Cl	bMb	3.085	25.719	9640.5984
4	4.89	Bromide	bMB	0.006	0.040	47.3122
5	5.48	NO3	BMB	0.020	0.107	28.3995
6	7.78	OPO4	BMB	0.006	0.021	74.9715
7	9.45	SO4	BMB	5.841	18.114	24983.4609
		TOTAL:		9.10	44.72	35116.95

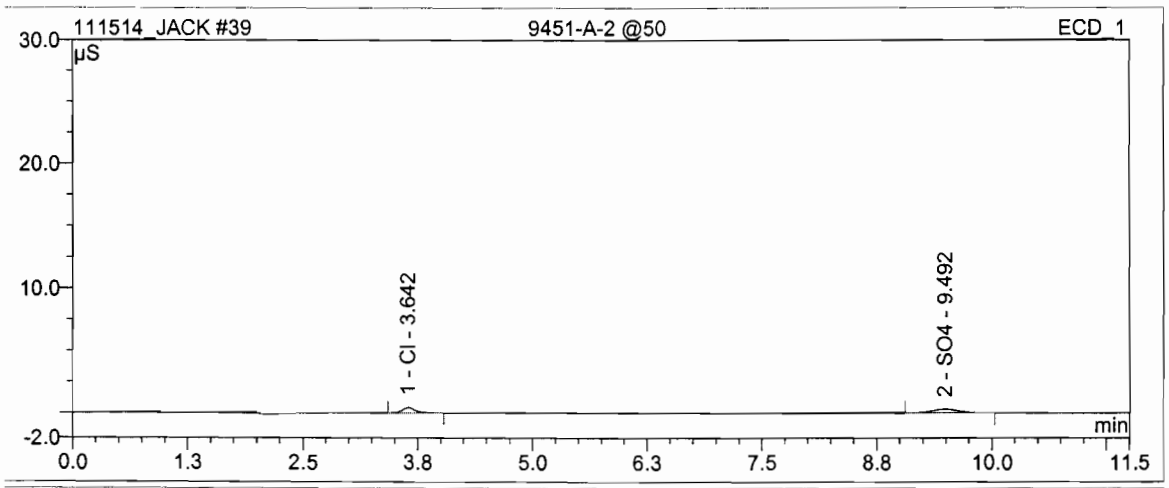


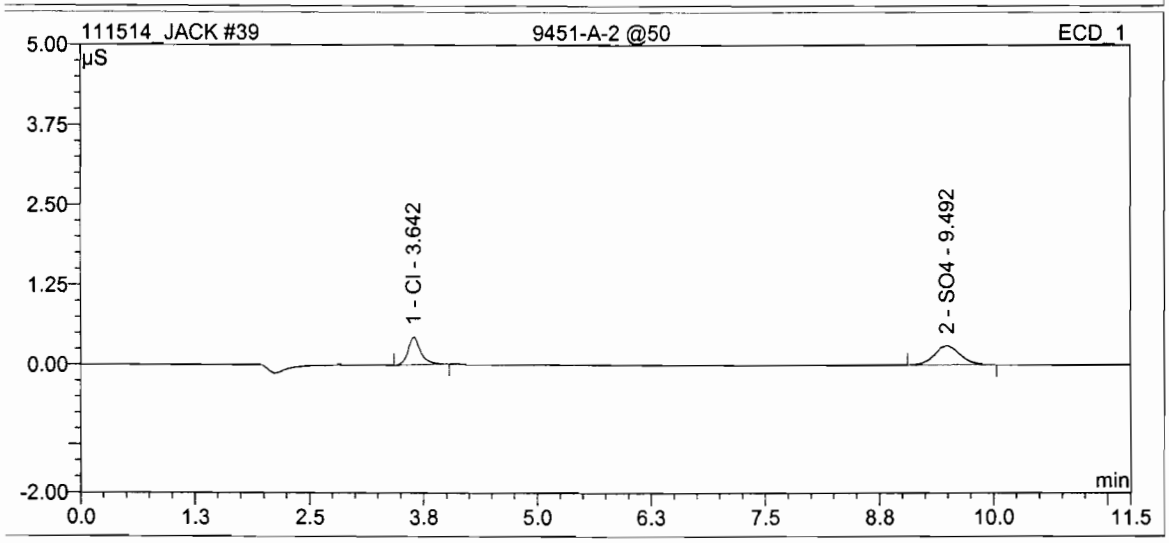


Integration Report - ECD_1

Sample Name:	**9451-A-2 @50**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 21:31**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	3.64	Cl	BMB	0.071	0.435	220.3568
2	9.49	SO4	BMB	0.099	0.297	424.5550
		TOTAL:		0.17	0.73	644.91

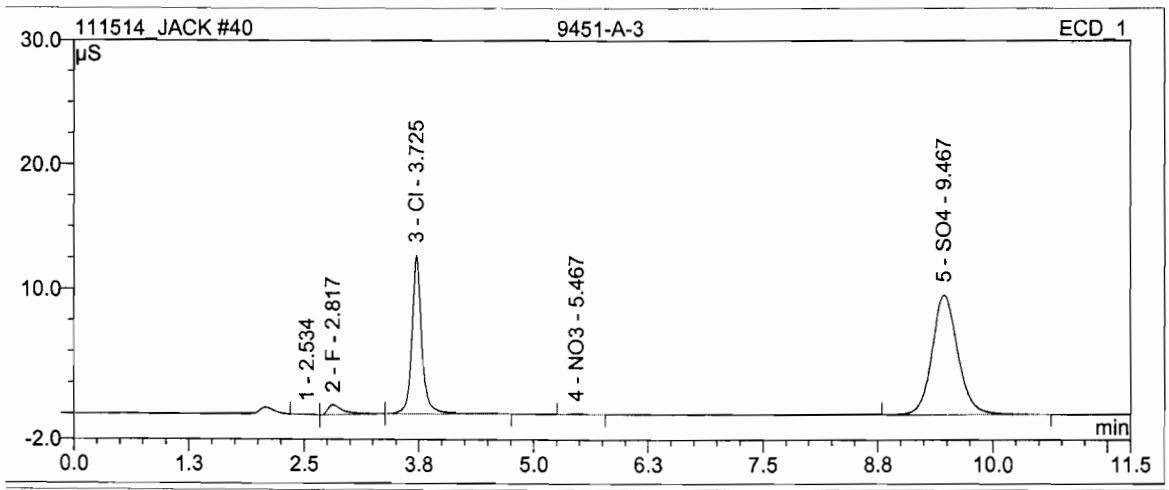


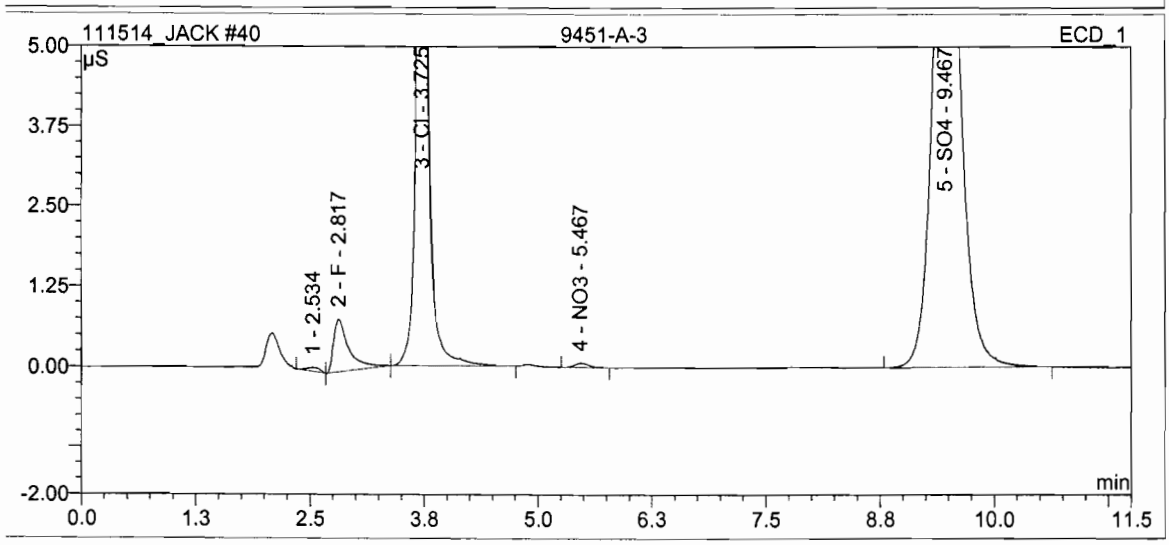


Integration Report - ECD_1

Sample Name:	**9451-A-3**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 21:45**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
2	2.82	F	bMB	0.159	0.815	381.9983
3	3.73	Cl	bMB	1.596	12.737	4988.4033
4	5.47	NO3	BMB	0.012	0.067	17.3078
5	9.47	SO4	BMB	3.133	9.581	13399.2359
		TOTAL:		4.90	23.20	18786.95

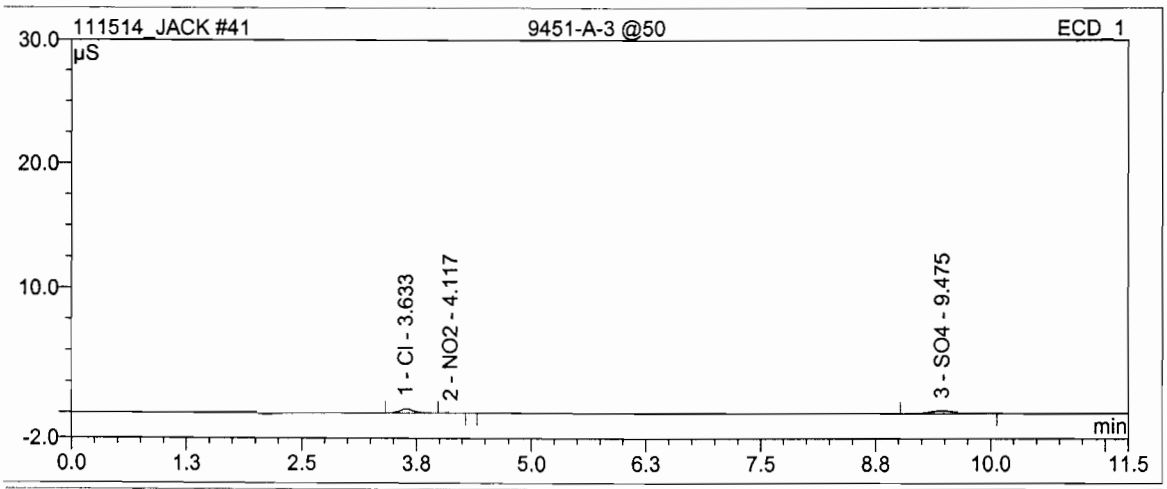


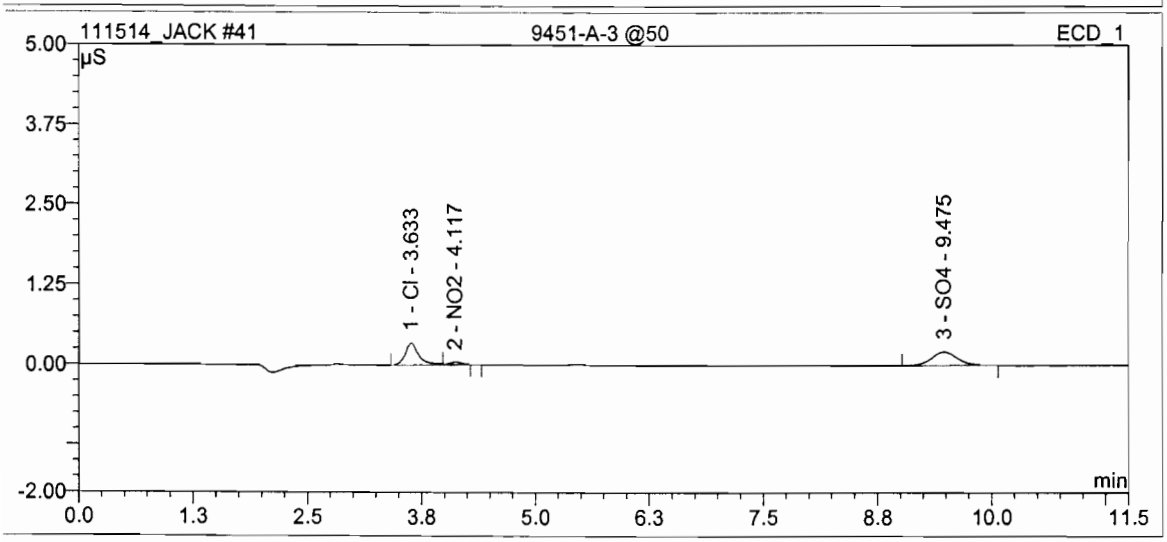


Integration Report - ECD_1

Sample Name:	**9451-A-3 @50**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 21:59**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	3.63	Cl	BMB	0.066	0.346	207.2651
2	4.12	NO2	Rd	0.005	0.033	7.3456
3	9.48	SO4	BMB	0.072	0.214	307.3050
		TOTAL:		0.14	0.59	521.92

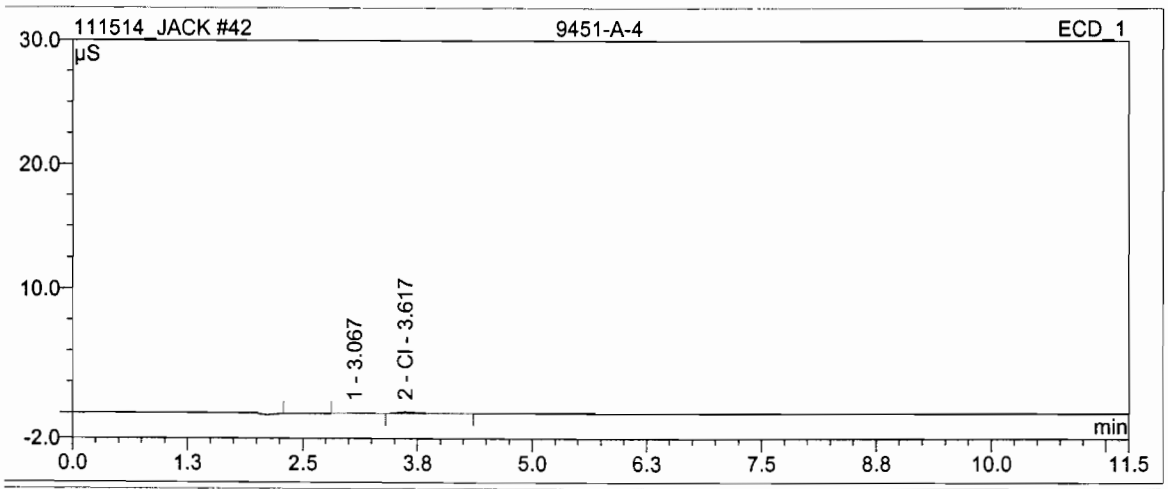


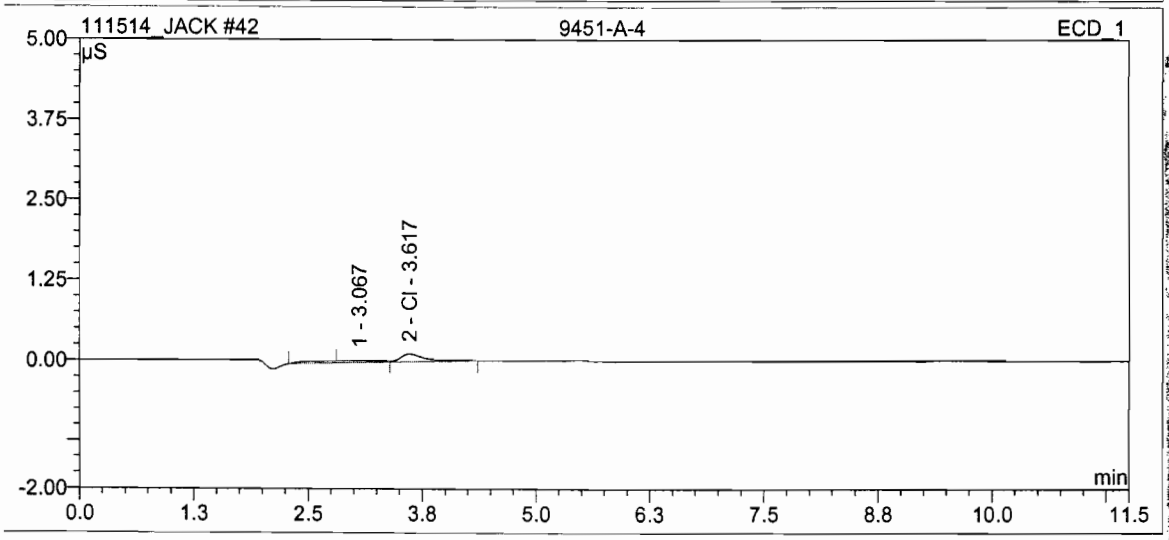


Integration Report - ECD_1

Sample Name:	**9451-A-4**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 22:13**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
2	3.62	Cl	BMB	0.067	0.121	210.2153
		TOTAL:		0.07	0.12	210.22



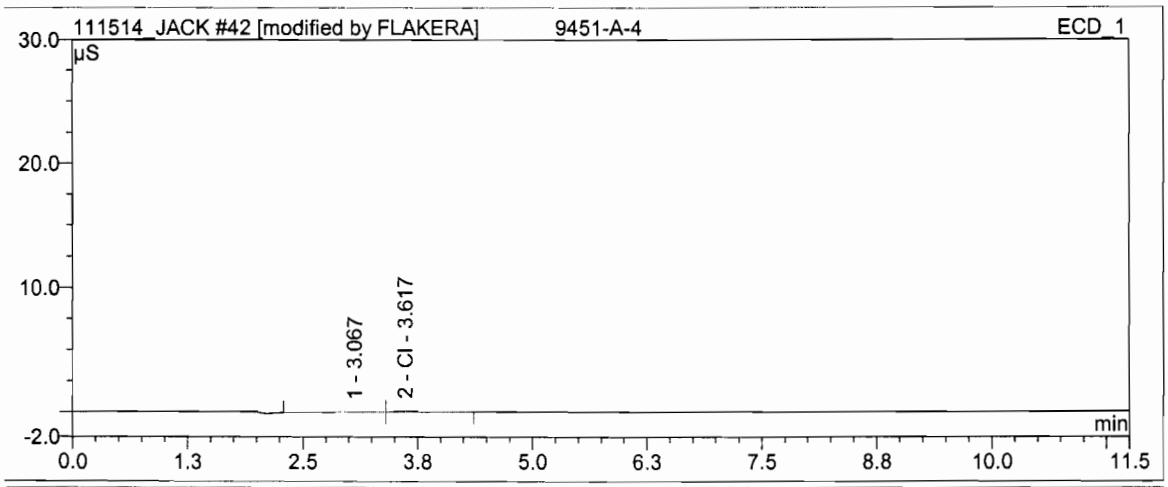


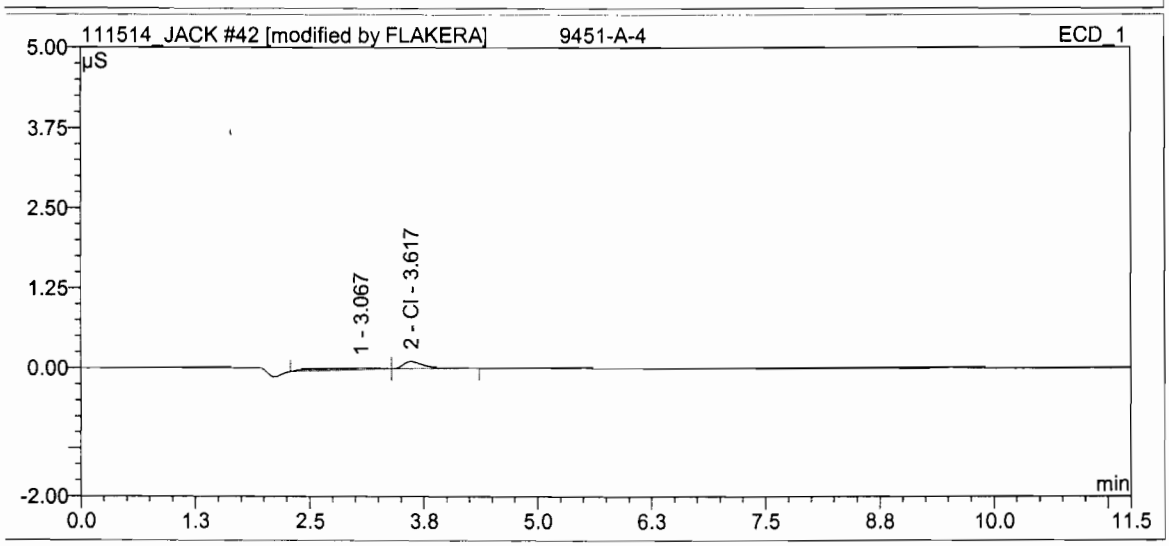
MI #F 11-21-14

Integration Report - ECD_1

Sample Name:	**9451-A-4**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 22:13**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
2	3.62	Cl	bMB*	0.031	0.109	98.0325
		TOTAL:		0.03	0.11	98.03

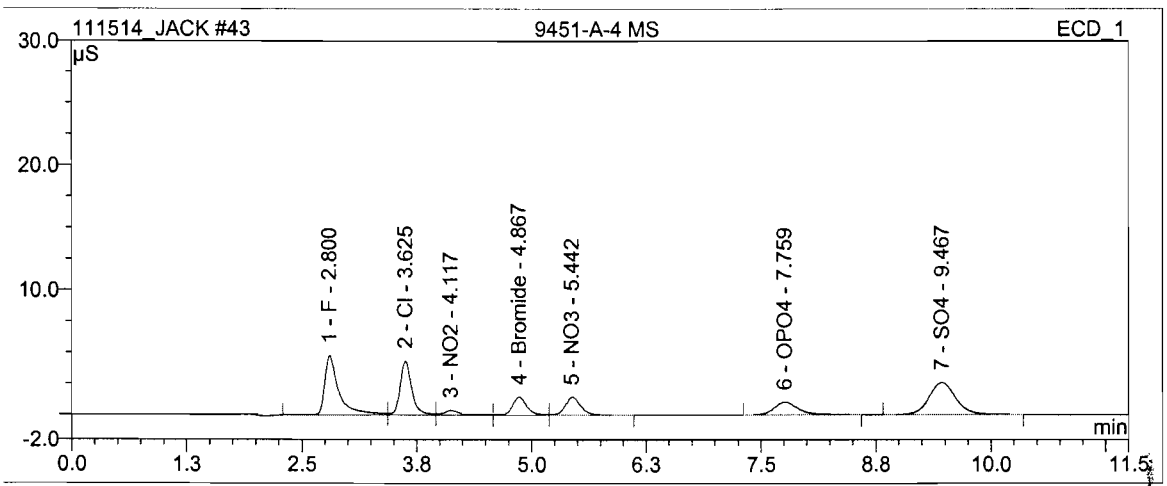


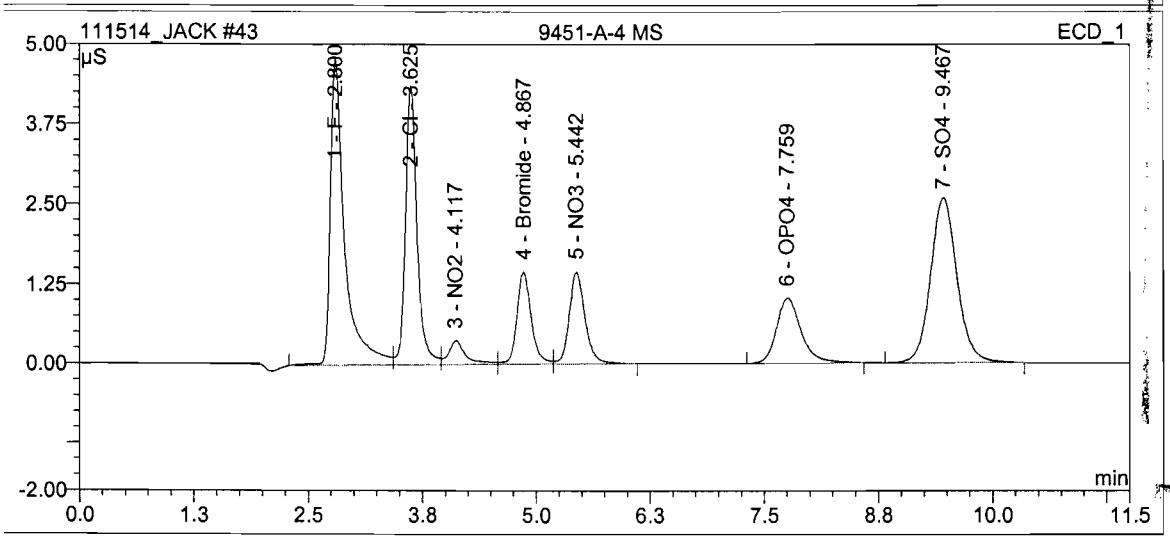


Integration Report - ECD_1

Sample Name:	**9451-A-4 MS**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 22:27**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BM	0.875	4.784	2107.1693
2	3.63	Cl	M	0.643	4.352	2008.5731
3	4.12	NO2	M	0.084	0.380	134.1785
4	4.87	Bromide	M	0.266	1.454	2079.0423
5	5.44	NO3	MB	0.294	1.449	412.4325
6	7.76	OPO4	BMB	0.323	1.030	3747.4825
7	9.47	SO4	BMB	0.873	2.581	3731.8833
		TOTAL:		3.36	16.03	14220.76





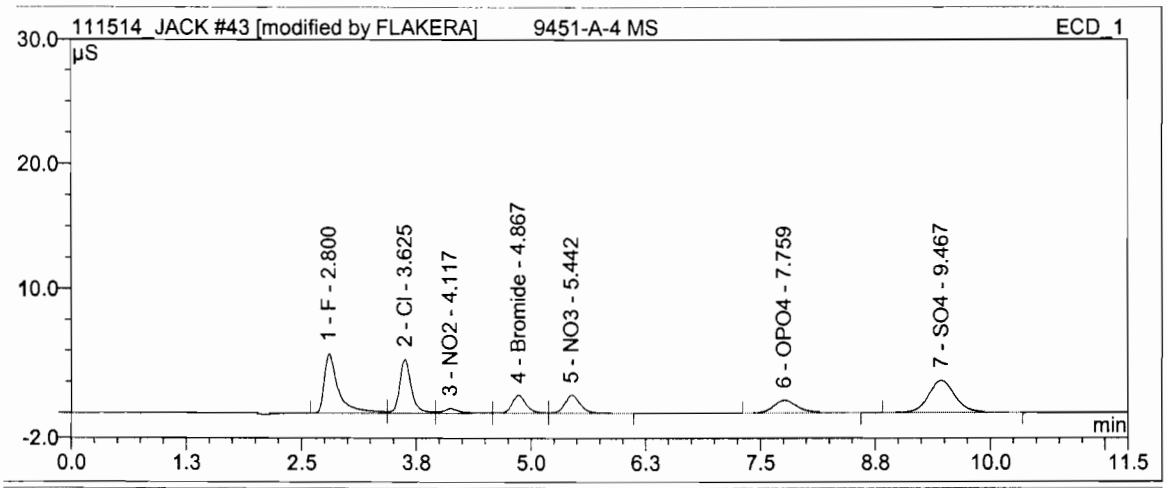
LI 4F 11-21-14

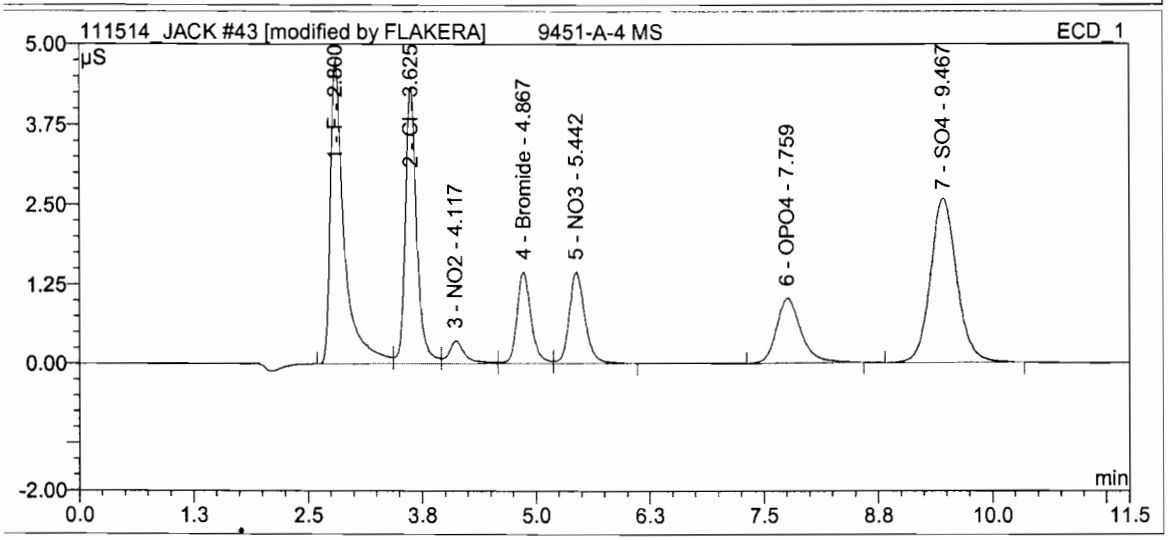
all but OPO4, SO4

Integration Report - ECD_1

Sample Name:	**9451-A-4 MS**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 22:27**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BM *	0.849	4.759	2045.0732
2	3.63	Cl	M *	0.633	4.333	1978.1685
3	4.12	NO2	M *	0.075	0.365	120.0686
4	4.87	Bromide	M *	0.261	1.444	2034.3727
5	5.44	NO3	MB*	0.290	1.444	407.8318
6	7.76	OPO4	BMB	0.323	1.030	3747.4825
7	9.47	SO4	BMB	0.873	2.581	3731.8833
		TOTAL:		3.30	15.96	14064.88

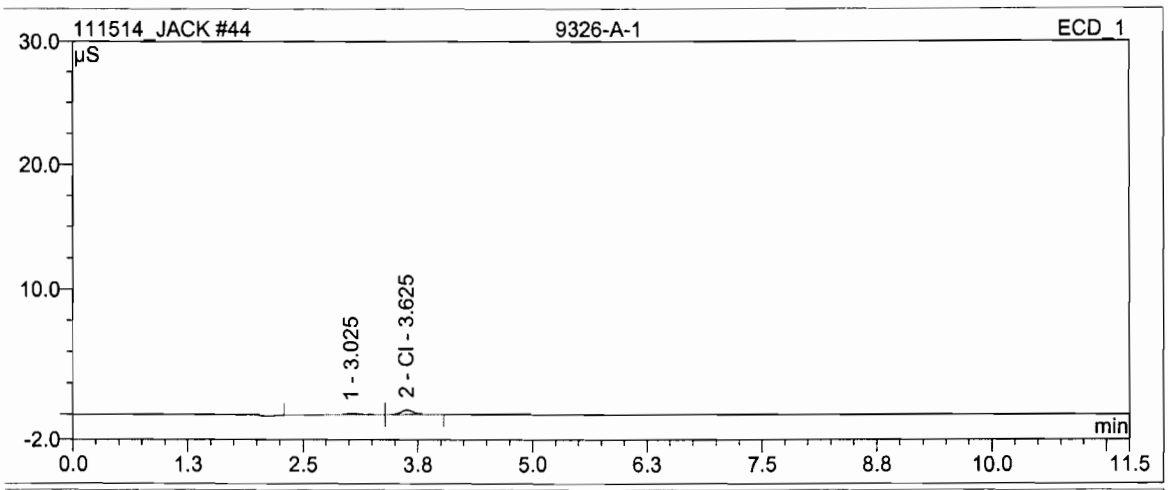


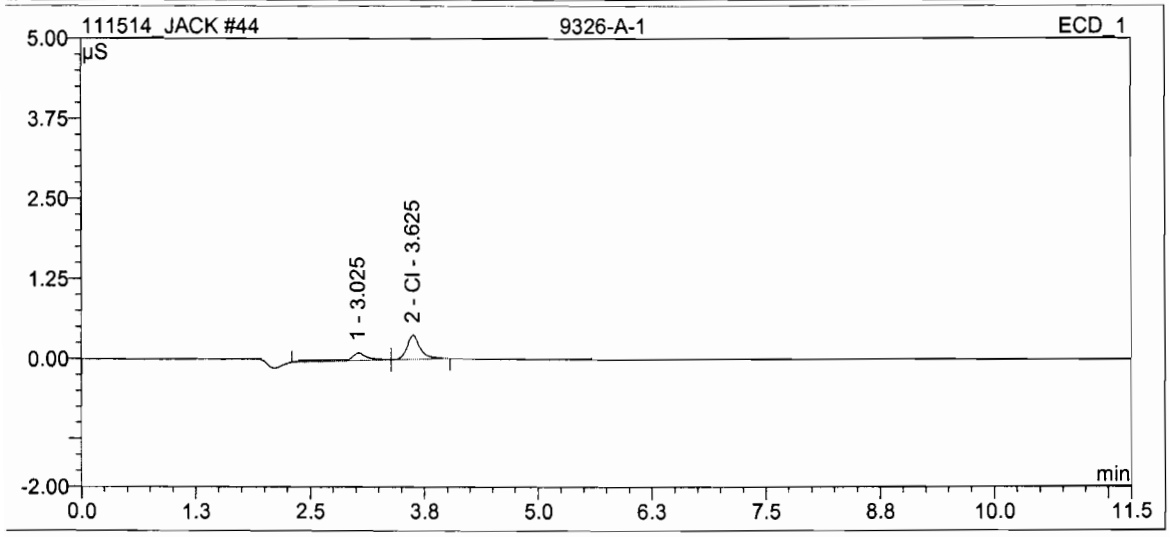


Integration Report - ECD_1

Sample Name:	**9326-A-1**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 22:41**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
2	3.63	Cl	MB	0.064	0.378	200.6718
		TOTAL:		0.06	0.38	200.67

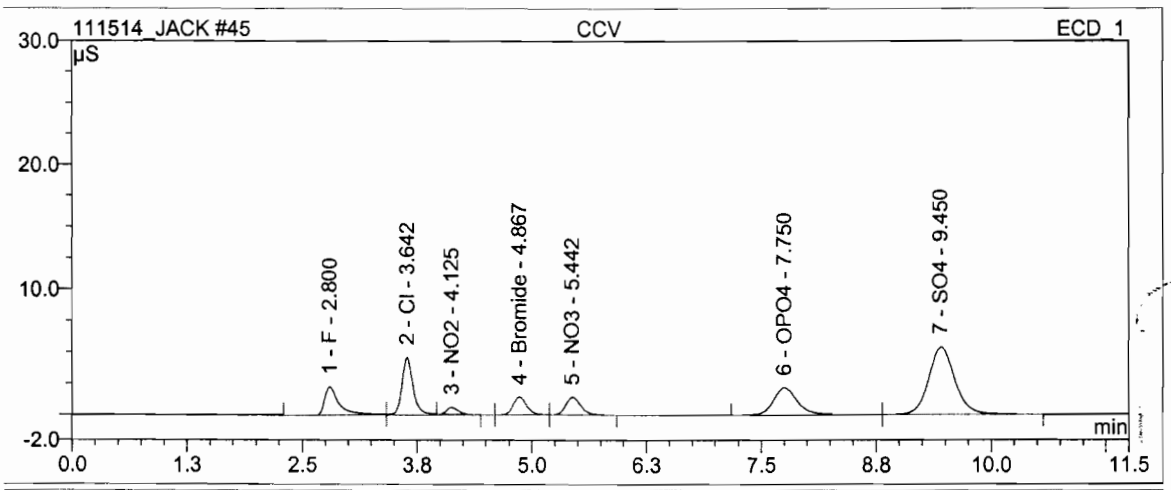


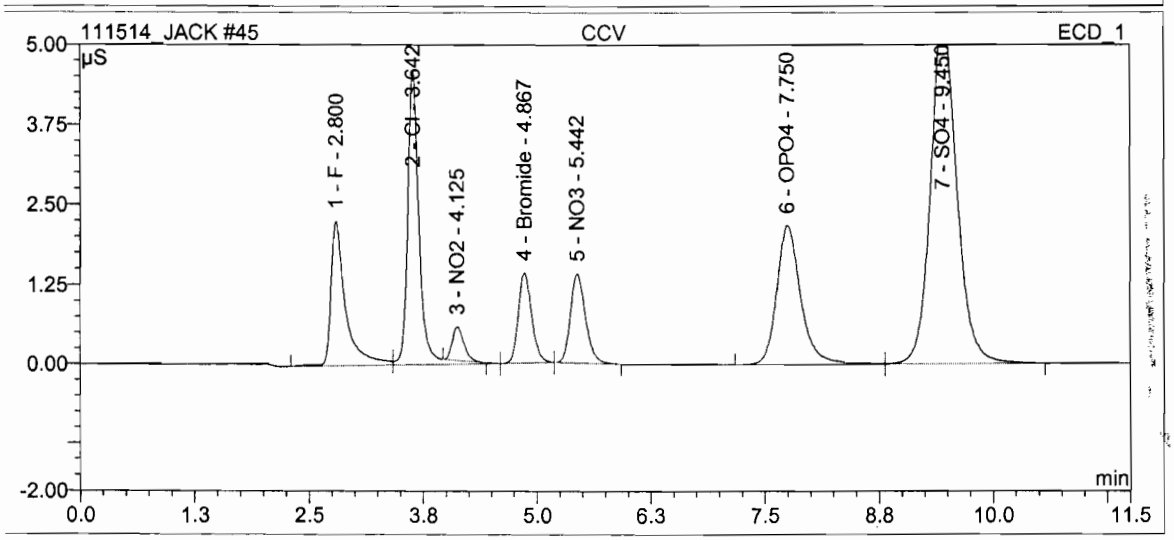


Integration Report - ECD_1

Sample Name:	**CCV**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 22:54**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BM	0.427	2.266	1028.6735
2	3.64	Cl	MB	0.676	4.596	2112.2273
3	4.13	NO2	Rd	0.079	0.532	126.7901
4	4.87	Bromide	bMb	0.242	1.422	1890.6069
5	5.44	NO3	bMB	0.271	1.404	380.2886
6	7.75	OPO4	BM	0.676	2.178	7837.6841
7	9.45	SO4	MB	1.795	5.382	7676.7246
		TOTAL:		4.17	17.78	21053.00



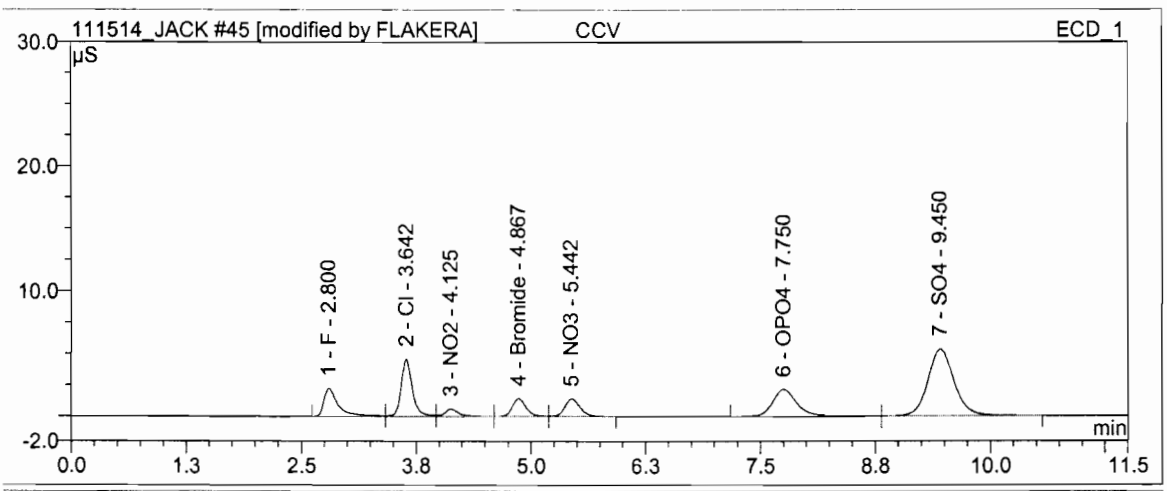


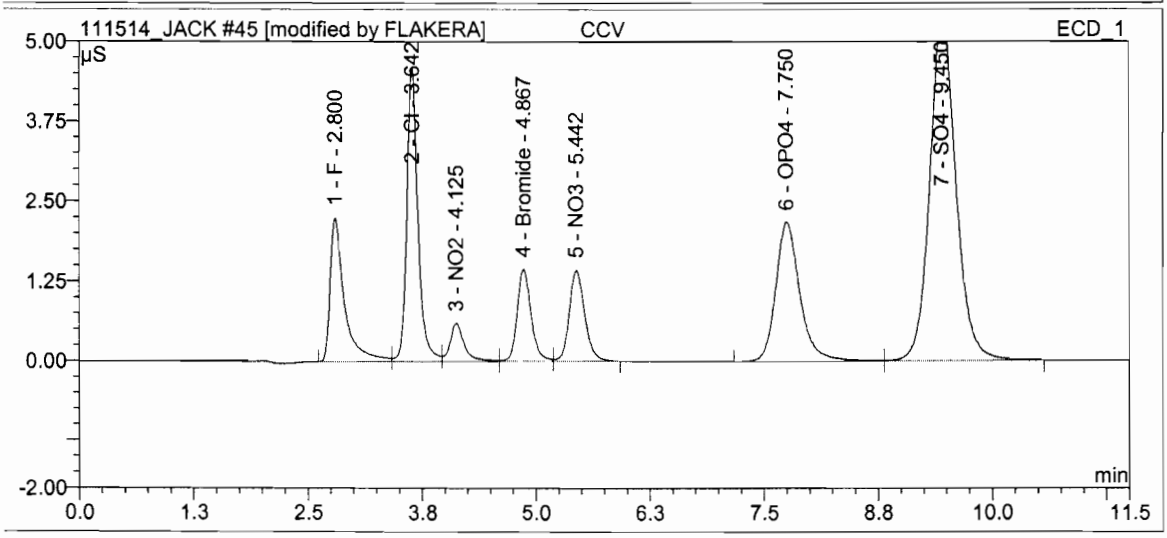
MI AF 11-21-14
all but OPO4, SO4

Integration Report - ECD_1

Sample Name:	**CCV**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 22:54**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BM *	0.411	2.248	989.6997
2	3.64	Cl	M *	0.651	4.593	2034.7797
3	4.13	NO2	M *	0.108	0.596	172.8950
4	4.87	Bromide	M *	0.255	1.444	1993.4318
5	5.44	NO3	MB*	0.282	1.424	395.9814
6	7.75	OPO4	BM	0.676	2.178	7837.6841
7	9.45	SO4	MB	1.795	5.382	7676.7246
		TOTAL:		4.18	17.86	21101.20

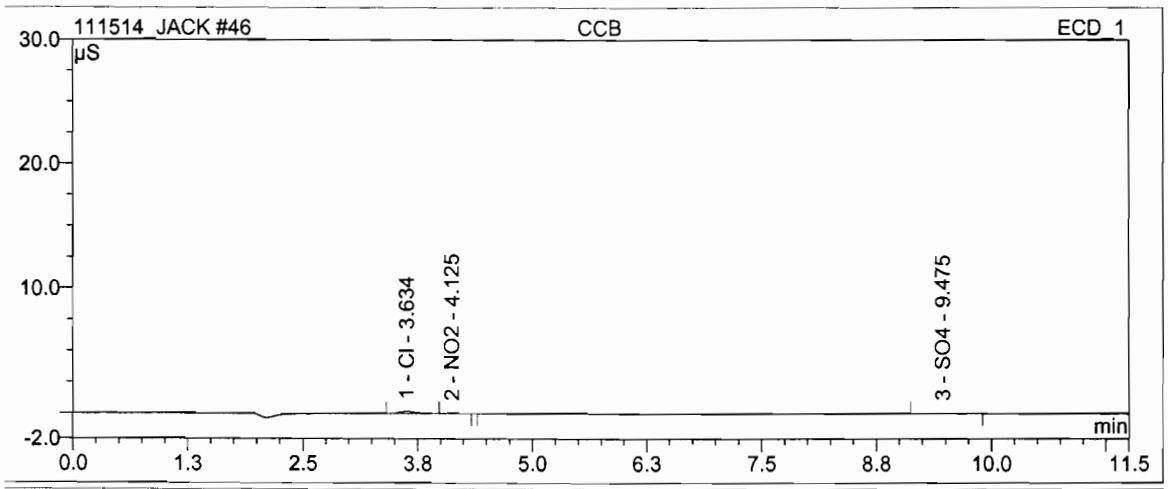


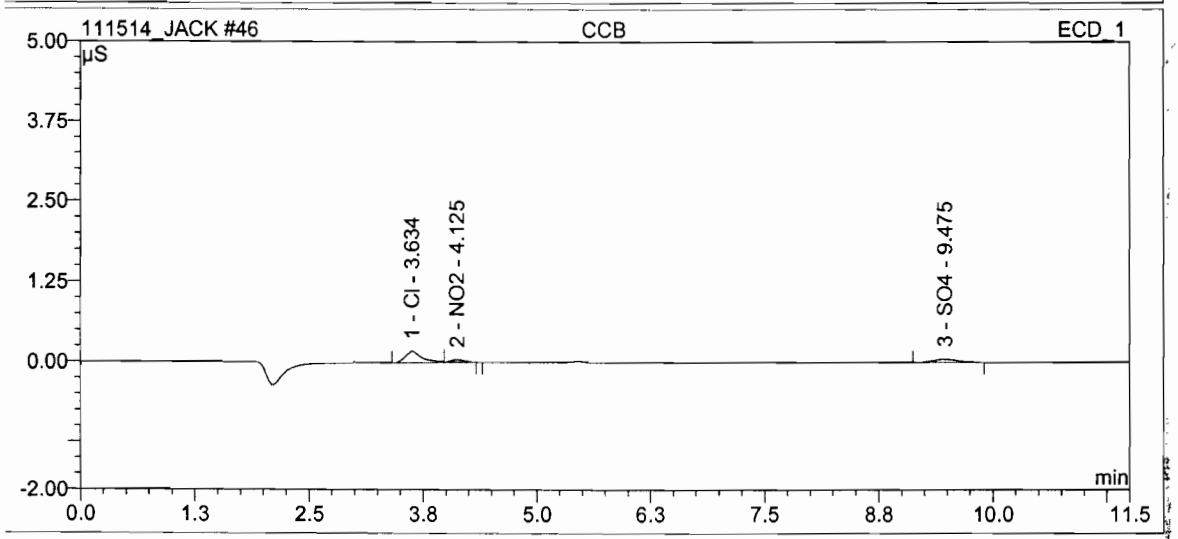


Integration Report - ECD_1

Sample Name:	**CCB**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 23:08**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	3.63	Cl	BMB	0.043	0.179	135.5265
2	4.13	NO2	Rd	0.005	0.035	8.4719
3	9.48	SO4	BMB	0.016	0.051	69.9504
		TOTAL:		0.07	0.27	213.95





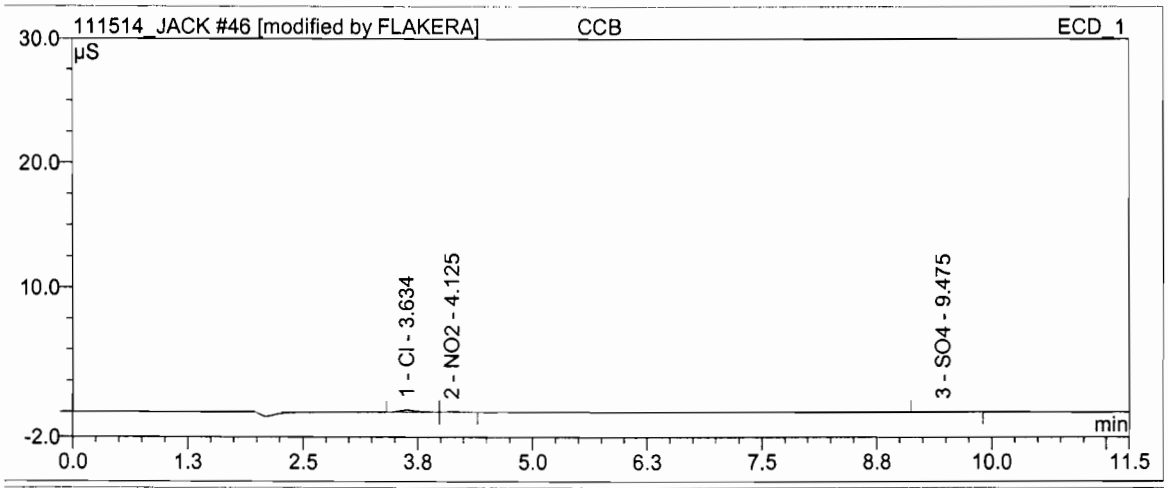
MI AF 11-21-14

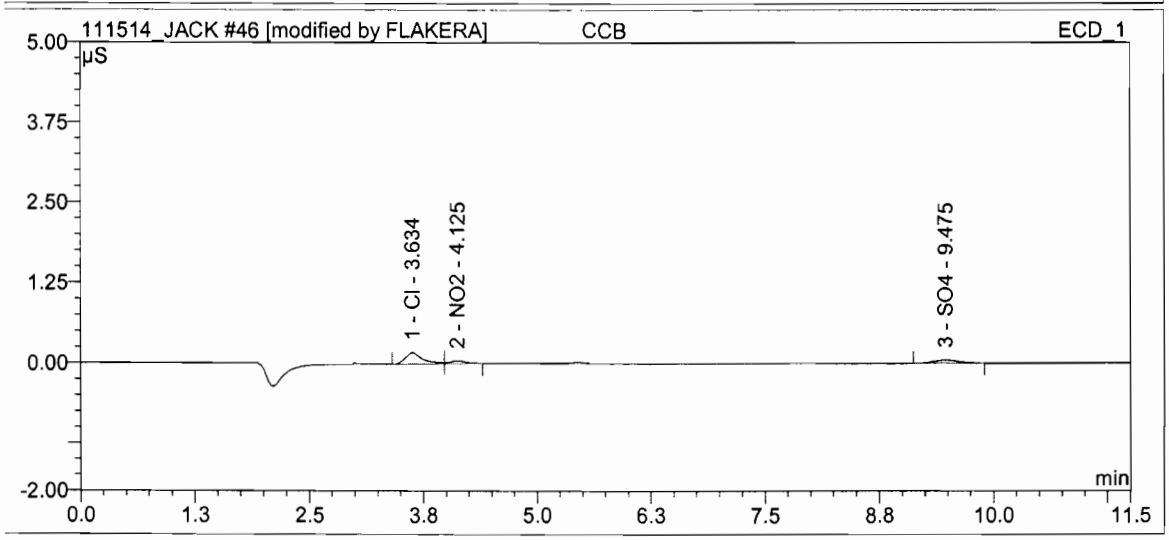
Cl, NO2

Integration Report - ECD_1

Sample Name:	**CCB**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 23:08**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	3.63	Cl	BM *	0.040	0.179	123.9344
2	4.13	NO2	MB*	0.009	0.047	14.3997
3	9.48	SO4	BMB	0.016	0.051	69.9504
		TOTAL:		0.07	0.28	208.28





Integration Report - ECD_1

Sample Name:	**END**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SHUTDOWN**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 23:22**	*Run Time:*	**n.a.**

n.a.	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**
n.a.	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**
n.a.	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**
		TOTAL:		0.00	0.00	0.00

111514_JACK #47 END ECD_1

Can't open raw data file "C:\Chromel\data\JACK\SEQUENCES\14NOV\111514_JACK.SEQ\ECD_1.CHL\7643.acd".
The system cannot find the file specified.

111514_JACK #47 END ECD_1

Can't open raw data file "C:\Chromel\data\JACK\SEQUENCES\14NOV\111514_JACK.SEQ\ECD_1.CHL\7643.acd".
The system cannot find the file specified.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Batch Number: 158800 Batch Start Date: 11/21/14 14:46 Batch Analyst: Trickle, Brittany A

Batch Method: 310.1 Batch End Date: 11/22/14 12:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	Initial pH	BuretStart1	BuretStop1	TitrantVolume1	BuretStart2
MB 160-158800/1		310.1		200 mL	7.45 SU	0 mL	0 mL	0 mL	0 mL
LCS 160-158800/2		310.1		50 mL	9.89 SU	0 mL	0 mL	0 mL	0 mL
HLCS 160-158800/3		310.1		50 mL	10.04 SU	0 mL	0 mL	0 mL	0 mL
160-9438-H-1	MW358-20141113-21	310.1	T	50 mL	7.25 SU	0 mL	0 mL	0 mL	0 mL
160-9438-H-1 DU	MW358-20141113-21	310.1	T	50 mL	7.22 SU	0 mL	0 mL	0 mL	0 mL
160-9438-H-1 MS	MW358-20141113-21	310.1	T	50 mL	7.58 SU	0 mL	0 mL	0 mL	0 mL
160-9438-H-2	MW359-20141113-21	310.1	T	50 mL	7.70 SU	0 mL	0 mL	0 mL	0 mL

Lab Sample ID	Client Sample ID	Method Chain	Basis	BuretStop2	TitrantVolume2	CalcMsg	carb	hydr	bCarb
MB 160-158800/1		310.1		.25 mL	0.25 mL	Case 1	0 mg/L	0 mg/L	5 mg/L
LCS 160-158800/2		310.1		9.3 mL	9.3 mL	Case 1	0 mg/L	0 mg/L	186 mg/L
HLCS 160-158800/3		310.1		18.7 mL	18.7 mL	Case 1	0 mg/L	0 mg/L	374 mg/L
160-9438-H-1	MW358-20141113-21	310.1	T	8.2 mL	8.2 mL	Case 1	0 mg/L	0 mg/L	164 mg/L
160-9438-H-1 DU	MW358-20141113-21	310.1	T	8.3 mL	8.3 mL	Case 1	0 mg/L	0 mg/L	166 mg/L
160-9438-H-1 MS	MW358-20141113-21	310.1	T	12.4 mL	12.4 mL	Case 1	0 mg/L	0 mg/L	248 mg/L
160-9438-H-2	MW359-20141113-21	310.1	T	9.8 mL	9.8 mL	Case 1	0 mg/L	0 mg/L	196 mg/L

Lab Sample ID	Client Sample ID	Method Chain	Basis	pAlk	tAlk	FinalAmount	Alk Int. 00009		
MB 160-158800/1		310.1		0 mg/L	5 mg/L	50 mL			
LCS 160-158800/2		310.1		0 mg/L	186 mg/L	50 mL	10 mL		
HLCS 160-158800/3		310.1		0 mg/L	374 mg/L	50 mL	20 mL		
160-9438-H-1	MW358-20141113-21	310.1	T	0 mg/L	164 mg/L	50 mL			
160-9438-H-1 DU	MW358-20141113-21	310.1	T	0 mg/L	166 mg/L	50 mL			

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Batch Number: 158800 Batch Start Date: 11/21/14 14:46 Batch Analyst: Trickle, Brittany A

Batch Method: 310.1 Batch End Date: 11/22/14 12:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	pAlk	tAlk	FinalAmount	Alk Int. 00009		
160-9438-H-1 MS	MW358-20141113-21	310.1	T	0 mg/L	248 mg/L	50 mL	5 mL		
160-9438-H-2	MW359-20141113-21	310.1	T	0 mg/L	196 mg/L	50 mL			

Batch Notes	
pH Buffer 1 ID	457799
pH Buffer 2 ID	455802
pH Buffer 3 ID	455801
First End time	11/22/14 12:00
Nominal Amount Used	50 mL
Probe ID	5 Star #4
First Start time	11/21/14 14:00
Normality of first Titrant	.02 N

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Batch Number: 157000 Batch Start Date: 11/14/14 11:45 Batch Analyst: Minier, Mark F

Batch Method: 150.1 Batch End Date: 11/14/14 12:05

Lab Sample ID	Client Sample ID	Method Chain	Basis	FinalAmount	SampleTemp	pHRead1	TempRead1	pHRead2	TempRead2
ICV 160-157000/4		150.1		20 mL	23.0 Celsius	7.02 SU	23.0 Celsius	7.02 SU	23.0 Celsius
LCS 160-157000/5		150.1		20 mL	23.0 Celsius	7.01 SU	23.0 Celsius	7.01 SU	23.0 Celsius
160-9438-A-2	MW359-20141113-21	150.1	T	20 mL	23.0 Celsius	7.21 SU	23.0 Celsius	7.20 SU	23.0 Celsius
160-9438-A-2 DU	MW359-20141113-21	150.1	T	20 mL	23.0 Celsius	7.23 SU	23.0 Celsius	7.22 SU	23.2 Celsius
160-9438-A-1	MW358-20141113-21	150.1	T	20 mL	23.2 Celsius	7.24 SU	23.2 Celsius	7.24 SU	23.2 Celsius
CCV 160-157000/9		150.1		20 mL	23.0 Celsius	7.04 SU	23.2 Celsius	7.03 SU	23.2 Celsius

Lab Sample ID	Client Sample ID	Method Chain	Basis	CalcMsg	PH Buffer 7 00046				
ICV 160-157000/4		150.1		Read 2 Pass	20 mL				
LCS 160-157000/5		150.1		Read 2 Pass	20 mL				
160-9438-A-2	MW359-20141113-21	150.1	T	Read 2 Pass					
160-9438-A-2 DU	MW359-20141113-21	150.1	T	Read 2 Pass					
160-9438-A-1	MW358-20141113-21	150.1	T	Read 2 Pass					
CCV 160-157000/9		150.1		Read 2 Pass	20 mL				

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Batch Number: 157000 Batch Start Date: 11/14/14 11:45 Batch Analyst: Minier, Mark F

Batch Method: 150.1 Batch End Date: 11/14/14 12:05

Batch Notes	
pH Buffer 1 ID	442694
pH Buffer 2 ID	442695
pH Buffer 3 ID	383521
pH Buffer 4 ID	358781
Calibration Date and Time	11/14/14 11:45
Electronic Slope	99.9
Instrument ID	A111
Pipette ID	TCLP #5
Sufficient volume for sample dup	yes
ID number of the thermometer	Orion pH probe

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Batch Number: 158738 Batch Start Date: 11/20/14 16:00 Batch Analyst: Trickle, Brittany A

Batch Method: 160.1 Batch End Date: 11/22/14 10:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	TareWeight	Weight1	Weight2	Weight3	WeightOne%Diff
MB 160-158738/1		160.1		100 mL	82.3287 g	82.3289 g	82.3289 g	0 g	PASS_D
LCS 160-158738/2		160.1		100 mL	89.7364 g	89.7873 g	89.7875 g	0 g	PASS_D
160-9438-H-1	MW358-20141113-21	160.1	T	100 mL	84.1928 g	84.5488 g	84.5487 g	0 g	PASS_D
160-9438-H-1 DU	MW358-20141113-21	160.1	T	100 mL	85.9921 g	86.3451 g	86.3450 g	0 g	PASS_D
160-9438-H-2	MW359-20141113-21	160.1	T	100 mL	88.7413 g	89.2001 g	89.1999 g	0 g	PASS_D

Lab Sample ID	Client Sample ID	Method Chain	Basis	Residue	Residue2	FinalAmount	TDS LCS 00036		
MB 160-158738/1		160.1		0.00020 g	0.00020 g	100 mL			
LCS 160-158738/2		160.1		0.05090 g	0.05110 g	100 mL	100 mL		
160-9438-H-1	MW358-20141113-21	160.1	T	0.35600 g	0.35590 g	100 mL			
160-9438-H-1 DU	MW358-20141113-21	160.1	T	0.35300 g	0.35290 g	100 mL			
160-9438-H-2	MW359-20141113-21	160.1	T	0.45880 g	0.45860 g	100 mL			

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Batch Number: 158738 Batch Start Date: 11/20/14 16:00 Batch Analyst: Trickle, Brittany A

Batch Method: 160.1 Batch End Date: 11/22/14 10:00

Batch Notes	
Balance ID	1123051741
Constant Weight (WT2) Date/Time in Oven	11/22/14 8:00
Constant Weight (WT2) Date/Time Out	11/22/14 10:00
Constant Weight (WT2) Temp In	183 Celsius
Constant Weight (WT2) Temp Out	183 Celsius
Uncorrected CW (Wt2) Temp In	183 Celsius
Uncorrected CW (Wt2) Temp Out	183 Celsius
Corrected Temperature in Oven	105 Celsius
Corrected Temperature out of Oven	105 Celsius
Date/Time Samples placed in Oven	11/20/14 16:00
Date/Time Samples removed from Oven	11/21/14 9:00
Nominal Amount Used	100 mL
Oven ID	4;1
Oven Temperature Verification	105 Celsius
ID number of the thermometer	0817; 0666
Uncorrected In Temperature	105 Celsius
Uncorrected Out Temperature	105 Celsius
Weight(WT1) Start Date/Time	11/21/14 9:00
Weight(WT1) Date/Time Out	11/22/14 6:00
Weight(WT1) Start Temp	183 Celsius
Weight(WT1) Temp Out	183 Celsius
Uncorrected Weight(WT1) Start Temp	183 Celsius
Uncorrected Weight(WT1) Temp Out	183 Celsius

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Batch Number: 158759 Batch Start Date: 11/15/14 12:42 Batch Analyst: Flaker, Alicia M

Batch Method: 300.0 Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	IC 2nd Source 00007	IC Cal High 00031		
ICV 160-158759/1		300.0		5 mL	5 mL	2 mL			
ICB 160-158759/2		300.0		5 mL	5 mL				
MB 160-158759/3		300.0		5 mL	5 mL				
LCS 160-158759/4		300.0		5 mL	5 mL		2 mL		
CCV 160-158759/13		300.0		5 mL	5 mL		2 mL		
CCB 160-158759/14		300.0		5 mL	5 mL				
CCV 160-158759/25		300.0		5 mL	5 mL		2 mL		
CCB 160-158759/26		300.0		5 mL	5 mL				
160-9438-H-1 ^100	MW358-20141113-21	300.0	T	5 mL	5 mL				
160-9438-H-1 ^500	MW358-20141113-21	300.0	T	5 mL	5 mL				
160-9438-H-2 ^20	MW359-20141113-21	300.0	T	5 mL	5 mL				
160-9438-H-2 ^500	MW359-20141113-21	300.0	T	5 mL	5 mL				
CCV 160-158759/36		300.0		5 mL	5 mL		2 mL		
CCB 160-158759/37		300.0		5 mL	5 mL				
CCV 160-158759/45		300.0		5 mL	5 mL		2 mL		
CCB 160-158759/46		300.0		5 mL	5 mL				

Batch Notes	
Balance ID	1123051741
Eluent 1 Lot	494955
Pipette ID	IC-3, IC-5, WC001

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Batch Number: 158759 Batch Start Date: 11/15/14 12:42 Batch Analyst: Flaker, Alicia M

Batch Method: 300.0 Batch End Date:

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Batch Number: 158944 Batch Start Date: 11/14/14 08:58 Batch Analyst: Flaker, Alicia M

Batch Method: 300.0 Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	IC 2nd Source 00007	IC Cal High 00032		
ICV 160-158944/7		300.0		5 mL	5 mL	2 mL			
ICB 160-158944/8		300.0		5 mL	5 mL				
MB 160-158944/9		300.0		5 mL	5 mL				
LCS 160-158944/10		300.0		5 mL	5 mL		2 mL		
CCV 160-158944/21		300.0		5 mL	5 mL		2 mL		
CCB 160-158944/22		300.0		5 mL	5 mL				
CCV 160-158944/33		300.0		5 mL	5 mL		2 mL		
CCB 160-158944/34		300.0		5 mL	5 mL				
160-9438-H-1	MW358-20141113-21	300.0	T	5 mL	5 mL				
160-9438-H-2	MW359-20141113-21	300.0	T	5 mL	5 mL				
CCV 160-158944/45		300.0		5 mL	5 mL		2 mL		
CCB 160-158944/46		300.0		5 mL	5 mL				
CCV 160-158944/57		300.0		5 mL	5 mL		2 mL		
CCB 160-158944/58		300.0		5 mL	5 mL				

Batch Notes	
Balance ID	1123051741
Eluent 1 Lot	494955
Pipette ID	IC-3, IC-5, WC001

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

ALPHA SPECTROSCOPY

Method A-01-R Th

Isotopic Thorium (Alpha Spectrometry) by Method A-01-R

Prep Batch: 158130

Preparation, Extraction Chromatography Resin Actinide Separation

Alpha Spectroscopy Analysis Detail Report
Prep Batch: 158130

Lab ID: MB 160-158130/1-A
Client ID:
Sigma: 2
Analyzed: 11/23/14 22:34
Detector: AV165
Dil Fac: 1
Decay Corrected: No
Yield Truncated: No
Ts: 400

Analyte	MB Result	Count Unc	Total Unc	Qualifier	Unit	RL	MDC	Anly Batch
Thorium-228	0.05362	0.0852	0.0853	U	pCi/L	1.00	0.148	159070
Thorium-230	0.2173	0.0971	0.0988		pCi/L	1.00	0.0583	159070
Thorium-232	0.001750	0.0244	0.0244	U	pCi/L	1.00	0.0691	159070
Thorium-227	0.01052	0.0820	0.0820	U	pCi/L	1.00	0.162	159070

Tracer	MB Result	Count Unc	Total Unc	Qualifier	Unit	MDC	Spike Added	% Rec	% Rec Limits
Thorium-229	9.765	0.577	1.00		pCi/L	0.0255	12.1	80.6	30 - 110

Lab ID: LCS 160-158130/2-A
Client ID:
Sigma: 2
Analyzed: 11/23/14 22:34
Detector: AV168
Dil Fac: 1
Decay Corrected: No
Yield Truncated: No
Ts: 400

Analyte	LCS Result	Count Unc	Total Unc	Qualifier	Unit	RL	MDC	Anly Batch
Thorium-230	7.990	0.571	0.881		pCi/L	1.00	0.0307	159071

Tracer	LCS Result	Count Unc	Total Unc	Qualifier	Unit	MDC	Spike Added	% Rec	% Rec Limits
Thorium-229	10.18	0.592	1.04		pCi/L	0.0743	12.1	84.0	30 - 110

Lab ID: 160-9438-1
Client ID: MW358-20141113-21
Sigma: 2
Analyzed: 11/24/14 19:53
Detector: AV149
Dil Fac: 1
Decay Corrected: No
Yield Truncated: No
Ts: 400

Analyte	Result	Count Unc	Total Unc	Qualifier	Unit	RL	MDC	Anly Batch
Thorium-228	0.147	0.360	0.360	U	pCi/L	1.00	0.668	159622
Thorium-230	0.790	0.395	0.401		pCi/L	1.00	0.263	159622
Thorium-232	0.0949	0.134	0.134	U	pCi/L	1.00	0.142	159622
Thorium-227	0.150	0.321	0.322	U	pCi/L	1.00	0.592	159622

Tracer	Result	Count Unc	Total Unc	Qualifier	Unit	MDC	Spike Added	% Rec	% Rec Limits
Thorium-229	55.6	3.13	5.62		pCi/L	0.290	60.1	92.5	30 - 110

Lab ID: 160-9438-1 DU
Client ID: MW358-20141113-21
Sigma: 2
Analyzed: 11/24/14 19:53
Detector: AV150
Dil Fac: 1
Decay Corrected: No
Yield Truncated: No
Ts: 400

Analyte	DU Result	Count Unc	Total Unc	Qualifier	Unit	RL	MDC	Anly Batch
Thorium-228	0.1869	0.401	0.401	U	pCi/L	1.00	0.729	159623
Thorium-230	0.6887	0.421	0.425		pCi/L	1.00	0.469	159623

Alpha Spectroscopy Analysis Detail Report
Prep Batch: 158130

Lab ID: 160-9438-1 DU
Client ID: MW358-20141113-21
Sigma: 2
Analyzed: 11/24/14 19:53
Detector: AV150
Dil Fac: 1
Decay Corrected: No
Yield Truncated: No
Ts: 400

Analyte	DU Result	Count Unc	Total Unc	Qualifier	Unit	RL	MDC	Anly Batch
Thorium-232	0.01692	0.167	0.167	U	pCi/L	1.00	0.409	159623
Thorium-227	0.1738	0.320	0.321	U	pCi/L	1.00	0.579	159623

Tracer	DU Result	Count Unc	Total Unc	Qualifier	Unit	MDC	Spike Added	% Rec	% Rec Limits
Thorium-229	49.99	2.93	5.12		pCi/L	0.453	59.6	83.8	30 - 110

Lab ID: 160-9438-2
Client ID: MW359-20141113-21
Sigma: 2
Analyzed: 11/23/14 22:34
Detector: AV173
Dil Fac: 1
Decay Corrected: No
Yield Truncated: No
Ts: 400

Analyte	Result	Count Unc	Total Unc	Qualifier	Unit	RL	MDC	Anly Batch
Thorium-228	0.591	0.430	0.433		pCi/L	1.00	0.579	159074
Thorium-230	1.00	0.469	0.477		pCi/L	1.00	0.397	159074
Thorium-232	0.127	0.175	0.175	U	pCi/L	1.00	0.271	159074
Thorium-227	-0.00818	0.235	0.235	U	pCi/L	1.00	0.540	159074

Tracer	Result	Count Unc	Total Unc	Qualifier	Unit	MDC	Spike Added	% Rec	% Rec Limits
Thorium-229	52.5	3.00	5.33		pCi/L	0.237	60.3	87.1	30 - 110

Quality Control Summary

Method Blank ID:	Analyte	Parent Result	Spike Added	MB Result	Qualifier	Unit	% Rec	% Rec Limits	RPD	RER	DER	RER Limit	Z Factor
MB 160-158130/1-A	Thorium-228			0.05362	U	pCi/L							
MB 160-158130/1-A	Thorium-230			0.2173		pCi/L							
MB 160-158130/1-A	Thorium-232			0.001750	U	pCi/L							
MB 160-158130/1-A	Thorium-227			0.01052	U	pCi/L							

Lab Control Sample ID:	Analyte	Parent Result	Spike Added	LCS Result	Qualifier	Unit	% Rec	% Rec Limits	RPD	RER	DER	RER Limit	Z Factor
LCS 160-158130/2-A	Thorium-230		8.03	7.990		pCi/L	100	81 - 125					

Duplicate ID:	Analyte	Parent Result	Spike Added	DU Result	Qualifier	Unit	% Rec	% Rec Limits	RPD	RER	DER	RER Limit	Z Factor
160-9438-1	Thorium-228	0.147		0.1869	U	pCi/L			24	0.05	0.15	1	
160-9438-1	Thorium-230	0.790		0.6887		pCi/L			14	0.12	0.35	1	
160-9438-1	Thorium-232	0.0949		0.01692	U	pCi/L			139	0.26	0.73	1	
160-9438-1	Thorium-227	0.150		0.1738	U	pCi/L			14	0.04	0.10	1	

Glossary:

Ts = Count Duration, Sample

ALPHA SPECTROSCOPY BATCH WORKSHEET

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Batch Number: 158130 Batch Start Date: 11/19/14 11:12 Batch Analyst: Bernsen, Sarah C

Batch Method: ExtChrom Batch End Date: 11/21/14 08:48

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	Th-229 00018	Th-230 00025			
MB 160-158130/1		ExtChrom, A-01-R		500 mL	0.2 mL				
LCS 160-158130/2		ExtChrom, A-01-R		500 mL	0.2 mL	0.2 mL			
160-9438-B-1	MW358-20141113-21	ExtChrom, A-01-R	T	100.70 mL	0.2 mL				
160-9438-B-1 DU	MW358-20141113-21	ExtChrom, A-01-R	T	101.57 mL	0.2 mL				
160-9438-B-2	MW359-20141113-21	ExtChrom, A-01-R	T	100.47 mL	0.2 mL				

Batch Notes	
Balance ID	1125353055
Column Analyst	nmn per scb
Column Date	11/20/14
CoPrecipitation Analyst	mfm per scb
CoPrecipitation Date	11/21/14
Person's name who witnessed reagent drop	nmn per scb
Analyst who added reagent	scb
SOP Number	ST-RC-0100, ST-RC-0242

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:52:18PM 12/1/2014

Sample

Sample Name: MB 160-158130/1-A Type: Blank
Spectrum #1 Analysis #1
: MB 160-158130/1-A
Sample Collection Date: 11/19/2014 11:29:00AM
Comment:

Sample Volume : 0.50 Sample Units: L
First Stage Dilution: N/A
Aliquot: N/A Aliquot Fraction: N/A
Dilution 2: N/A
Lab Preparation:

Batch

Batch Name: 158130
:
Description:

Client Name: Undefined
Client Contact:
Analyst: 60040

Tracer

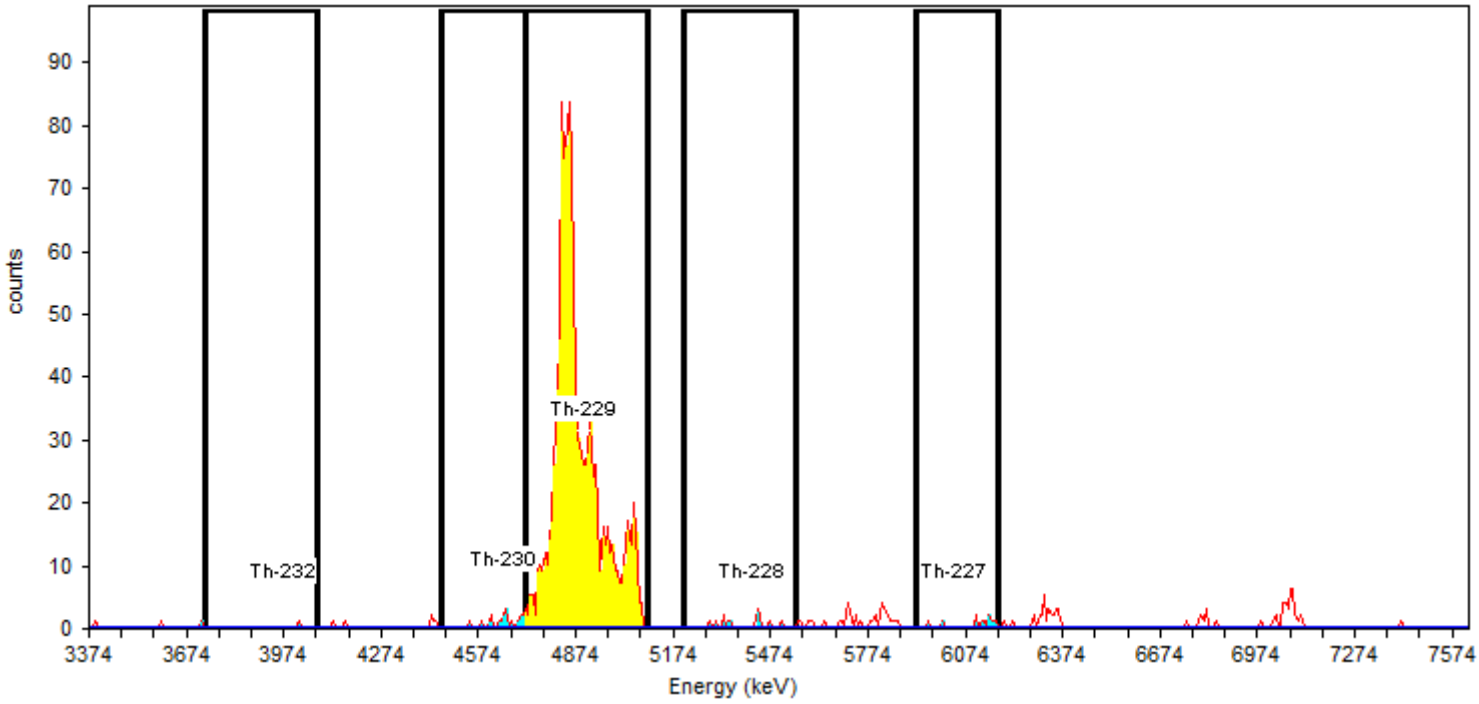
Tracer Name: Th-229_00018
Tracer Activity: 67.23 DPM / mL x (Vol.) 0.20 mL = 13.45 DPM
Tracer Ref. Date: 8/6/2014 4:36:53PM

Tracer Nuclide: Th-229
Tracer Recovery: 80.62%

Acquisition

Detector: AV165 SN: 50-112F7
Acquisition Start Date: 11/23/2014 10:34:19PM
Live Time: 400.00 min.
Real Time: 400.01 min.
Background Date: 11/18/2014 12:05:44AM
Bkgd Info: Sample: ICB;AV165; Det: AV165; Spectrum #1; 11/18/2014 12:05:44 AM

Energy Calibration: IC-8877;AV165-20140706
Efficiency Calibration:IC-8877;AV165-20140706
Calibration Date: 7/8/2014 5:48:08PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 26.55% +/- 0.32% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = ThoriumROI_Th227
Decay Correction:11/23/2014 10:32:30PM
MDA Constants: Kα = 1.64 , Kβ = 1.64

Nuclide Library: Thorium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
Th-232	3971.0	4,010.0	-39.0	3724.9	4075.4	44.5	100.2	1	0.8333	0.17	1.750E-003	pCi/L
Th-230	4649.7	4,687.5	-37.8	4455.8	4716.8	3.8	99.7	21	0.4167	20.58	2.173E-001	pCi/L
Th-229	4895.8	4,845.3	50.5	4716.8	5097.1	65.0	99.6	1147	0.0000	1147.00	9.766E+000	pCi/L
Th-228	5417.8	5,423.3	-5.5	5209.0	5552.0	145.0	99.8	13	7.9167	5.08	5.362E-002	pCi/L

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:52:23PM 12/1/2014

Sample

Sample Name: LCS 160-158130/2-A Type: Control
Spectrum #1 Analysis #1
: LCS 160-158130/2-A
Sample Collection Date: 11/19/2014 11:29:00AM
Comment:

Sample Volume : 0.50 Sample Units: L
First Stage Dilution: N/A
Aliquot: N/A Aliquot Fraction: N/A
Dilution 2: N/A
Lab Preparation:

Batch

Batch Name: 158130
:
Description:

Client Name: Undefined
Client Contact:
Analyst: 60040

Tracer

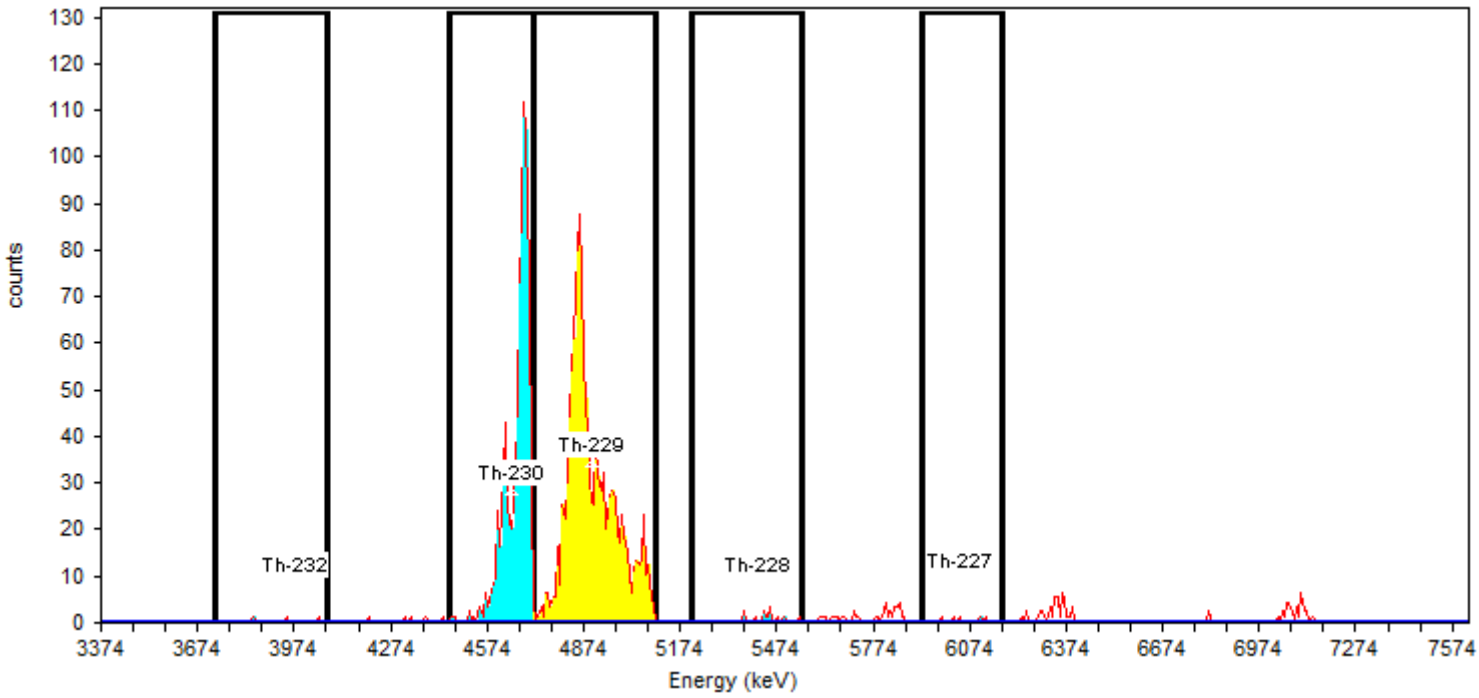
Tracer Name: Th-229_00018
Tracer Activity: 67.23 DPM / mL x (Vol.) 0.20 mL = 13.45 DPM
Tracer Ref. Date: 8/6/2014 4:36:53PM

Tracer Nuclide: Th-229
Tracer Recovery: 84.01%

Acquisition

Detector: AV168 SN: 50-113 G4
Acquisition Start Date: 11/23/2014 10:34:19PM
Live Time: 400.00 min.
Real Time: 400.00 min.
Background Date: 11/18/2014 12:05:45AM
Bkgd Info: Sample: ICB;AV168; Det: AV168; Spectrum #1; 11/18/2014 12:05:45 AM

Energy Calibration: IC-9793;AV168-20140706
Efficiency Calibration:IC-9793;AV168-20140706
Calibration Date: 7/6/2014 9:06:10PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 26.32% +/- 0.32% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = ThoriumROI_Th227
Decay Correction:11/23/2014 10:32:29PM
MDA Constants: Kα = 1.64 , Kβ = 1.64

Nuclide Library: Thorium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
Th-232	3971.0	4,010.0	-39.0	3724.9	4075.4	9.8	100.2	3	1.2500	1.75	1.779E-002	pCi/L
Th-230	4649.7	4,687.5	-37.8	4455.8	4716.8	31.1	99.7	782	0.0000	782.00	7.990E+000	pCi/L
Th-229	4895.8	4,845.3	50.5	4716.8	5097.1	64.9	99.6	1187	2.0833	1184.92	1.018E+001	pCi/L
Th-228	5417.8	5,423.3	-5.5	5209.0	5552.0	126.7	99.8	13	6.6667	6.33	6.467E-002	pCi/L

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:53:38PM 12/1/2014

Sample

Sample Name: 160-9438-B-1-A Type: Sample
Spectrum #2 Analysis #1
: 160-9438-B-1-A
Sample Collection Date: 11/13/2014 12:05:00PM
Comment:

Sample Volume : 0.10 Sample Units: L
First Stage Dilution: N/A
Aliquot: N/A Aliquot Fraction: N/A
Dilution 2: N/A
Lab Preparation:

Batch

Batch Name: 158130
:
Description:

Client Name: Undefined
Client Contact:
Analyst: 60040

Tracer

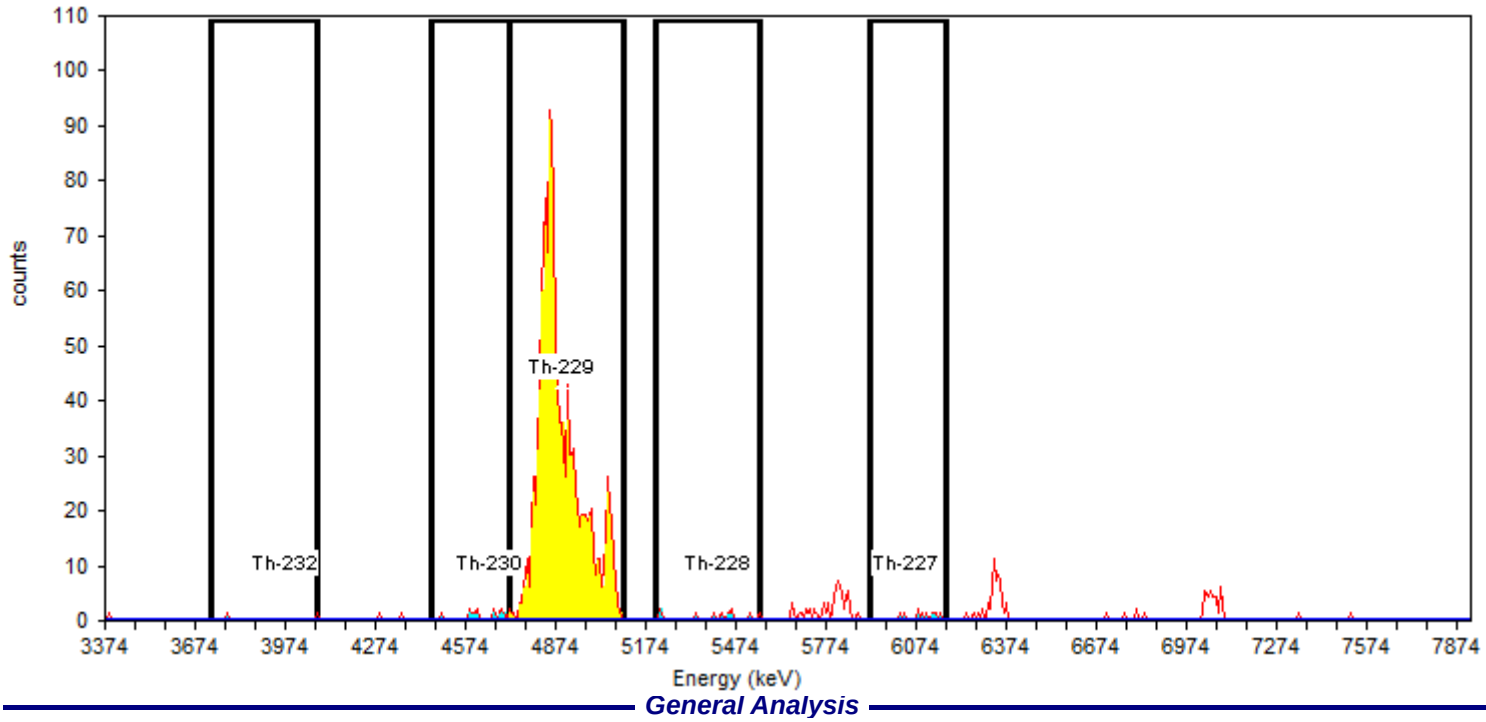
Tracer Name: Th-229_00018
Tracer Activity: 67.23 DPM / mL x (Vol.) 0.20 mL = 13.45 DPM
Tracer Ref. Date: 8/6/2014 4:36:53PM

Tracer Nuclide: Th-229
Tracer Recovery: 92.45%

Acquisition

Detector: AV149 SN: 50-05/R3
Acquisition Start Date: 11/24/2014 7:53:50PM
Live Time: 400.00 min.
Real Time: 400.00 min.
Background Date: 11/18/2014 12:05:48AM
Bkgd Info: Sample: ICB;AV149; Det: AV149; Spectrum #1; 11/18/2014 12:05:48 AM

Energy Calibration: IC-8875;AV149-20140709
Efficiency Calibration:IC-8875;AV149-20140709
Calibration Date: 7/8/2014 10:30:10PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 25.45% +/- 0.36% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = ThoriumROI_Th227
Decay Correction:11/23/2014 10:32:29PM
MDA Constants: Kα = 1.64 , Kβ = 1.64

Nuclide Library: Thorium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
Th-232	3971.0	4,010.0	-39.0	3724.9	4075.4	.3	100.2	2	0.0000	2.00	9.485E-002	pCi/L
Th-230	4649.7	4,687.5	-37.8	4455.8	4716.8	28.2	99.7	17	0.4167	16.58	7.904E-001	pCi/L
Th-229	4895.8	4,845.3	50.5	4716.8	5097.1	69.0	99.6	1262	0.8333	1261.17	5.561E+001	pCi/L
Th-228	5417.8	5,423.3	-5.5	5209.0	5552.0	332.0	99.8	11	7.9167	3.08	1.470E-001	pCi/L

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:53:33PM 12/1/2014

Sample

Sample Name: 160-9438-B-1-B DU Type: Sample
Spectrum #2 Analysis #1
: 160-9438-B-1-B DU
Sample Collection Date: 11/13/2014 12:05:00PM
Comment:

Sample Volume : 0.10 Sample Units: L
First Stage Dilution: N/A
Aliquot: N/A Aliquot Fraction: N/A
Dilution 2: N/A
Lab Preparation:

Batch

Batch Name: 158130
:
Description:

Client Name: Undefined
Client Contact:
Analyst: 60040

Tracer

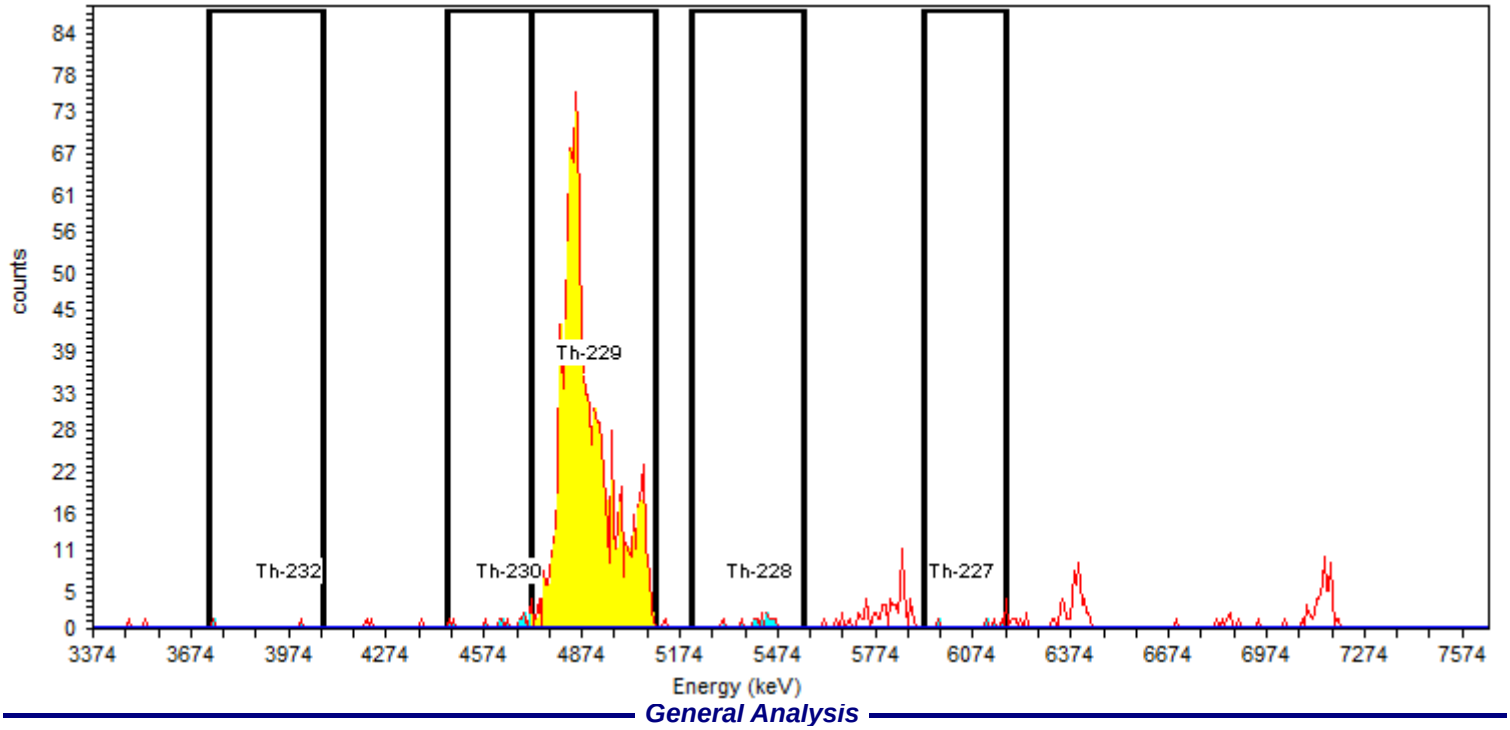
Tracer Name: Th-229_00018
Tracer Activity: 67.23 DPM / mL x (Vol.) 0.20 mL = 13.45 DPM
Tracer Ref. Date: 8/6/2014 4:36:53PM

Tracer Nuclide: Th-229
Tracer Recovery: 83.83%

Acquisition

Detector: AV150 SN: 50-05/R4
Acquisition Start Date: 11/24/2014 7:53:50PM
Live Time: 400.00 min.
Real Time: 400.01 min.
Background Date: 11/18/2014 5:54:37PM
Bkgd Info: Sample: ICB;AV150; Det: AV150; Spectrum #1; 11/18/2014 5:54:37 PM

Energy Calibration: IC-8876;AV150-20140709
Efficiency Calibration:IC-8876;AV150-20140709
Calibration Date: 7/8/2014 10:30:13PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 26.00% +/- 0.31% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = ThoriumROI_Th227
Decay Correction:11/23/2014 10:32:29PM
MDA Constants: Kα = 1.64 , Kβ = 1.64

Nuclide Library: Thorium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
Th-232	3971.0	4,010.0	-39.0	3724.9	4075.4	23.6	100.2	2	1.6667	0.33	1.692E-002	pCi/L
Th-230	4649.7	4,687.5	-37.8	4455.8	4716.8	.2	99.7	16	2.5000	13.50	6.887E-001	pCi/L
Th-229	4895.8	4,845.3	50.5	4716.8	5097.1	76.4	99.6	1172	3.7500	1168.25	4.999E+001	pCi/L
Th-228	5417.8	5,423.3	-5.5	5209.0	5552.0	63.9	99.8	12	8.3333	3.67	1.871E-001	pCi/L

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:53:30PM 12/1/2014

Sample

Sample Name: 160-9438-B-2-A Type: Sample
Spectrum #1 Analysis #1
: 160-9438-B-2-A
Sample Collection Date: 11/13/2014 1:45:00PM
Comment:

Sample Volume : 0.10 Sample Units: L
First Stage Dilution: N/A
Aliquot: N/A Aliquot Fraction: N/A
Dilution 2: N/A
Lab Preparation:

Batch

Batch Name: 158130
:
Description:

Client Name: Undefined
Client Contact:
Analyst: 60040

Tracer

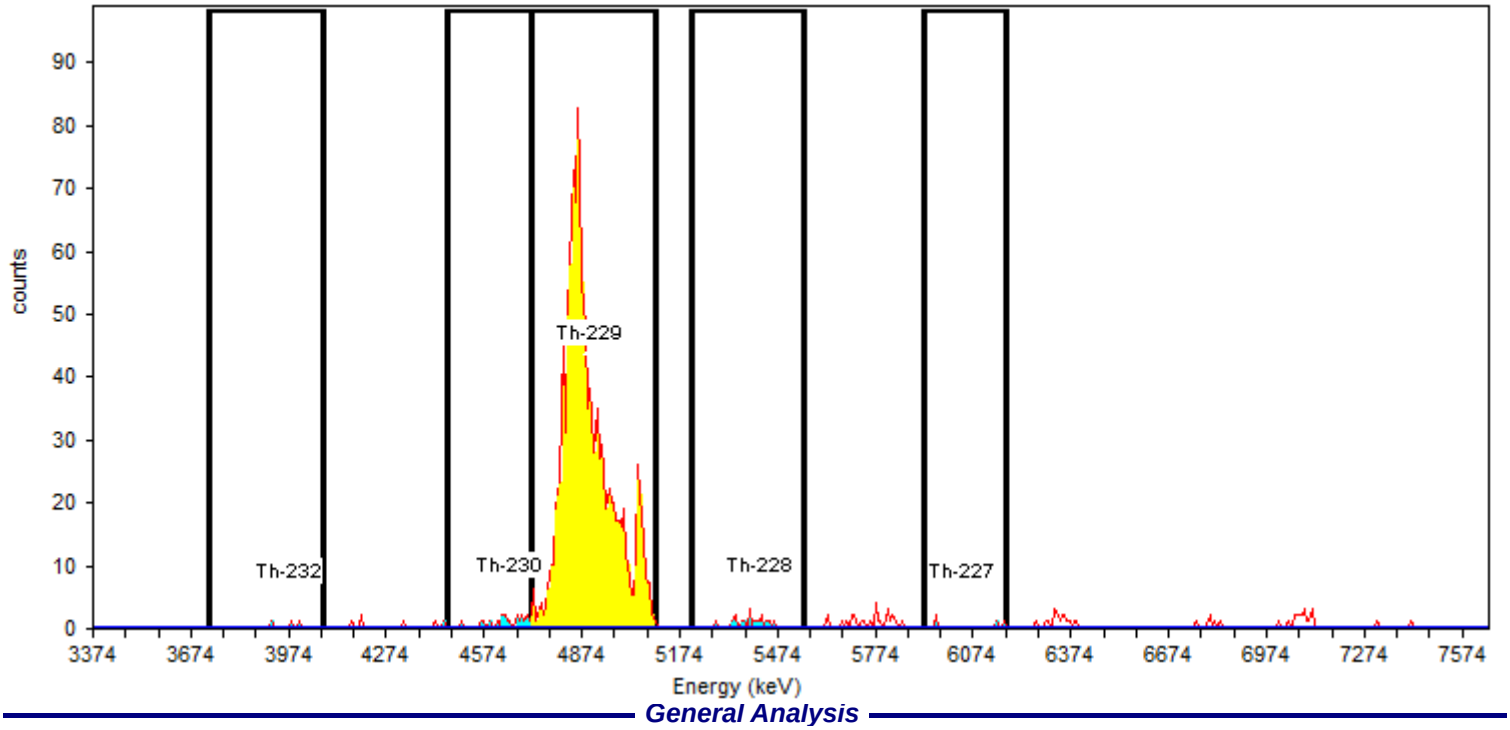
Tracer Name: Th-229_00018
Tracer Activity: 67.23 DPM / mL x (Vol.) 0.20 mL = 13.45 DPM
Tracer Ref. Date: 8/6/2014 4:36:53PM

Tracer Nuclide: Th-229
Tracer Recovery: 87.05%

Acquisition

Detector: AV173 SN: 50-112 Y4
Acquisition Start Date: 11/23/2014 10:34:20PM
Live Time: 400.00 min.
Real Time: 400.00 min.
Background Date: 11/18/2014 5:54:39PM
Bkgd Info: Sample: ICB;AV173; Det: AV173; Spectrum #1; 11/18/2014 5:54:39 PM

Energy Calibration: IC-9885;AV173-20140706
Efficiency Calibration:IC-9885;AV173-20140706
Calibration Date: 7/6/2014 9:06:28PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 26.23% +/- 0.38% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = ThoriumROI_Th227
Decay Correction:11/23/2014 10:32:29PM
MDA Constants: Kα = 1.64 , Kβ = 1.64

Nuclide Library: Thorium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
Th-232	3971.0	4,010.0	-39.0	3724.9	4075.4	102.3	100.2	3	0.4167	2.58	1.266E-001	pCi/L
Th-230	4649.7	4,687.5	-37.8	4455.8	4716.8	31.2	99.7	22	1.6667	20.33	1.001E+000	pCi/L
Th-229	4895.8	4,845.3	50.5	4716.8	5097.1	79.5	99.6	1224	0.4167	1223.58	5.248E+001	pCi/L
Th-228	5417.8	5,423.3	-5.5	5209.0	5552.0	114.1	99.8	17	5.0000	12.00	5.905E-001	pCi/L

Method A-01-R U

Isotopic Uranium (Alpha Spectrometry) by Method A-01-R

Prep Batch: 158134

Preparation, Extraction Chromatography Resin Actinide Separation

Alpha Spectroscopy Analysis Detail Report
Prep Batch: 158134

Lab ID: MB 160-158134/1-A
Client ID:
Sigma: 2
Analyzed: 11/21/14 16:13
Detector: AV181
Dil Fac: 1
Decay Corrected: No
Yield Truncated: No
Ts: 400

Analyte	MB Result	Count Unc	Total Unc	Qualifier	Unit	RL	MDC	Anly Batch
Uranium-233/234	0.03001	0.0347	0.0347		pCi/L	1.00	0.0300	158845
Uranium-235/236	-0.01556	0.0180	0.0180	U	pCi/L	1.00	0.0919	158845
Uranium-238	0.02330	0.0433	0.0433	U	pCi/L	1.00	0.0804	158845

Tracer	MB Result	Count Unc	Total Unc	Qualifier	Unit	MDC	Spike Added	% Rec	% Rec Limits
Uranium-232	12.37	0.653	1.23		pCi/L	0.0634	14.8	86.1	30 - 110

Lab ID: LCS 160-158134/2-A
Client ID:
Sigma: 2
Analyzed: 11/21/14 16:13
Detector: AV182
Dil Fac: 1
Decay Corrected: No
Yield Truncated: No
Ts: 400

Analyte	LCS Result	Count Unc	Total Unc	Qualifier	Unit	RL	MDC	Anly Batch
Uranium-233/234	13.50	0.801	1.39		pCi/L	1.00	0.0875	158846
Uranium-238	13.79	0.808	1.41		pCi/L	1.00	0.0654	158846

Tracer	LCS Result	Count Unc	Total Unc	Qualifier	Unit	MDC	Spike Added	% Rec	% Rec Limits
Uranium-232	10.46	0.602	1.06		pCi/L	0.0911	14.8	72.8	30 - 110

Lab ID: 160-9438-1
Client ID: MW358-20141113-21
Sigma: 2
Analyzed: 11/21/14 16:13
Detector: AV184
Dil Fac: 1
Decay Corrected: No
Yield Truncated: No
Ts: 400

Analyte	Result	Count Unc	Total Unc	Qualifier	Unit	RL	MDC	Anly Batch
Uranium-233/234	9.01	1.39	1.58		pCi/L	1.00	0.350	158847
Uranium-235/236	0.265	0.265	0.266		pCi/L	1.00	0.199	158847
Uranium-238	5.35	1.07	1.16		pCi/L	1.00	0.294	158847

Tracer	Result	Count Unc	Total Unc	Qualifier	Unit	MDC	Spike Added	% Rec	% Rec Limits
Uranium-232	56.8	3.11	5.70		pCi/L	0.389	73.6	79.7	30 - 110

Lab ID: 160-9438-1 DU
Client ID: MW358-20141113-21
Sigma: 2
Analyzed: 11/21/14 16:13
Detector: AV185
Dil Fac: 1
Decay Corrected: No
Yield Truncated: No
Ts: 400

Analyte	DU Result	Count Unc	Total Unc	Qualifier	Unit	RL	MDC	Anly Batch
Uranium-233/234	9.128	1.42	1.61		pCi/L	1.00	0.303	158848
Uranium-235/236	0.1193	0.256	0.256	U	pCi/L	1.00	0.503	158848
Uranium-238	4.658	1.02	1.09		pCi/L	1.00	0.360	158848

Alpha Spectroscopy Analysis Detail Report
Prep Batch: 158134

Lab ID: 160-9438-1 DU
Client ID: MW358-20141113-21
Sigma: 2
Analyzed: 11/21/14 16:13
Detector: AV185
Dil Fac: 1
Decay Corrected: No
Yield Truncated: No
Ts: 400

Tracer	DU Result	Count Unc	Total Unc	Qualifier	Unit	MDC	Spike Added	% Rec	% Rec Limits
Uranium-232	56.91	3.17	5.74		pCi/L	0.517	72.9	80.5	30 - 110

Lab ID: 160-9438-2
Client ID: MW359-20141113-21
Sigma: 2
Analyzed: 11/21/14 16:13
Detector: AV188
Dil Fac: 1
Decay Corrected: No
Yield Truncated: No
Ts: 400

Analyte	Result	Count Unc	Total Unc	Qualifier	Unit	RL	MDC	Anly Batch
Uranium-233/234	27.1	2.42	3.32		pCi/L	1.00	0.396	158849
Uranium-235/236	1.54	0.641	0.654		pCi/L	1.00	0.201	158849
Uranium-238	16.5	1.89	2.34		pCi/L	1.00	0.296	158849

Tracer	Result	Count Unc	Total Unc	Qualifier	Unit	MDC	Spike Added	% Rec	% Rec Limits
Uranium-232	57.6	3.16	5.77		pCi/L	0.396	73.7	80.5	30 - 110

Quality Control Summary

Method Blank ID:	Analyte	Parent Result	Spike Added	MB Result	Qualifier	Unit	% Rec	% Rec Limits	RPD	RER	DER	RER Limit	Z Factor
MB 160-158134/1-A	Uranium-233/234			0.03001		pCi/L							
MB 160-158134/1-A	Uranium-235/236			-0.01556	U	pCi/L							
MB 160-158134/1-A	Uranium-238			0.02330	U	pCi/L							

Lab Control Sample ID:	Analyte	Parent Result	Spike Added	LCS Result	Qualifier	Unit	% Rec	% Rec Limits	RPD	RER	DER	RER Limit	Z Factor
LCS 160-158134/2-A	Uranium-233/234		12.7	13.50		pCi/L	106	84 - 120					
LCS 160-158134/2-A	Uranium-238		13.0	13.79		pCi/L	106	83 - 121					

Duplicate ID:	Analyte	Parent Result	Spike Added	DU Result	Qualifier	Unit	% Rec	% Rec Limits	RPD	RER	DER	RER Limit	Z Factor
160-9438-1	Uranium-233/234	9.01		9.128		pCi/L			1	0.04	0.10	1	
160-9438-1	Uranium-235/236	0.265		0.1193	U	pCi/L			76	0.28	0.79	1	
160-9438-1	Uranium-238	5.35		4.658		pCi/L			14	0.31	0.87	1	

Glossary:

Ts = Count Duration, Sample

ALPHA SPECTROSCOPY BATCH WORKSHEET

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Batch Number: 158134 Batch Start Date: 11/19/14 11:22 Batch Analyst: Bernsen, Sarah C

Batch Method: ExtChrom Batch End Date: 11/21/14 08:54

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	U-232 00028	UNAT 00009			
MB 160-158134/1		ExtChrom, A-01-R		500 mL	0.2 mL				
LCS 160-158134/2		ExtChrom, A-01-R		500 mL	0.2 mL	0.2 mL			
160-9438-B-1	MW358-20141113-21	ExtChrom, A-01-R	T	100.70 mL	0.2 mL				
160-9438-B-1 DU	MW358-20141113-21	ExtChrom, A-01-R	T	101.57 mL	0.2 mL				
160-9438-B-2	MW359-20141113-21	ExtChrom, A-01-R	T	100.47 mL	0.2 mL				

Batch Notes	
Balance ID	1125353055
Column Analyst	nmn per scb
Column Date	11/20/14
CoPrecipitation Analyst	mfm per scb
CoPrecipitation Date	11/21/14
Person's name who witnessed reagent drop	nmn per scb
Analyst who added reagent	scb
SOP Number	ST-RC-0100, ST-RC-0242

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
10:53:34PM 11/21/2014

Sample

Sample Name: MB 160-158134/1-A Type: Blank
Spectrum #1 Analysis #1
: MB 160-158134/1-A
Sample Collection Date: 11/19/2014 11:30:00AM
Comment:

Sample Volume : 0.50 Sample Units: L
First Stage Dilution: N/A
Aliquot: N/A Aliquot Fraction: N/A
Dilution 2: N/A
Lab Preparation:

Batch

Batch Name: 158134
:
Description:

Client Name: Undefined
Client Contact:
Analyst: 60040

Tracer

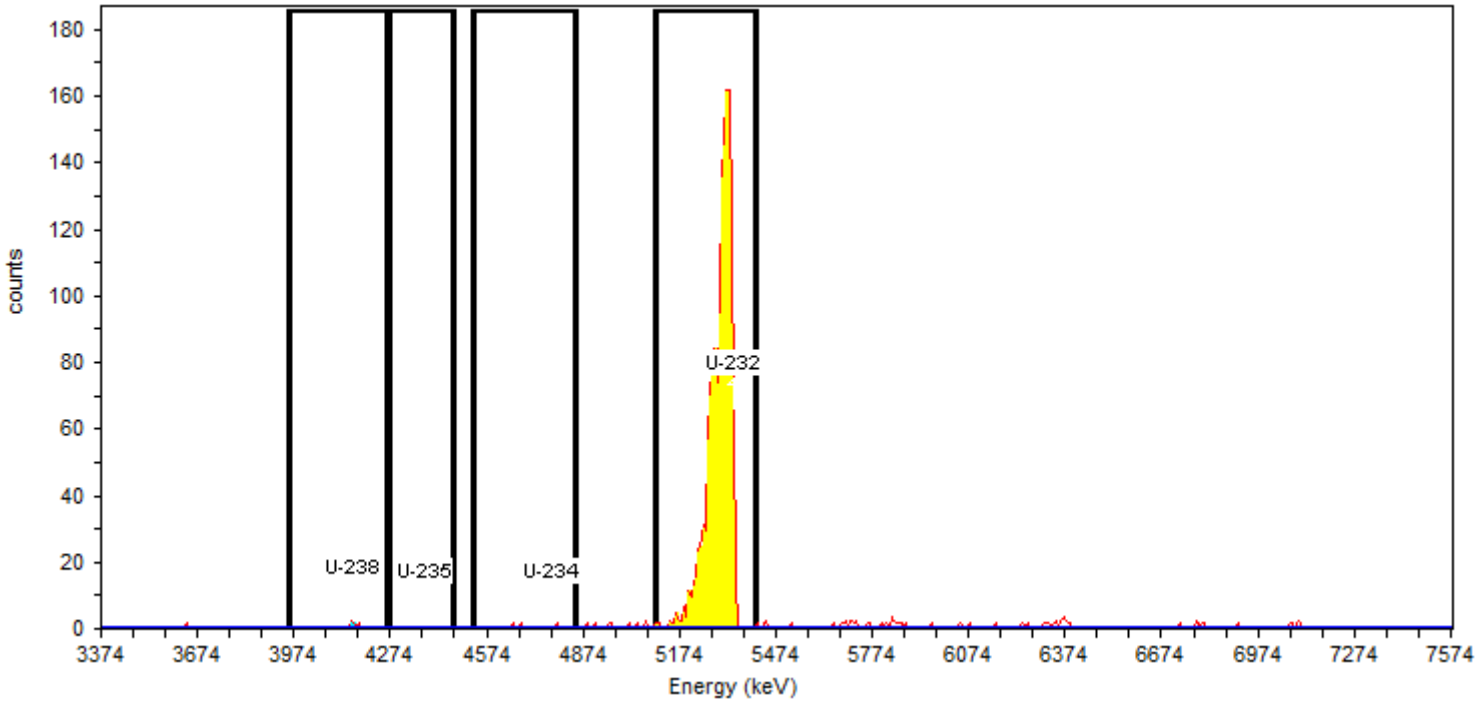
Tracer Name: U-232_00028
Tracer Activity: 82.25 DPM / mL x (Vol.) 0.20 mL = 16.45 DPM
Tracer Ref. Date: 8/25/2011 9:04:33PM

Tracer Nuclide: U-232
Tracer Recovery: 86.14%

Acquisition

Detector: AV181 SN: 50-110X1
Acquisition Start Date: 11/21/2014 4:13:21PM
Live Time: 400.00 min.
Real Time: 400.00 min.
Background Date: 11/18/2014 12:05:48AM
Bkgd Info: Sample: ICB;AV181; Det: AV181; Spectrum #1; 11/18/2014 12:05:48 AM

Energy Calibration: IC-9792;AV181-20140702
Efficiency Calibration:IC-9792;AV181-20140702
Calibration Date: 7/6/2014 6:16:08PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 26.19% +/- 0.31% TPU(2 sigma)



General Analysis

Analysis Method: ROI Analysis, Set Name = UROI
Decay Correction:11/21/2014 4:12:15PM
MDA Constants: Kα = 1.64 , Kβ = 1.64

Nuclide Library: Uranium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
U-238	4157.5	4,196.0	-38.5	3956.1	4261.9	42.2	100.0	4	1.6667	2.33	2.330E-002	pCi/L
U-235	4381.2	4,396.0	-14.8	4269.3	4470.7	.0	80.2	0	1.2500	-1.25	-1.556E-002	pCi/L
U-234	4776.4	4,775.8	0.6	4530.3	4851.0	40.6	99.8	3	0.0000	3.00	3.001E-002	pCi/L
U-232	5343.2	5,320.3	22.9	5097.1	5410.3	64.2	100.1	1441	1.2500	1439.75	1.276E+001	pCi/L

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
10:53:23PM 11/21/2014

Sample

Sample Name: LCS 160-158134/2-A Type: Control
Spectrum #1 Analysis #1
: LCS 160-158134/2-A
Sample Collection Date: 11/19/2014 11:30:00AM
Comment:

Sample Volume : 0.50 Sample Units: L
First Stage Dilution: N/A
Aliquot: N/A Aliquot Fraction: N/A
Dilution 2: N/A
Lab Preparation:

Batch

Batch Name: 158134
:
Description:

Client Name: Undefined
Client Contact:
Analyst: 60040

Tracer

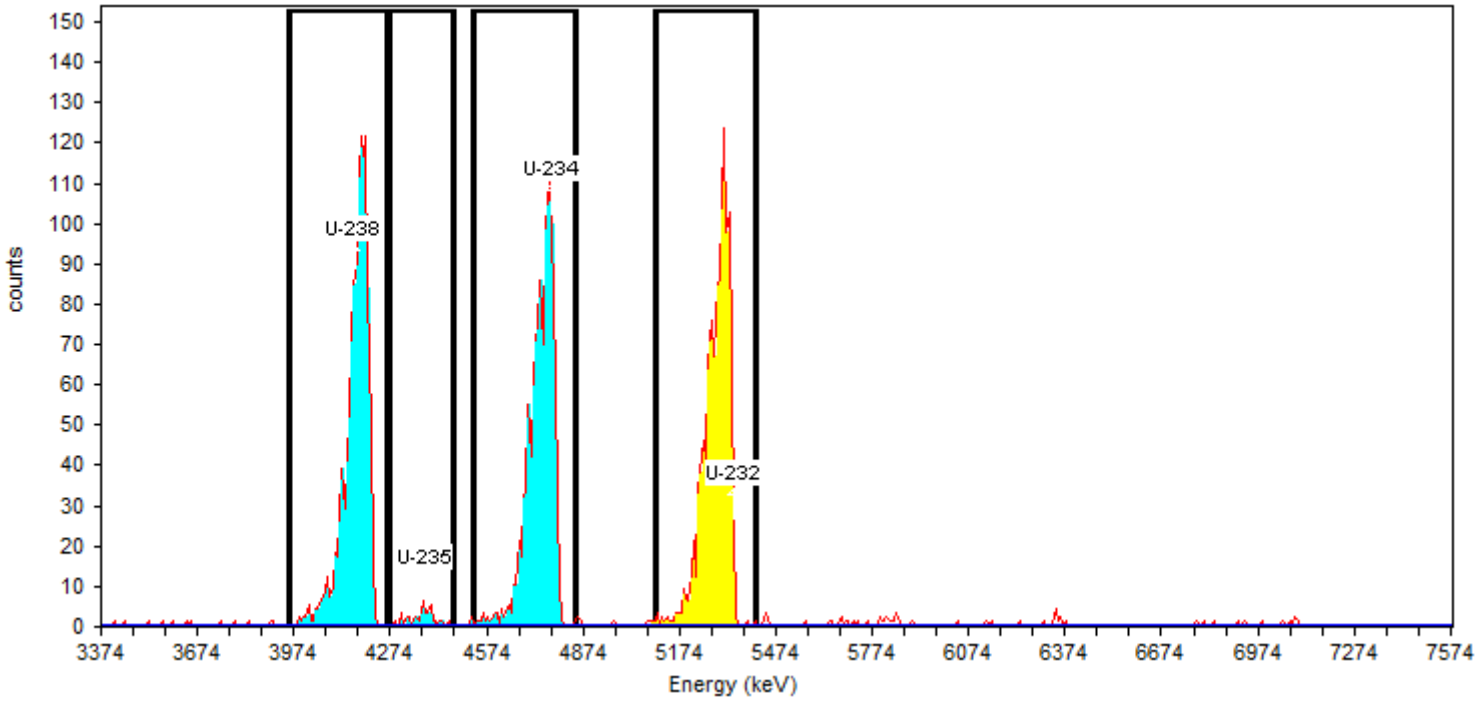
Tracer Name: U-232_00028
Tracer Activity: 82.25 DPM / mL x (Vol.) 0.20 mL = 16.45 DPM
Tracer Ref. Date: 8/25/2011 9:04:33PM

Tracer Nuclide: U-232
Tracer Recovery: 72.80%

Acquisition

Detector: AV182 SN: 50-110X6
Acquisition Start Date: 11/21/2014 4:13:21PM
Live Time: 400.00 min.
Real Time: 400.00 min.
Background Date: 11/18/2014 5:54:38PM
Bkgd Info: Sample: ICB;AV182; Det: AV182; Spectrum #1; 11/18/2014 5:54:38 PM

Energy Calibration: IC-9793;AV182-20140702
Efficiency Calibration:IC-9793;AV182-20140702
Calibration Date: 7/6/2014 6:16:24PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 26.13% +/- 0.32% TPU(2 sigma)



General Analysis

Analysis Method: ROI Analysis, Set Name = UROI
Decay Correction:11/21/2014 4:12:13PM
MDA Constants: Kα = 1.64 , Kβ = 1.64

Nuclide Library: Uranium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
U-238	4157.5	4,196.0	-38.5	3956.1	4261.9	63.8	100.0	1165	0.4167	1164.58	1.379E+001	pCi/L
U-235	4381.2	4,396.0	-14.8	4269.3	4470.7	41.2	80.2	37	0.4167	36.58	5.400E-001	pCi/L
U-234	4776.4	4,775.8	0.6	4530.3	4851.0	81.6	99.8	1139	1.2500	1137.75	1.350E+001	pCi/L
U-232	5343.2	5,320.3	22.9	5097.1	5410.3	83.3	100.1	1218	3.7500	1214.25	1.079E+001	pCi/L

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
10:53:32PM 11/21/2014

Sample

Sample Name: 160-9438-B-1-C Type: Sample
Spectrum #1 Analysis #1
: 160-9438-B-1-C
Sample Collection Date: 11/13/2014 12:05:00PM
Comment:

Sample Volume : 0.10 Sample Units: L
First Stage Dilution: N/A
Aliquot: N/A Aliquot Fraction: N/A
Dilution 2: N/A
Lab Preparation:

Batch

Batch Name: 158134
:
Description:

Client Name: Undefined
Client Contact:
Analyst: 60040

Tracer

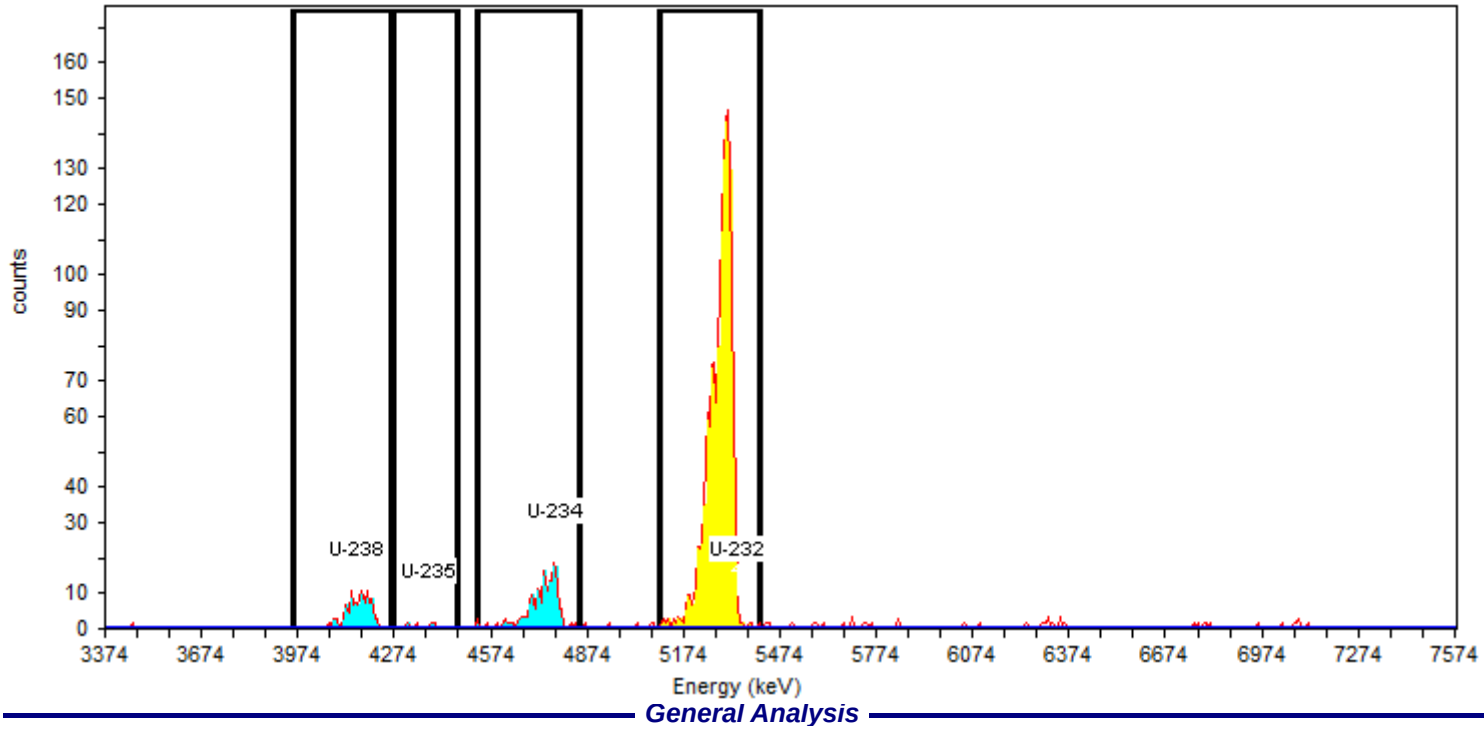
Tracer Name: U-232_00028
Tracer Activity: 82.25 DPM / mL x (Vol.) 0.20 mL = 16.45 DPM
Tracer Ref. Date: 8/25/2011 9:04:33PM

Tracer Nuclide: U-232
Tracer Recovery: 79.71%

Acquisition

Detector: AV184 SN: 50-110Y3
Acquisition Start Date: 11/21/2014 4:13:21PM
Live Time: 400.00 min.
Real Time: 400.00 min.
Background Date: 11/18/2014 5:54:38PM
Bkgd Info: Sample: ICB;AV184; Det: AV184; Spectrum #1; 11/18/2014 5:54:38 PM

Energy Calibration: IC-9795;AV184-20140702
Efficiency Calibration:IC-9795;AV184-20140702
Calibration Date: 7/2/2014 12:04:29PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 26.39% +/- 0.35% TPU(2 sigma)



General Analysis

Analysis Method: ROI Analysis, Set Name = UROI
Decay Correction:11/21/2014 4:12:13PM
MDA Constants: Kα = 1.64 , Kβ = 1.64

Nuclide Library: Uranium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
U-238	4157.5	4,196.0	-38.5	3956.1	4261.9	84.6	100.0	101	0.4167	100.58	5.348E+000	pCi/L
U-235	4381.2	4,396.0	-14.8	4269.3	4470.7	90.3	80.2	4	0.0000	4.00	2.652E-001	pCi/L
U-234	4776.4	4,775.8	0.6	4530.3	4851.0	81.6	99.8	170	0.8333	169.17	9.012E+000	pCi/L
U-232	5343.2	5,320.3	22.9	5097.1	5410.3	66.6	100.1	1345	2.5000	1342.50	5.865E+001	pCi/L

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
10:53:39PM 11/21/2014

Sample

Sample Name: 160-9438-B-1-D DU Type: Sample
Spectrum #1 Analysis #1
: 160-9438-B-1-D DU
Sample Collection Date: 11/13/2014 12:05:00PM
Comment:

Sample Volume : 0.10 Sample Units: L
First Stage Dilution: N/A
Aliquot: N/A Aliquot Fraction: N/A
Dilution 2: N/A
Lab Preparation:

Batch

Batch Name: 158134
:
Description:

Client Name: Undefined
Client Contact:
Analyst: 60040

Tracer

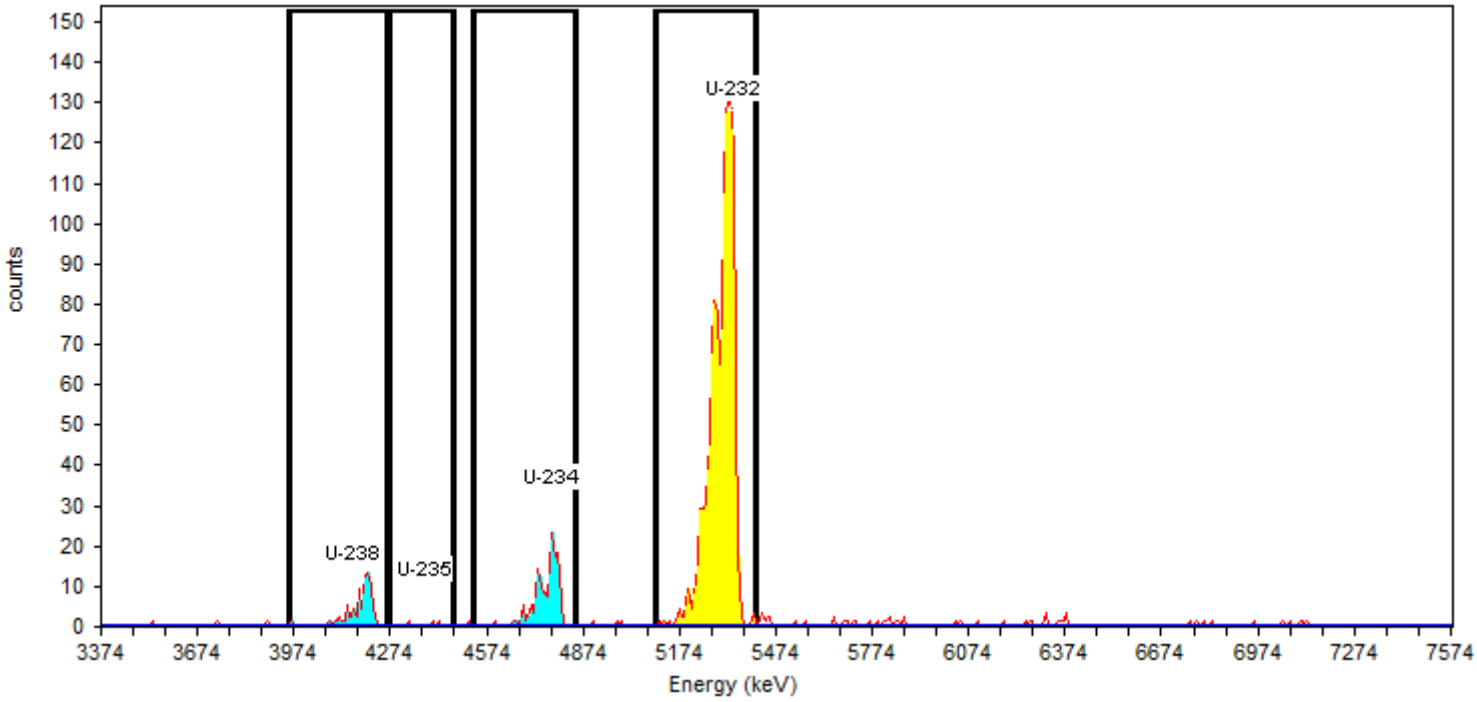
Tracer Name: U-232_00028
Tracer Activity: 82.25 DPM / mL x (Vol.) 0.20 mL = 16.45 DPM
Tracer Ref. Date: 8/25/2011 9:04:33PM

Tracer Nuclide: U-232
Tracer Recovery: 80.48%

Acquisition

Detector: AV185 SN: 50-119I1
Acquisition Start Date: 11/21/2014 4:13:22PM
Live Time: 400.00 min.
Real Time: 400.00 min.
Background Date: 11/18/2014 12:05:49AM
Bkgd Info: Sample: ICB;AV185; Det: AV185; Spectrum #1; 11/18/2014 12:05:49 AM

Energy Calibration: IC-9817;AV185-20140702
Efficiency Calibration:IC-9817;AV185-20140702
Calibration Date: 7/2/2014 12:04:32PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 25.19% +/- 0.31% TPU(2 sigma)



General Analysis

Analysis Method: ROI Analysis, Set Name = UROI
Decay Correction:11/21/2014 4:12:13PM
MDA Constants: Kα = 1.64 , Kβ = 1.64

Nuclide Library: Uranium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
U-238	4157.5	4,196.0	-38.5	3956.1	4261.9	56.9	100.0	86	0.8333	85.17	4.658E+000	pCi/L
U-235	4381.2	4,396.0	-14.8	4269.3	4470.7	91.4	80.2	3	1.2500	1.75	1.193E-001	pCi/L
U-234	4776.4	4,775.8	0.6	4530.3	4851.0	77.9	99.8	167	0.4167	166.58	9.128E+000	pCi/L
U-232	5343.2	5,320.3	22.9	5097.1	5410.3	71.6	100.1	1299	5.0000	1294.00	5.871E+001	pCi/L

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
10:53:35PM 11/21/2014

Sample

Sample Name: 160-9438-B-2-B Type: Sample
Spectrum #1 Analysis #1
: 160-9438-B-2-B
Sample Collection Date: 11/13/2014 1:45:00PM
Comment:

Sample Volume : 0.10 Sample Units: L
First Stage Dilution: N/A
Aliquot: N/A Aliquot Fraction: N/A
Dilution 2: N/A
Lab Preparation:

Batch

Batch Name: 158134
:
Description:

Client Name: Undefined
Client Contact:
Analyst: 60040

Tracer

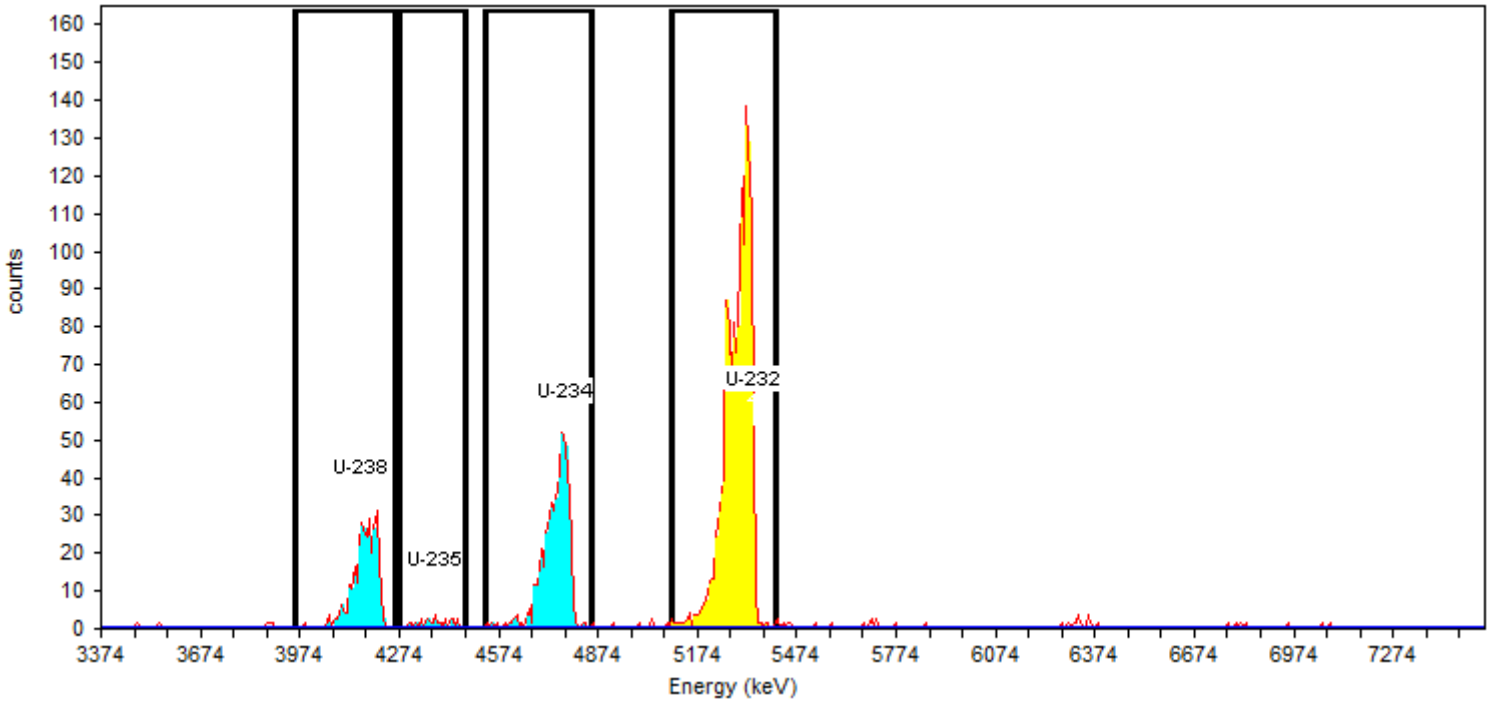
Tracer Name: U-232_00028
Tracer Activity: 82.25 DPM / mL x (Vol.) 0.20 mL = 16.45 DPM
Tracer Ref. Date: 8/25/2011 9:04:33PM

Tracer Nuclide: U-232
Tracer Recovery: 80.52%

Acquisition

Detector: AV188 SN: 50-110X4
Acquisition Start Date: 11/21/2014 4:13:22PM
Live Time: 400.00 min.
Real Time: 400.00 min.
Background Date: 11/18/2014 5:54:39PM
Bkgd Info: Sample: ICB;AV188; Det: AV188; Spectrum #1; 11/18/2014 5:54:39 PM

Energy Calibration: IC-9886;AV188-20140702
Efficiency Calibration:IC-9886;AV188-20140702
Calibration Date: 7/2/2014 12:04:42PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 25.97% +/- 0.35% TPU(2 sigma)



General Analysis

Analysis Method: ROI Analysis, Set Name = UROI
Decay Correction:11/21/2014 4:12:13PM
MDA Constants: Kα = 1.64 , Kβ = 1.64

Nuclide Library: Uranium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
U-238	4157.5	4,196.0	-38.5	3956.1	4261.9	78.3	100.0	309	0.4167	308.58	1.654E+001	pCi/L
U-235	4381.2	4,396.0	-14.8	4269.3	4470.7	63.3	80.2	23	0.0000	23.00	1.537E+000	pCi/L
U-234	4776.4	4,775.8	0.6	4530.3	4851.0	77.0	99.8	505	1.2500	503.75	2.706E+001	pCi/L
U-232	5343.2	5,320.3	22.9	5097.1	5410.3	85.0	100.1	1337	2.5000	1334.50	5.938E+001	pCi/L

Daily Checks

Alpha Spectroscopy Daily Pulser Check

Analysis Date: 11/21/14

		Gross Counts			FWHM (keV)			Pulser Center			Energy (keV)		
Detector	Analysis Date	Result	Criteria	P/F	Result	Criteria	P/F	Result	Criteria	P/F	Result	Criteria	P/F
AV181	11/21/14 13:49	5828	5629.6 - 6222.2	Pass	12.5	10 - 20	Pass	224.1	218.0 - 228.0	Pass	5038	4990.0 - 5070.0	Pass
AV182	11/21/14 13:49	5864	5562.3 - 6147.8	Pass	12.9	10 - 20	Pass	231.0	225.5 - 235.5	Pass	5090	5046.0 - 5126.0	Pass
AV184	11/21/14 13:49	5995	5724.4 - 6327.0	Pass	16.0	10 - 20	Pass	223.0	218.0 - 228.0	Pass	5030	4990.3 - 5070.3	Pass
AV185	11/21/14 13:49	5886	5577.8 - 6164.9	Pass	12.8	10 - 20	Pass	222.0	217.1 - 227.1	Pass	5023	4982.9 - 5062.9	Pass
AV188	11/21/14 13:49	6026	5519.8 - 6100.8	Pass	14.5	10 - 20	Pass	222.1	216.2 - 226.2	Pass	5023	4976.3 - 5056.3	Pass

Analysis Date: 11/23/14

		Gross Counts			FWHM (keV)			Pulser Center			Energy (keV)		
Detector	Analysis Date	Result	Criteria	P/F	Result	Criteria	P/F	Result	Criteria	P/F	Result	Criteria	P/F
AV165	11/23/14 14:44	5750	5525.9 - 6107.5	Pass	13.1	10 - 20	Pass	222.9	218.4 - 228.4	Pass	5030	4993.0 - 5073.0	Pass
AV168	11/23/14 14:44	5784	5611.6 - 6202.3	Pass	13.1	10 - 20	Pass	223.1	218.0 - 228.0	Pass	5030	4990.2 - 5070.2	Pass
AV173	11/23/14 14:44	6019	5729.5 - 6332.6	Pass	14.7	10 - 20	Pass	221.0	216.0 - 226.0	Pass	5015	4975.3 - 5055.3	Pass

Analysis Date: 11/24/14

		Gross Counts			FWHM (keV)			Pulser Center			Energy (keV)		
Detector	Analysis Date	Result	Criteria	P/F	Result	Criteria	P/F	Result	Criteria	P/F	Result	Criteria	P/F
AV149	11/24/14 18:02	6027	5607.1 - 6197.4	Pass	14.4	10 - 20	Pass	224.1	219.1 - 229.1	Pass	5038	4997.8 - 5077.8	Pass
AV150	11/24/14 18:02	6020	5718.5 - 6320.4	Pass	13.4	10 - 20	Pass	224.0	219.0 - 229.0	Pass	5037	4997.6 - 5077.6	Pass

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Pulser Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
6:03:56PM 11/24/2014

Sample

Sample Name: Pulser;AV149 Spectrum #7 Analysis #1
Comment:

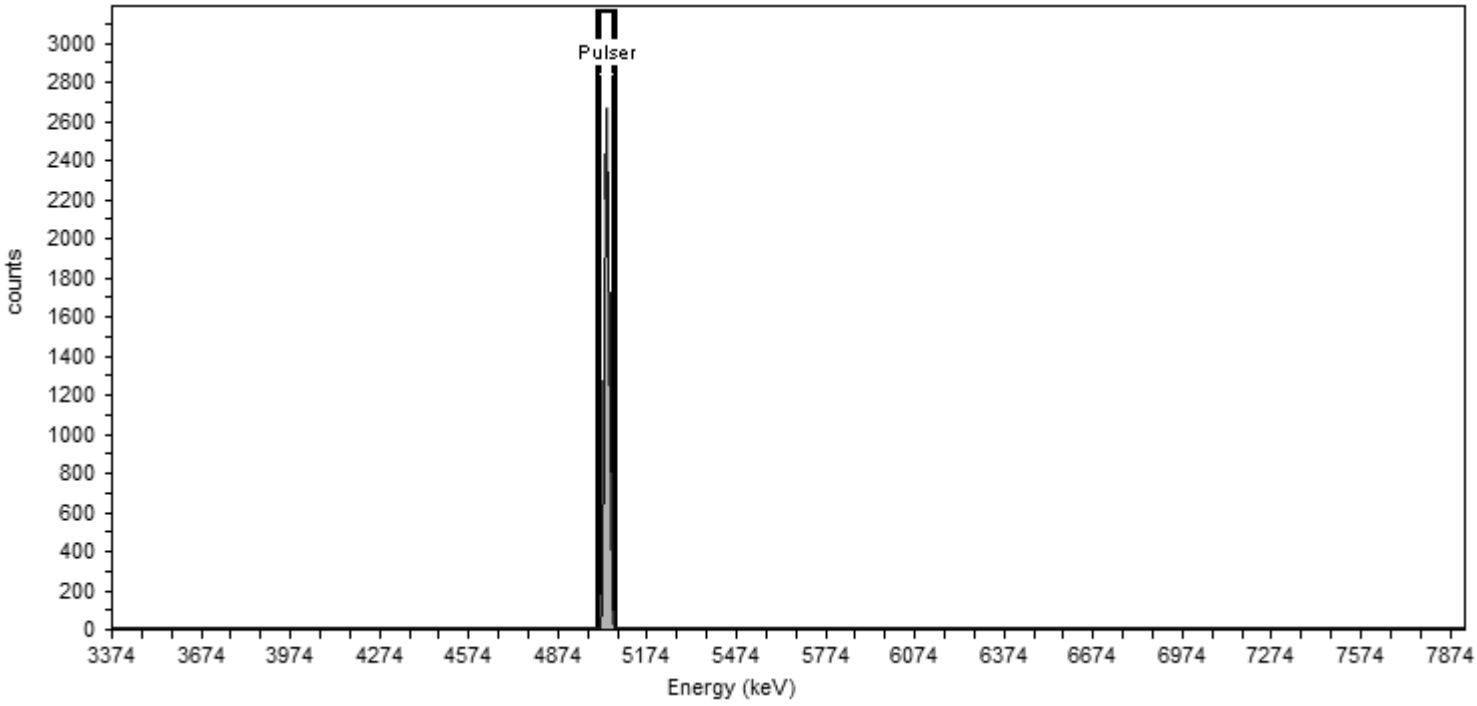
Batch

Batch Name: November2014a
Description:

Acquisition

Detector: AV149 , SN: 50-05/R3
Acquisition Start Date: 11/24/2014 6:02:36PM
Live Time: 1.00 min.
Real Time: 1.00 min.
Calibration Name: IC-8875;AV149-20140709
Calibration Date: 7/8/2014 10:30:10PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Analysis Method: Peak Fit Analysis

Nuclide Summary (Peak Search)

Nuclide	Peak Energy keV	Start Energy keV	End Energy keV	FWHM keV	Fit Area	Gross Counts
Pulser	5038.001	5013.414	5062.587	14.44	5,529.86	6,027.22

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Pulser Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
6:03:55PM 11/24/2014

Sample

Sample Name: Pulser;AV150
Comment:

Spectrum #7 Analysis #1

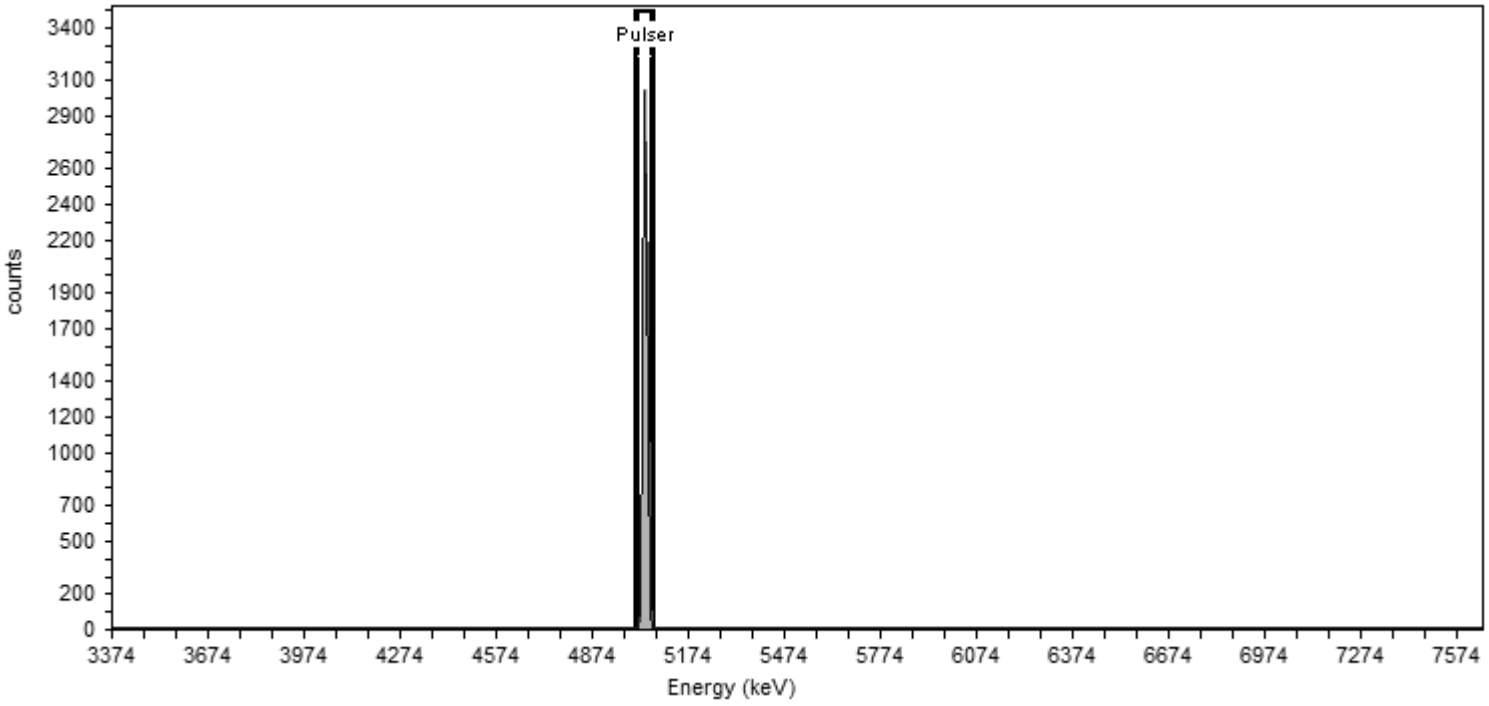
Batch

Batch Name: November2014a
Description:

Acquisition

Detector: AV150 , SN: 50-05/R4
Acquisition Start Date: 11/24/2014 6:02:36PM
Live Time: 1.00 min.
Real Time: 1.00 min.
Calibration Name: IC-8876;AV150-20140709
Calibration Date: 7/8/2014 10:30:13PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Analysis Method: Peak Fit Analysis

Nuclide Summary (Peak Search)

Nuclide	Peak Energy keV	Start Energy keV	End Energy keV	FWHM keV	Fit Area	Gross Counts
Pulser	5037.114	5014.379	5059.848	13.36	5,825.71	6,019.90

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Alpha-Spectroscopy Pulser Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
2:51:08PM 11/23/2014

Sample

Sample Name: Pulser;AV165
Comment:

Spectrum #4 Analysis #1

Batch

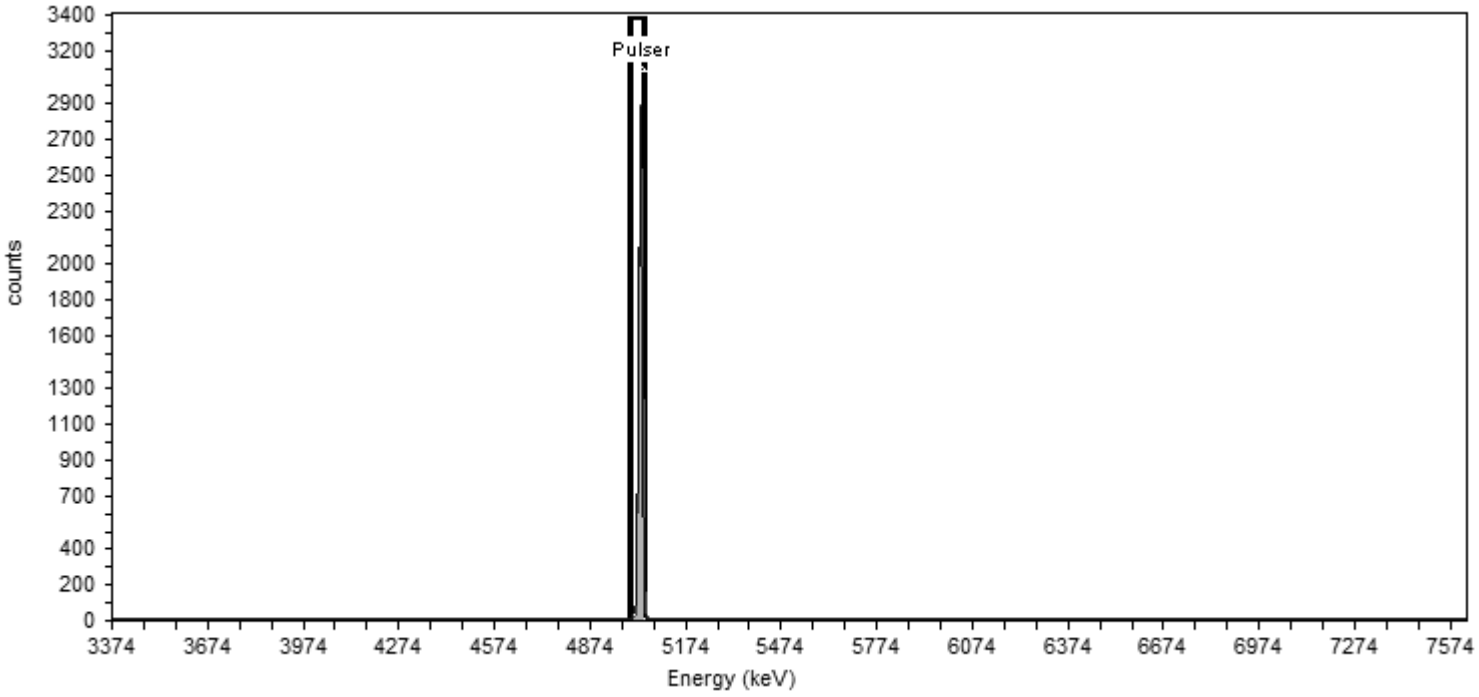
Batch Name: November2014a
Description:

Acquisition

Detector: AV165 , SN: 50-112F7
Acquisition Start Date: 11/23/2014 2:44:20PM
Live Time: 1.00 min.
Real Time: 1.00 min.
Calibration Name: IC-8877;AV165-20140706
Calibration Date: 7/8/2014 5:48:08PM

Energy Calibration Equation:

Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Analysis Method: Peak Fit Analysis

Nuclide Summary (Peak Search)

Nuclide	Peak Energy keV	Start Energy keV	End Energy keV	FWHM keV	Fit Area	Gross Counts
Pulser	5029.604	5007.240	5051.967	13.14	5,445.10	5,749.96

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Alpha-Spectroscopy Pulser Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
2:51:02PM 11/23/2014

Sample

Sample Name: Pulser;AV168 Spectrum #4 Analysis #1
Comment:

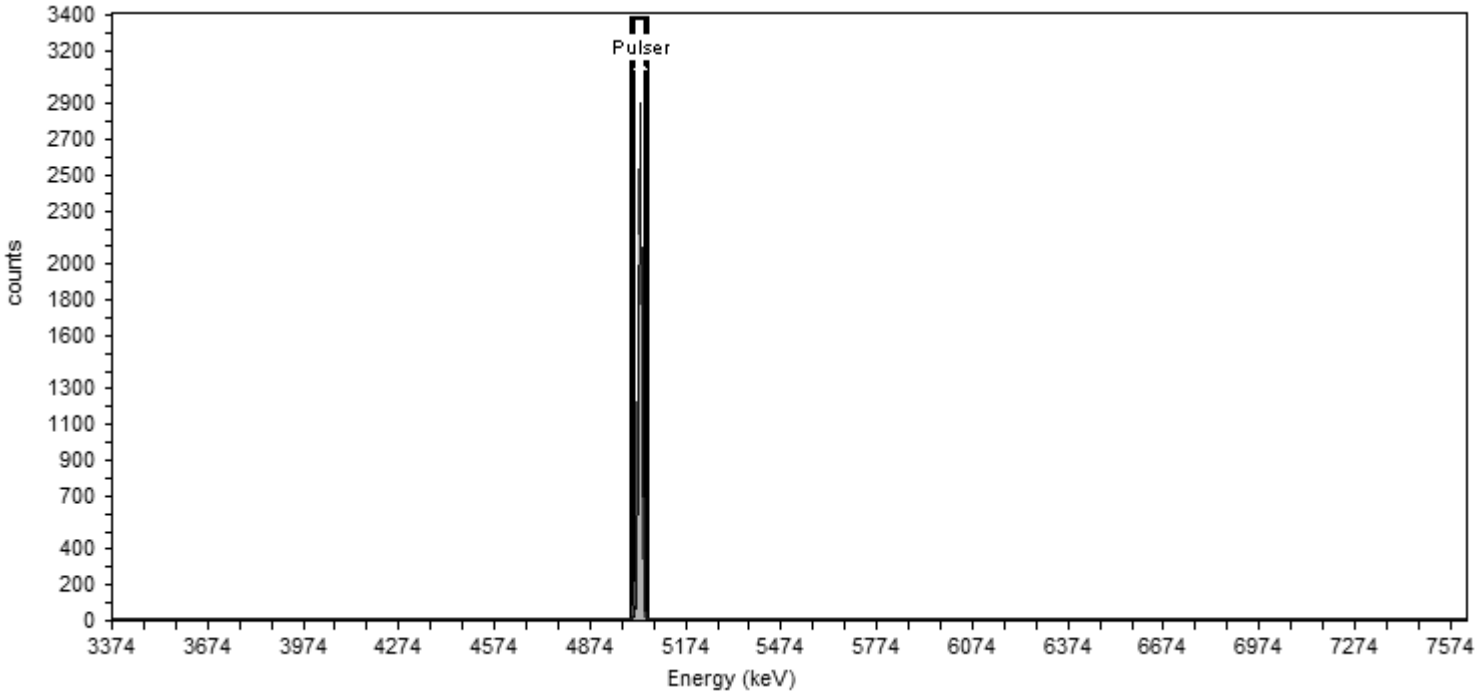
Batch

Batch Name: November2014a
Description:

Acquisition

Detector: AV168 , SN: 50-113 G4
Acquisition Start Date: 11/23/2014 2:44:21PM
Live Time: 1.00 min.
Real Time: 1.01 min.
Calibration Name: IC-9793;AV168-20140706
Calibration Date: 7/6/2014 9:06:10PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Analysis Method: Peak Fit Analysis

Nuclide Summary (Peak Search)

Nuclide	Peak Energy keV	Start Energy keV	End Energy keV	FWHM keV	Fit Area	Gross Counts
Pulser	5030.360	5008.093	5052.628	13.08	5,449.82	5,783.93

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Alpha-Spectroscopy Pulser Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
2:51:15PM 11/23/2014

Sample

Sample Name: Pulser;AV173 Spectrum #4 Analysis #1
Comment:

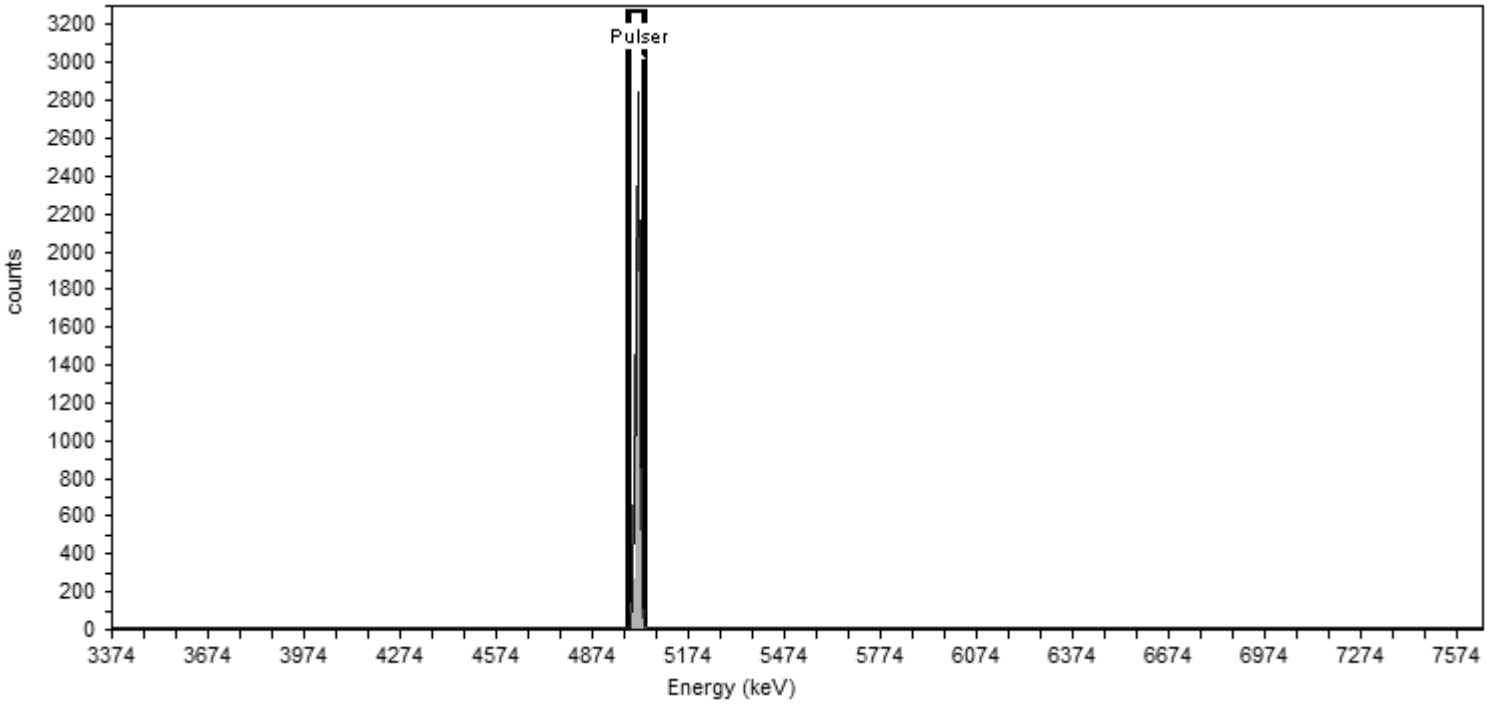
Batch

Batch Name: November2014a
Description:

Acquisition

Detector: AV173 , SN: 50-112 Y4
Acquisition Start Date: 11/23/2014 2:44:22PM
Live Time: 1.00 min.
Real Time: 1.00 min.
Calibration Name: IC-9885;AV173-20140706
Calibration Date: 7/6/2014 9:06:28PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Analysis Method: Peak Fit Analysis

Nuclide Summary (Peak Search)

Nuclide	Peak Energy keV	Start Energy keV	End Energy keV	FWHM keV	Fit Area	Gross Counts
Pulser	5015.435	4990.373	5040.498	14.72	6,005.40	6,019.10

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Alpha-Spectroscopy Pulser Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:53:11PM 11/21/2014

Sample

Sample Name: Pulser;AV181 Spectrum #2 Analysis #1
Comment:

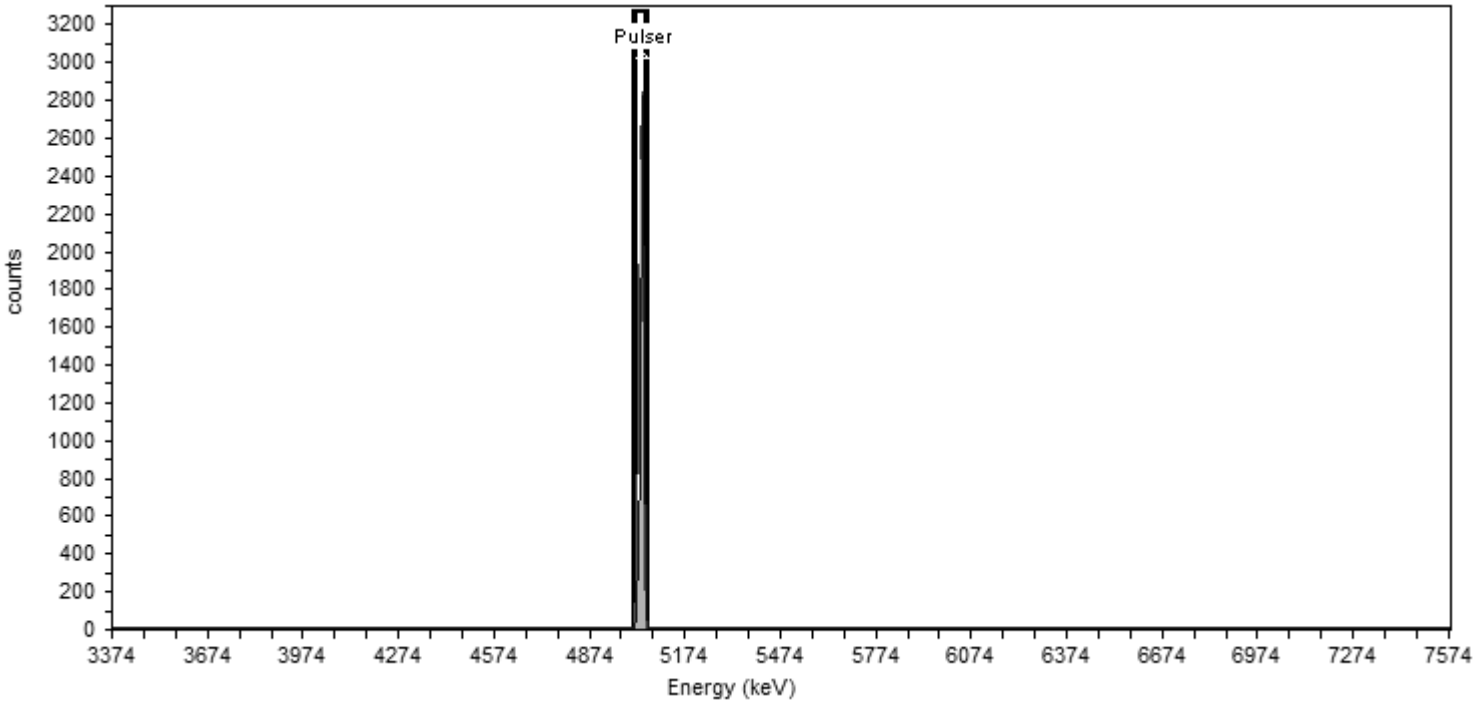
Batch

Batch Name: November2014b
Description:

Acquisition

Detector: AV181 , SN: 50-110X1
Acquisition Start Date: 11/21/2014 1:49:33PM
Live Time: 1.00 min.
Real Time: 1.00 min.
Calibration Name: IC-9792;AV181-20140702
Calibration Date: 7/6/2014 6:16:08PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Analysis Method: Peak Fit Analysis

Nuclide Summary (Peak Search)

Nuclide	Peak Energy keV	Start Energy keV	End Energy keV	FWHM keV	Fit Area	Gross Counts
Pulser	5038.095	5016.892	5059.299	12.46	5,087.81	5,828.03

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Alpha-Spectroscopy Pulser Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:53:12PM 11/21/2014

Sample

Sample Name: Pulser;AV182 Spectrum #2 Analysis #1
Comment:

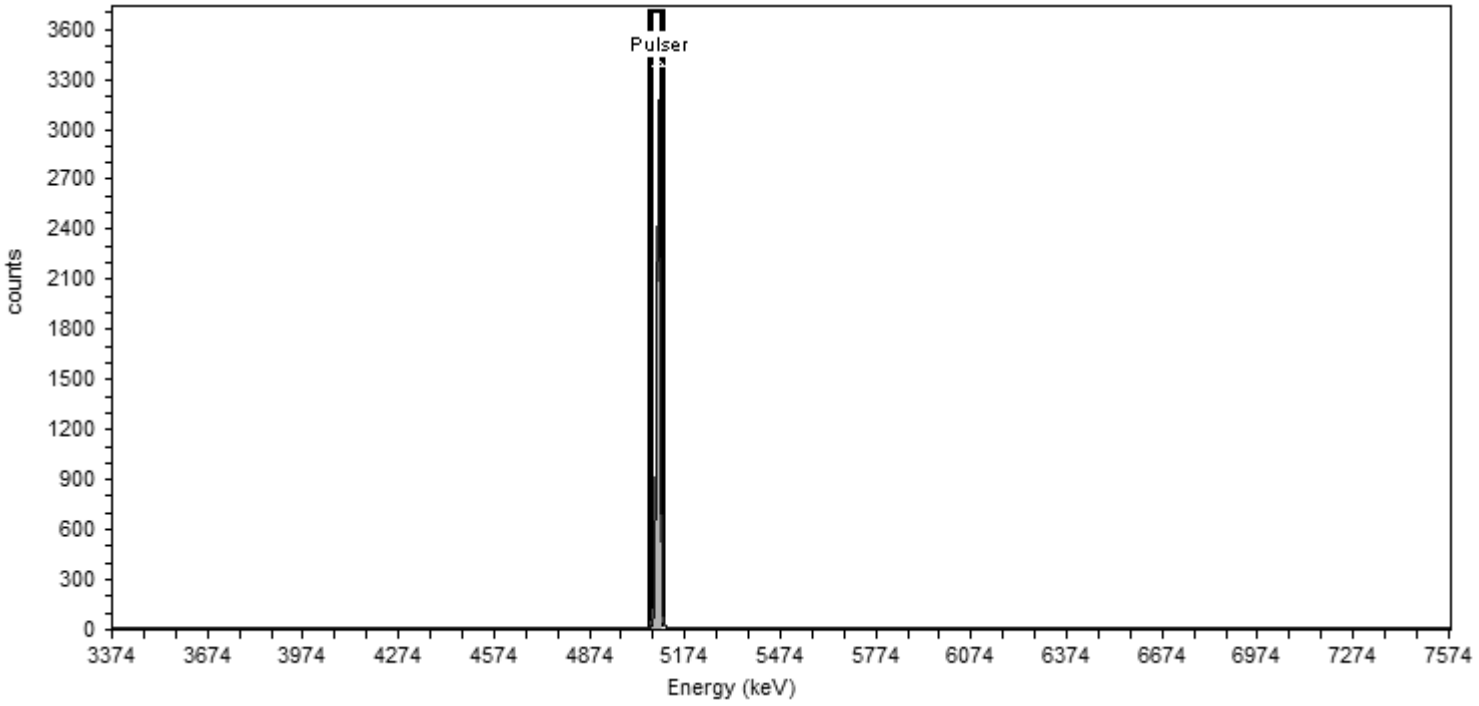
Batch

Batch Name: November2014b
Description:

Acquisition

Detector: AV182 , SN: 50-110X6
Acquisition Start Date: 11/21/2014 1:49:32PM
Live Time: 1.00 min.
Real Time: 1.01 min.
Calibration Name: IC-9793;AV182-20140702
Calibration Date: 7/6/2014 6:16:24PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Analysis Method: Peak Fit Analysis

Nuclide Summary (Peak Search)

Nuclide	Peak Energy keV	Start Energy keV	End Energy keV	FWHM keV	Fit Area	Gross Counts
Pulser	5089.775	5067.848	5111.702	12.88	5,858.20	5,864.27

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Alpha-Spectroscopy Pulser Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:53:19PM 11/21/2014

Sample

Sample Name: Pulser;AV184 Spectrum #2 Analysis #1
Comment:

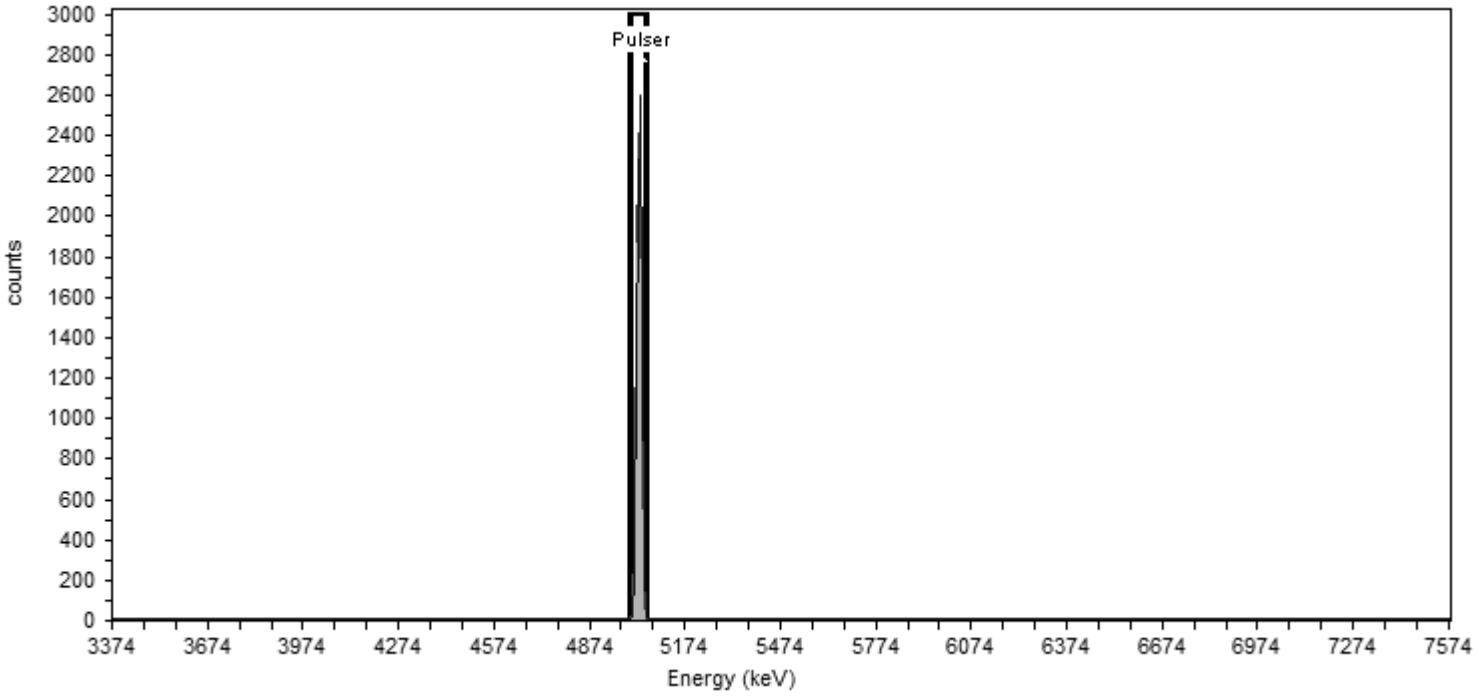
Batch

Batch Name: November2014b
Description:

Acquisition

Detector: AV184 , SN: 50-110Y3
Acquisition Start Date: 11/21/2014 1:49:32PM
Live Time: 1.00 min.
Real Time: 1.00 min.
Calibration Name: IC-9795;AV184-20140702
Calibration Date: 7/2/2014 12:04:29PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Analysis Method: Peak Fit Analysis

Nuclide Summary (Peak Search)

Nuclide	Peak Energy keV	Start Energy keV	End Energy keV	FWHM keV	Fit Area	Gross Counts
Pulser	5030.301	5003.009	5057.593	16.03	5,966.40	5,994.63

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Alpha-Spectroscopy Pulser Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:53:20PM 11/21/2014

Sample

Sample Name: Pulser;AV185 Spectrum #2 Analysis #1
Comment:

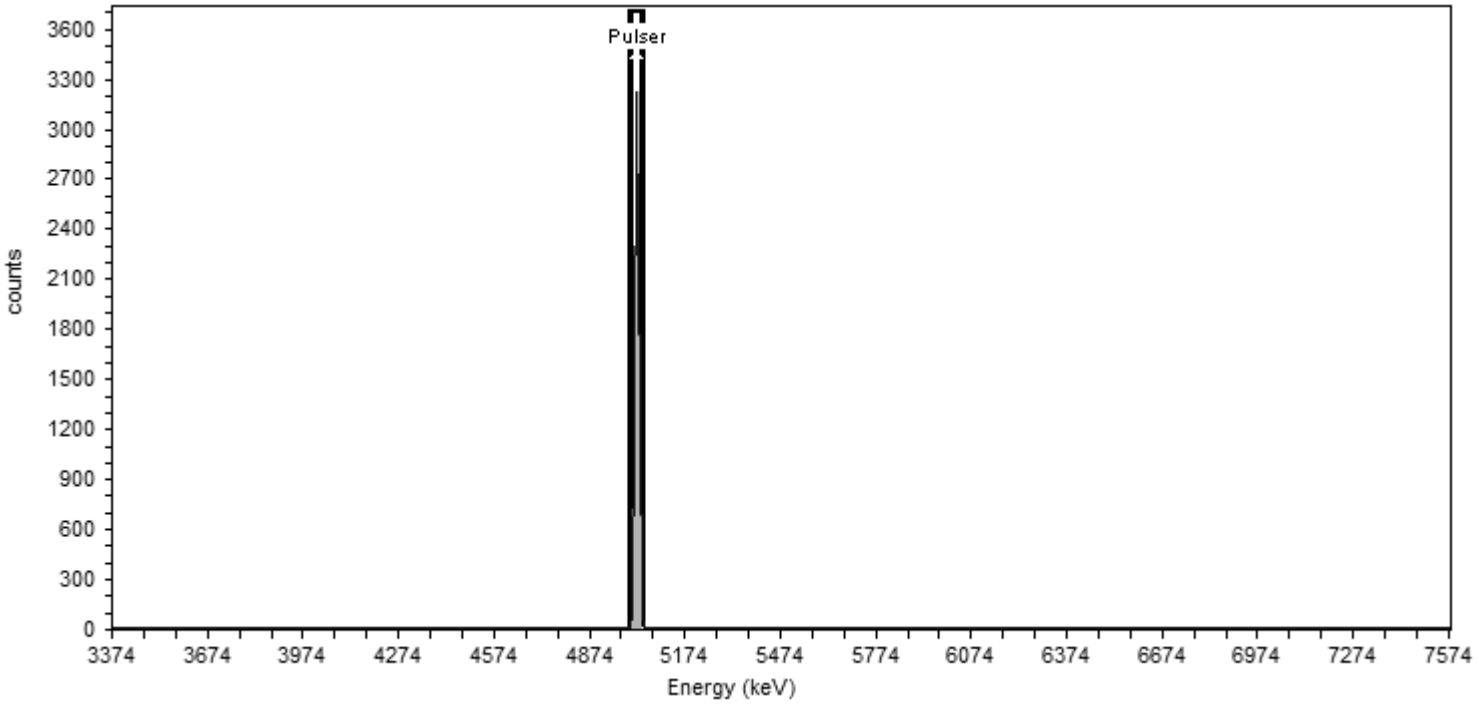
Batch

Batch Name: November2014b
Description:

Acquisition

Detector: AV185 , SN: 50-119I1
Acquisition Start Date: 11/21/2014 1:49:33PM
Live Time: 1.00 min.
Real Time: 1.00 min.
Calibration Name: IC-9817;AV185-20140702
Calibration Date: 7/2/2014 12:04:32PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Analysis Method: Peak Fit Analysis

Nuclide Summary (Peak Search)

Nuclide	Peak Energy keV	Start Energy keV	End Energy keV	FWHM keV	Fit Area	Gross Counts
Pulser	5022.584	5000.745	5044.424	12.83	5,939.49	5,885.90

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Alpha-Spectroscopy Pulser Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:52:22PM 11/21/2014

Sample

Sample Name: Pulser;AV188 Spectrum #2 Analysis #1
Comment:

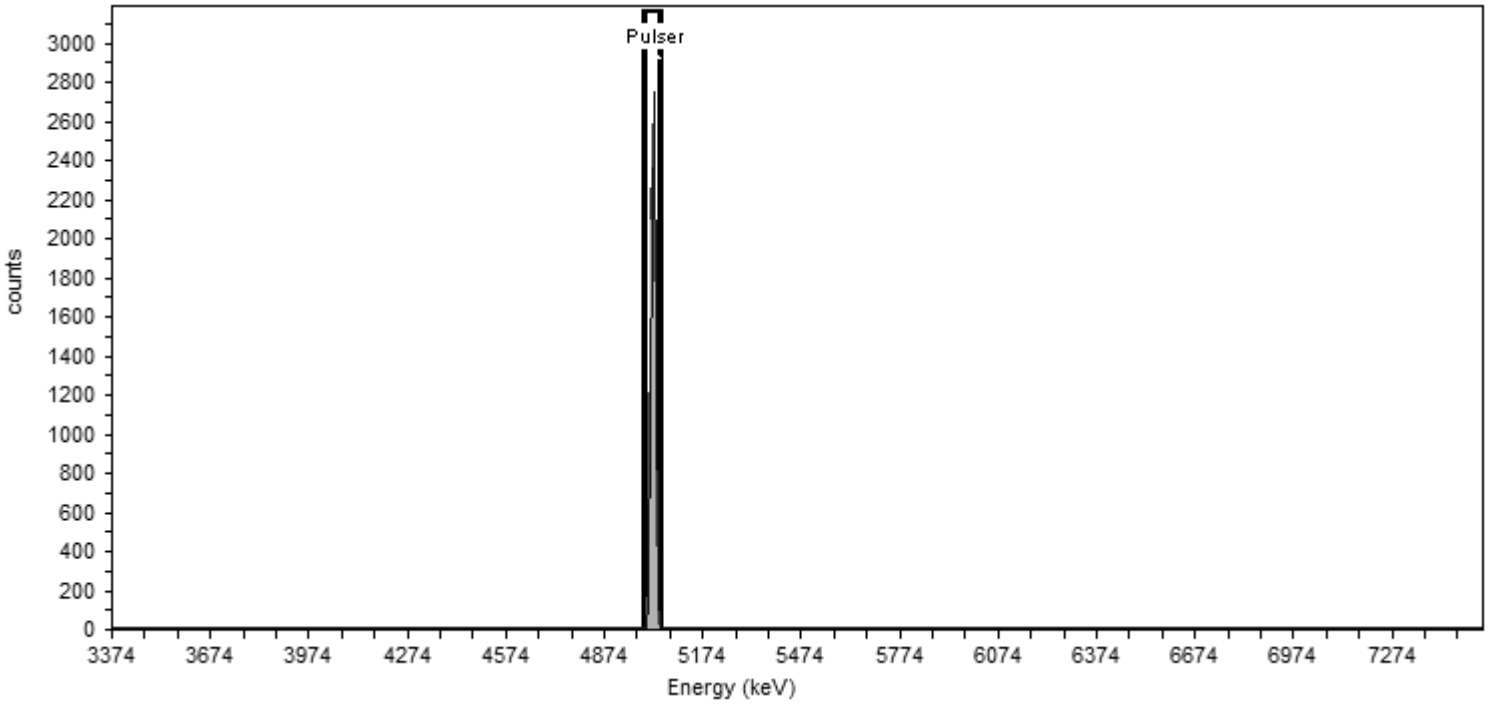
Batch

Batch Name: November2014b
Description:

Acquisition

Detector: AV188 , SN: 50-110X4
Acquisition Start Date: 11/21/2014 1:49:28PM
Live Time: 1.00 min.
Real Time: 1.00 min.
Calibration Name: IC-9886;AV188-20140702
Calibration Date: 7/2/2014 12:04:42PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Analysis Method: Peak Fit Analysis

Nuclide Summary (Peak Search)

Nuclide	Peak Energy keV	Start Energy keV	End Energy keV	FWHM keV	Fit Area	Gross Counts
Pulser	5023.000	4998.350	5047.651	14.48	5,716.08	6,026.03

Initial Calibrations

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
10:30:11PM 7/8/2014

Calibration

Sample Name: IC-8875;AV149-20140709
Description:
Detector: AV149

Analyst: 60040
Analysis Date: 7/8/2014 10:30:10PM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82234-334
Prepared by: Analytics
Description:

Certification Date: 6/2/2010 12:00:00PM

Acquisition

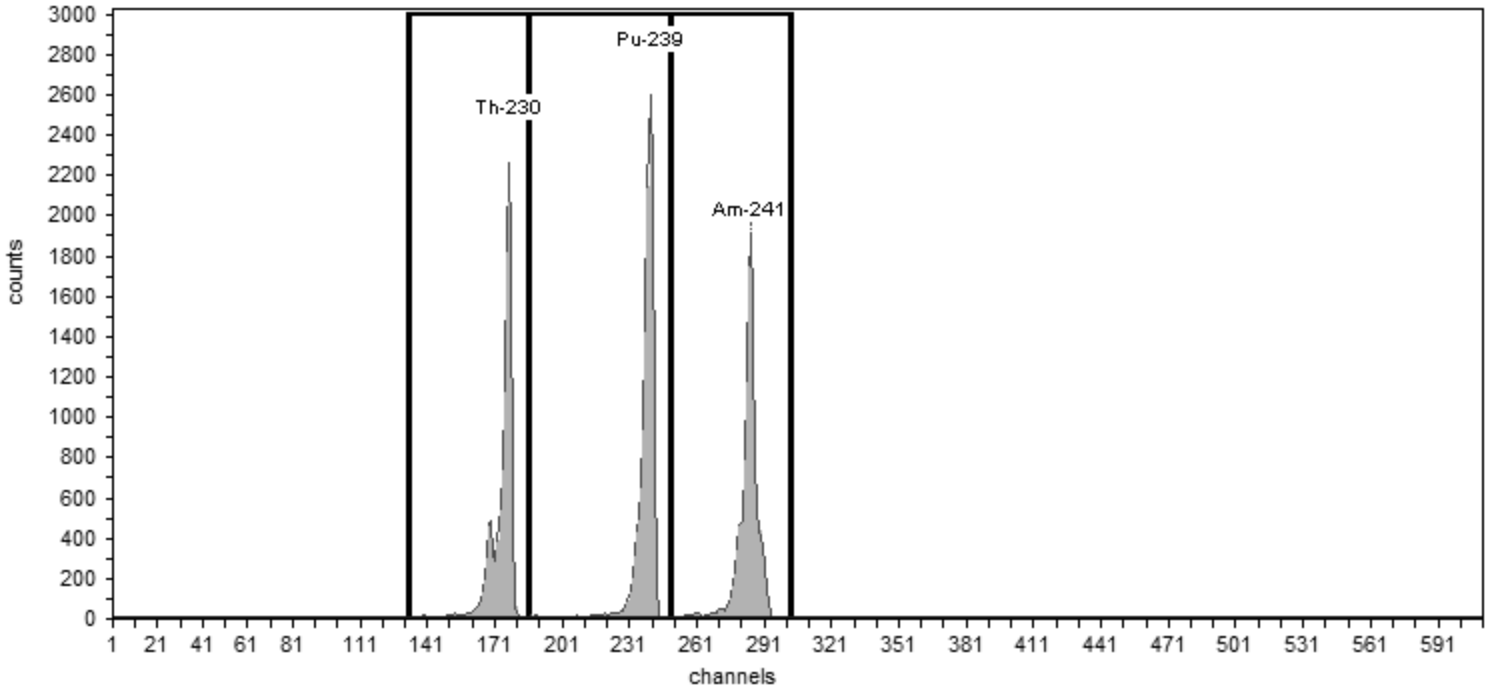
Detector: AV149 , SN: 50-05/R3
Acquisition Start Date: 7/8/2014 5:54:58PM

Live Time: 140.00 min.
Real Time: 140.01 min.

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency Calibration Name: IC-8875;AV149-20140709

Efficiency: 25.45% +/- 0.36% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: Yes
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	26.37	11,880.00	84.86
Pu-239	240	5,155.40	186	249	29.25	12,980.00	92.71
Am-241	284	5,485.70	249	303	29.05	12,018.00	85.84

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
10:30:14PM 7/8/2014

Calibration

Sample Name: IC-8876;AV150-20140709
Description:
Detector: AV150

Analyst: 60040
Analysis Date: 7/8/2014 10:30:13PM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82235-334
Prepared by: Analytics
Description:

Certification Date: 6/4/2010 12:00:00PM

Acquisition

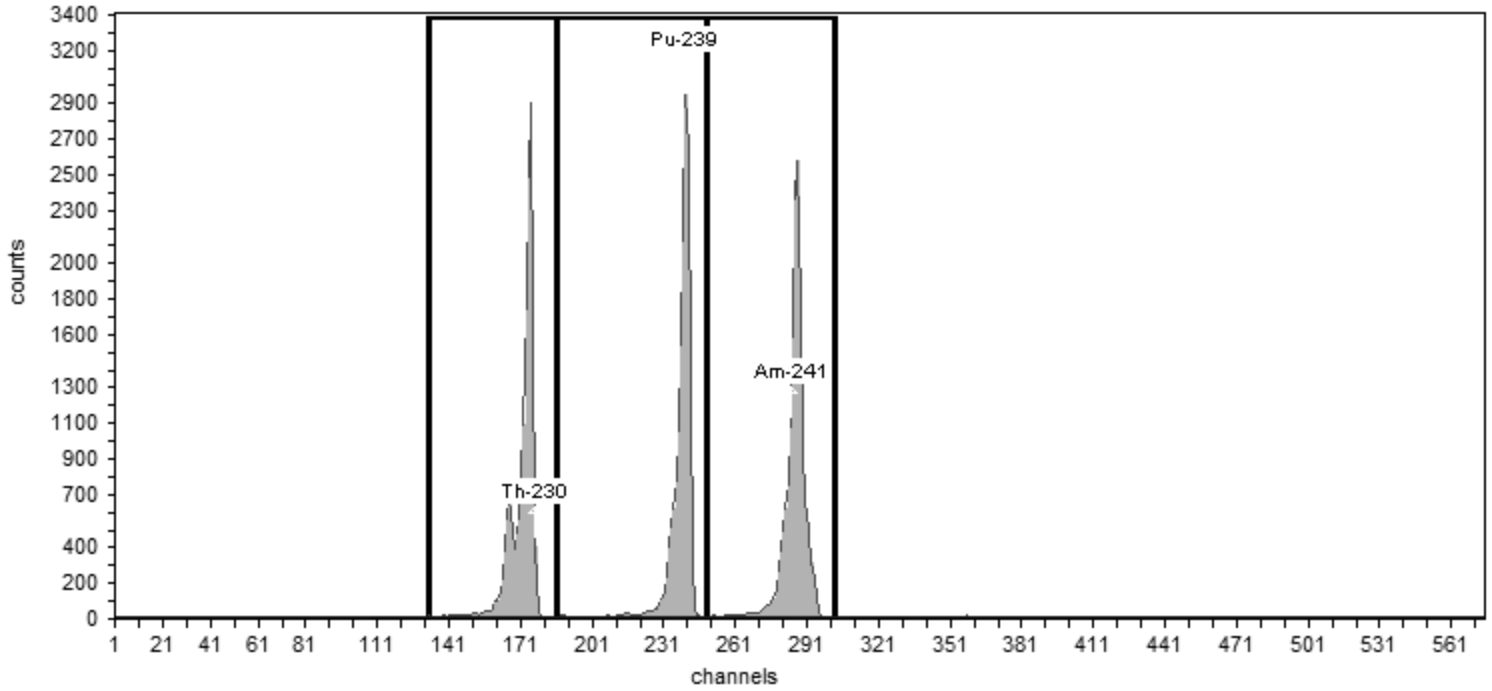
Detector: AV150 , SN: 50-05/R4
Acquisition Start Date: 7/8/2014 5:55:11PM

Live Time: 140.00 min.
Real Time: 140.01 min.

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency Calibration Name: IC-8876;AV150-20140709

Efficiency: 26.00% +/- 0.31% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: Yes
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	27.03	15,594.00	111.39
Pu-239	240	5,155.40	186	249	29.79	15,292.00	109.23
Am-241	284	5,485.70	249	303	31.31	16,064.00	114.74

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
5:48:09PM 7/8/2014

Calibration

Sample Name: IC-8877;AV165-20140706
Description:
Detector: AV165

Analyst: 60040
Analysis Date: 7/8/2014 5:48:08PM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82236-334
Prepared by: Analytics
Description:

Certification Date: 6/2/2010 12:00:00PM

Acquisition

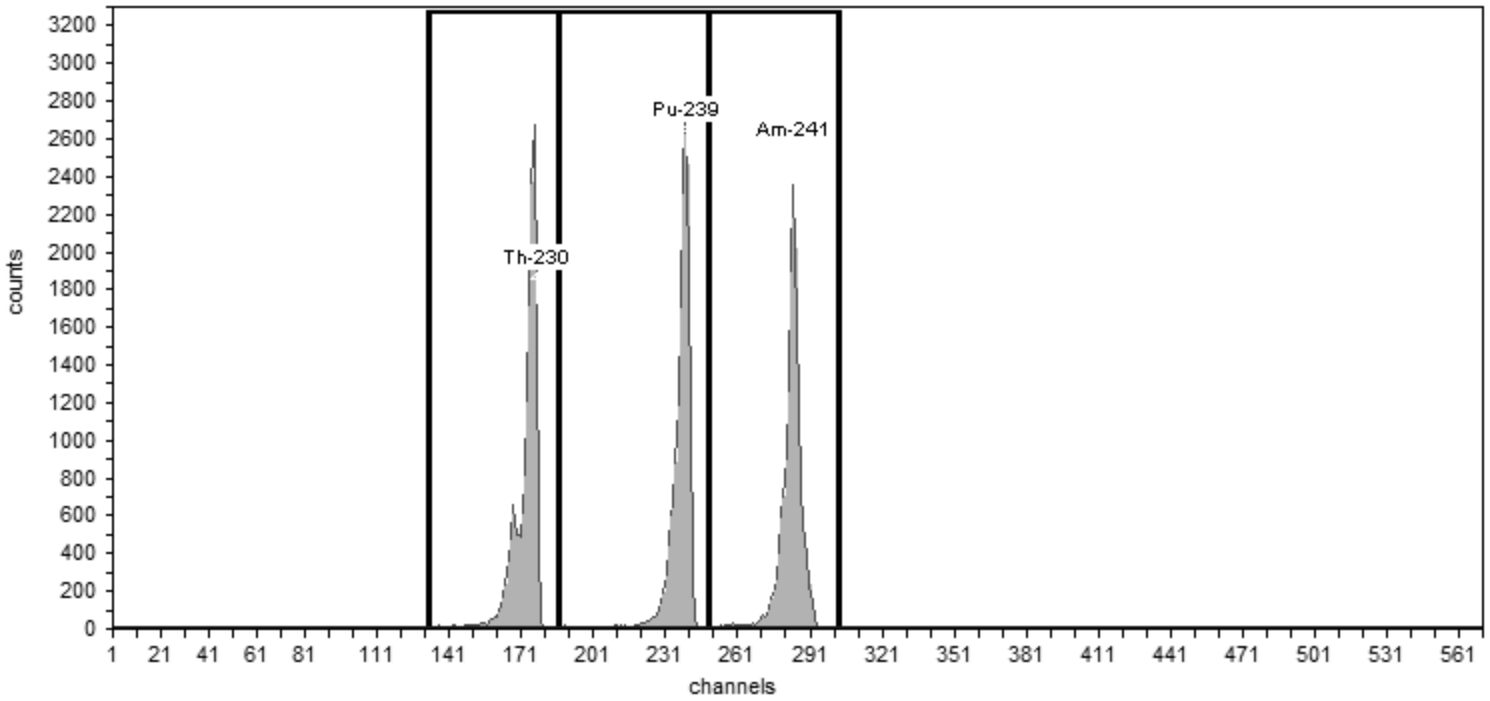
Detector: AV165 , SN: 50-112F7
Acquisition Start Date: 7/6/2014 9:29:20PM

Live Time: 140.00 min.
Real Time: 140.01 min.

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency Calibration Name: IC-8877;AV165-20140706

Efficiency: 26.55% +/- 0.32% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: Yes
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	29.96	15,534.00	110.96
Pu-239	240	5,155.40	186	249	32.90	15,551.00	111.08
Am-241	284	5,485.70	249	303	31.83	14,998.00	107.13

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
7:02:58PM 7/21/2014

Calibration

Sample Name: IC-9793;AV168-20140706
Description:
Detector: AV168

Analyst: 60040
Analysis Date: 7/6/2014 9:06:10PM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82241-334
Prepared by: Analytics
Description:

Certification Date: 6/8/2010 12:00:00PM

Acquisition

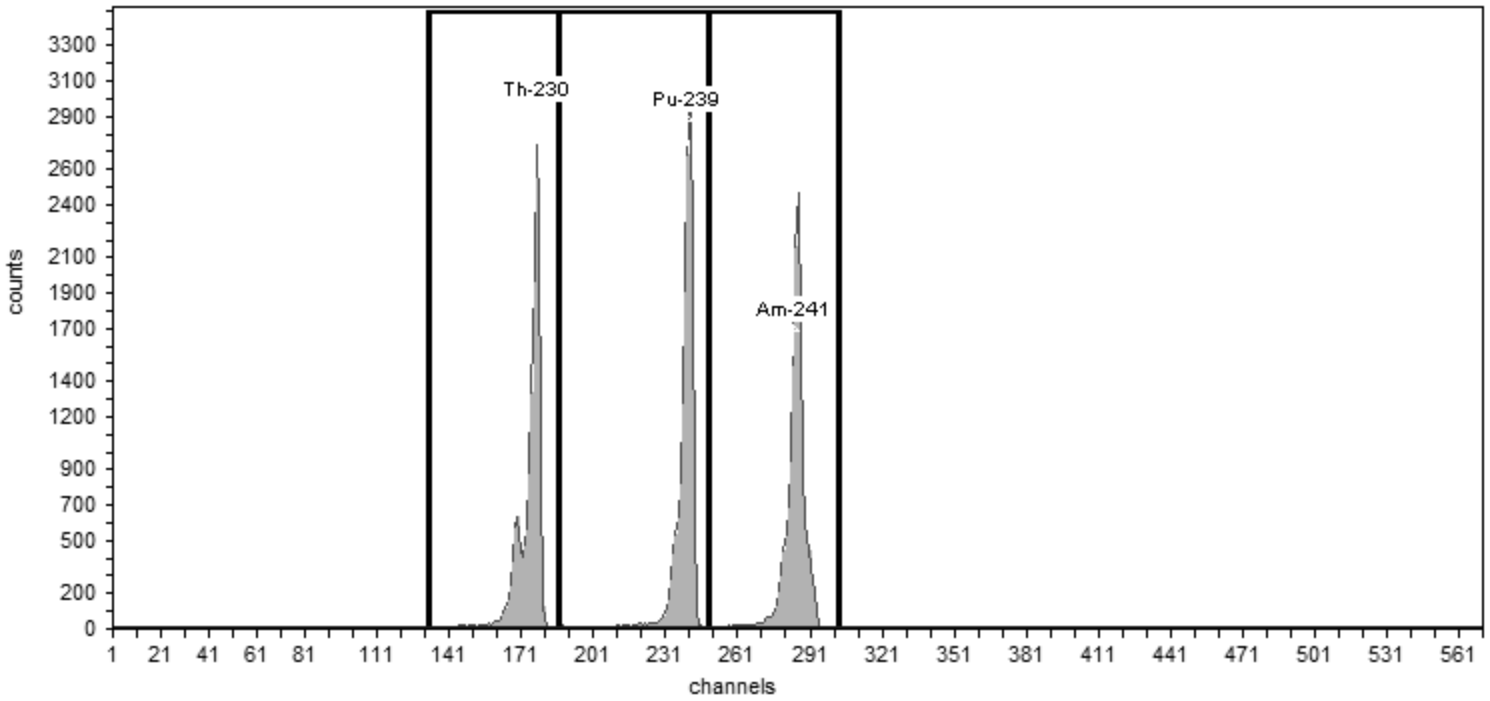
Detector: AV168 , SN: 50-113 G4
Acquisition Start Date: 7/6/2014 6:43:34PM

Live Time: 140.00 min.
Real Time: 140.01 min.

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency Calibration Name: IC-9793;AV168-20140706

Efficiency: 26.32% +/- 0.32% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: Yes
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	27.13	14,694.00	104.96
Pu-239	240	5,155.40	186	249	29.98	15,058.00	107.56
Am-241	284	5,485.70	249	303	30.21	14,521.00	103.72

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
9:06:29PM 7/6/2014

Calibration

Sample Name: IC-9885;AV173-20140706
Description:
Detector: AV173

Analyst: 60040
Analysis Date: 7/6/2014 9:06:28PM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82246-334
Prepared by: Analytics
Description:

Certification Date: 6/9/2010 12:00:00PM

Acquisition

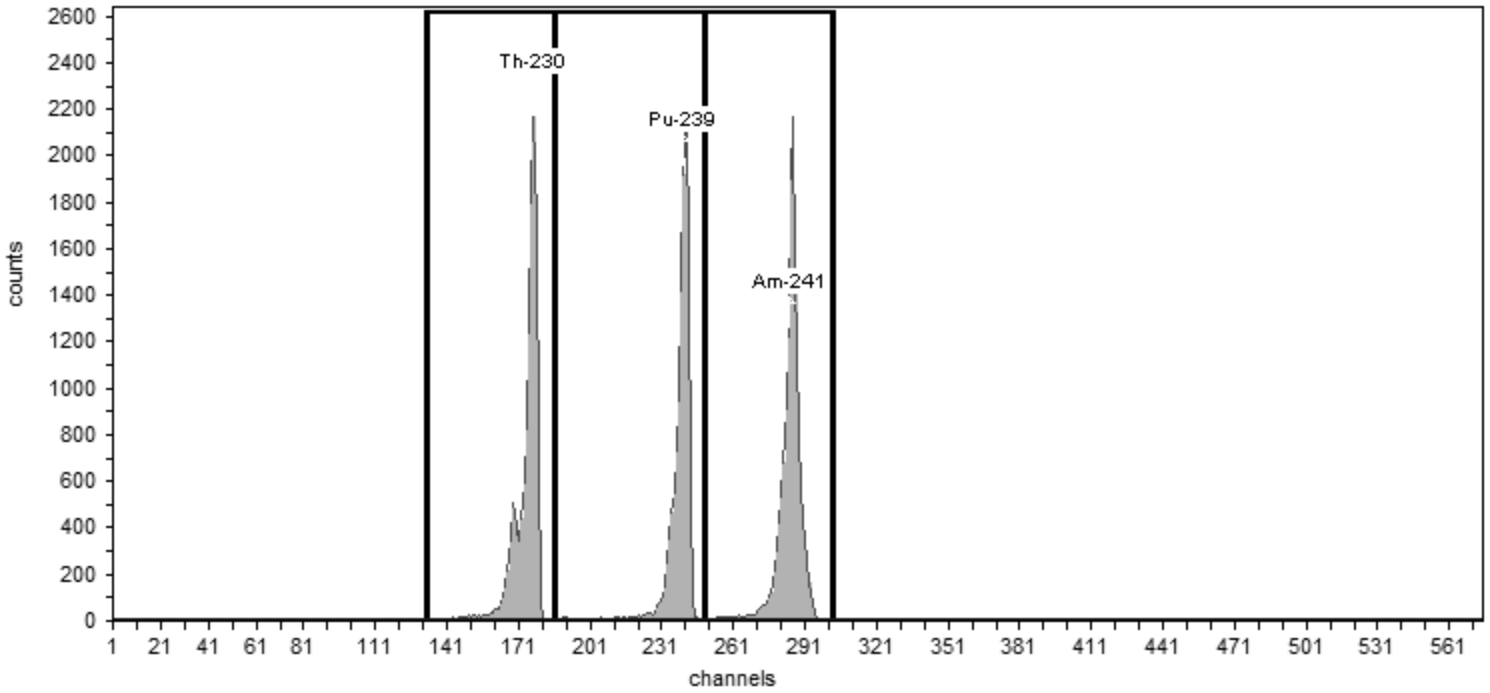
Detector: AV173 , SN: 50-112 Y4
Acquisition Start Date: 7/6/2014 6:44:54PM

Live Time: 140.00 min.
Real Time: 140.01 min.

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency Calibration Name: IC-9885;AV173-20140706

Efficiency: 26.23% +/- 0.38% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: Yes
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	29.71	12,434.00	88.81
Pu-239	240	5,155.40	186	249	30.71	11,630.00	83.07
Am-241	284	5,485.70	249	303	29.92	13,151.00	93.94

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
7:03:26PM 7/21/2014

Calibration

Sample Name: IC-9792;AV181-20140702
Description:
Detector: AV181

Analyst: 60040
Analysis Date: 7/6/2014 6:16:08PM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82240-334
Prepared by: Analytics
Description:

Certification Date: 6/8/2010 12:00:00PM

Acquisition

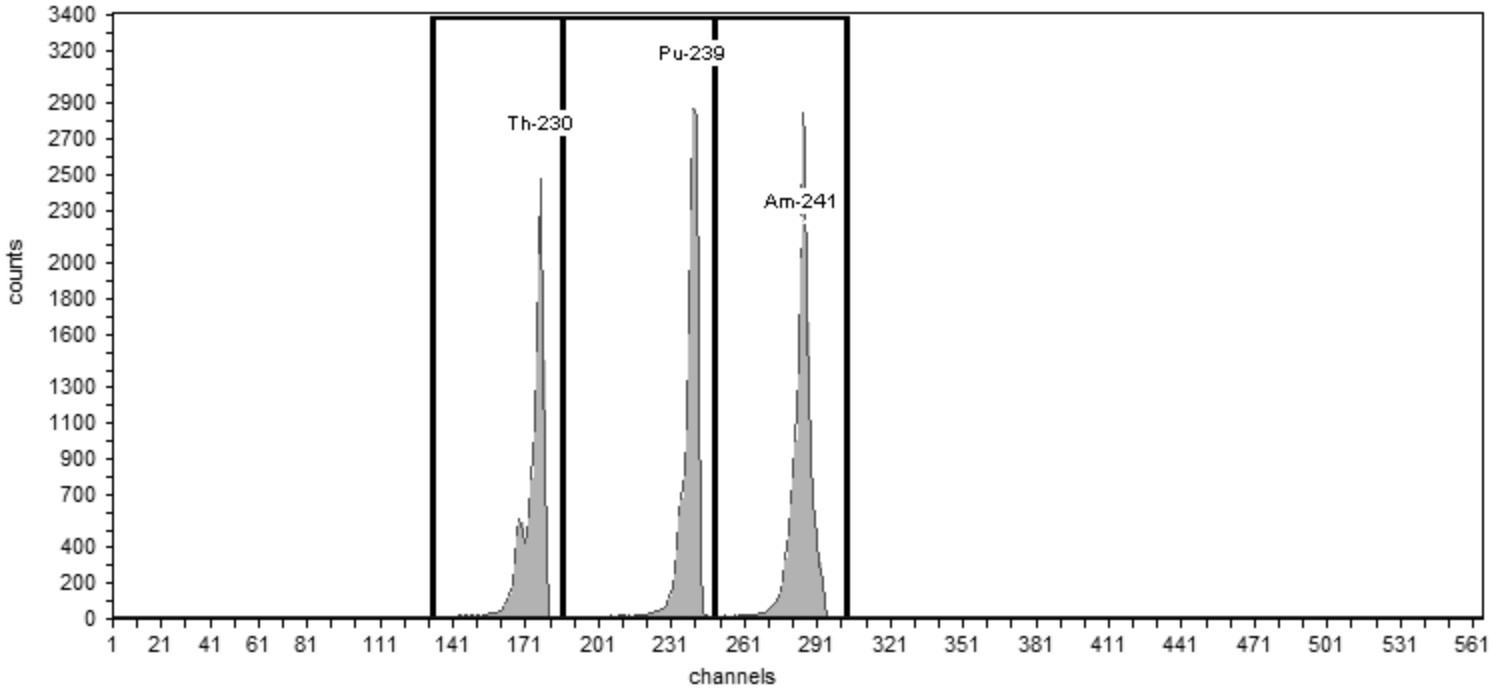
Detector: AV181 , SN: 50-110X1
Acquisition Start Date: 7/2/2014 9:00:50AM

Live Time: 140.00 min.
Real Time: 140.01 min.

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency Calibration Name: IC-9792;AV181-20140702

Efficiency: 26.19% +/- 0.31% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: Yes
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	28.18	13,782.00	98.44
Pu-239	240	5,155.40	186	249	32.37	15,982.00	114.16
Am-241	284	5,485.70	249	303	31.75	18,013.00	128.66

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
7:03:32PM 7/21/2014

Calibration

Sample Name: IC-9793;AV182-20140702
Description:
Detector: AV182

Analyst: 60040
Analysis Date: 7/6/2014 6:16:24PM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82241-334
Prepared by: Analytics
Description:

Certification Date: 6/8/2010 12:00:00PM

Acquisition

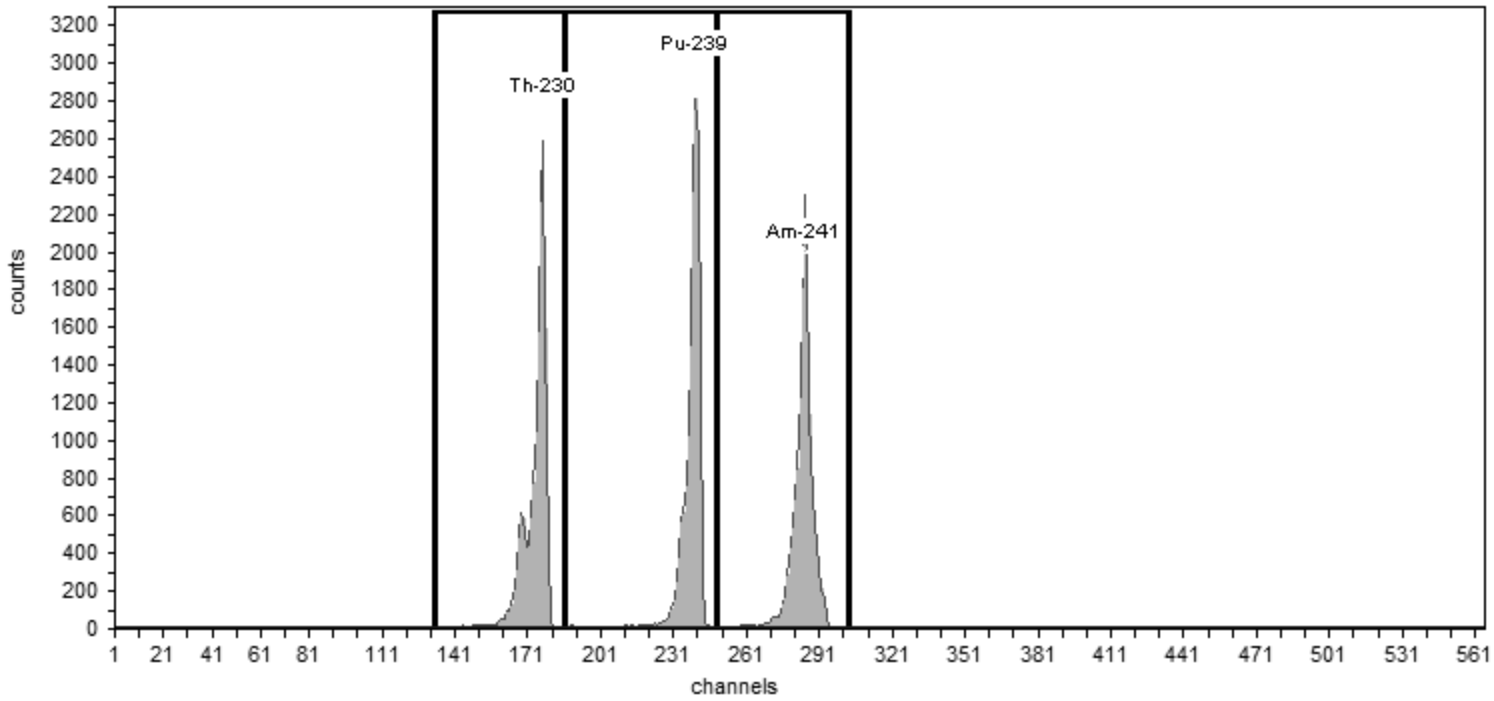
Detector: AV182 , SN: 50-110X6
Acquisition Start Date: 7/2/2014 9:01:02AM

Live Time: 140.00 min.
Real Time: 140.01 min.

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency Calibration Name: IC-9793;AV182-20140702

Efficiency: 26.13% +/- 0.32% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: Yes
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	28.14	14,492.00	103.51
Pu-239	240	5,155.40	186	249	30.75	15,030.00	107.36
Am-241	284	5,485.70	249	303	31.10	14,439.00	103.14

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
7:03:37PM 7/21/2014

Calibration

Sample Name: IC-9795;AV184-20140702
Description:
Detector: AV184

Analyst: 60040
Analysis Date: 7/2/2014 12:04:29PM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82243-334
Prepared by: Analytics
Description:

Certification Date: 6/9/2010 12:00:00PM

Acquisition

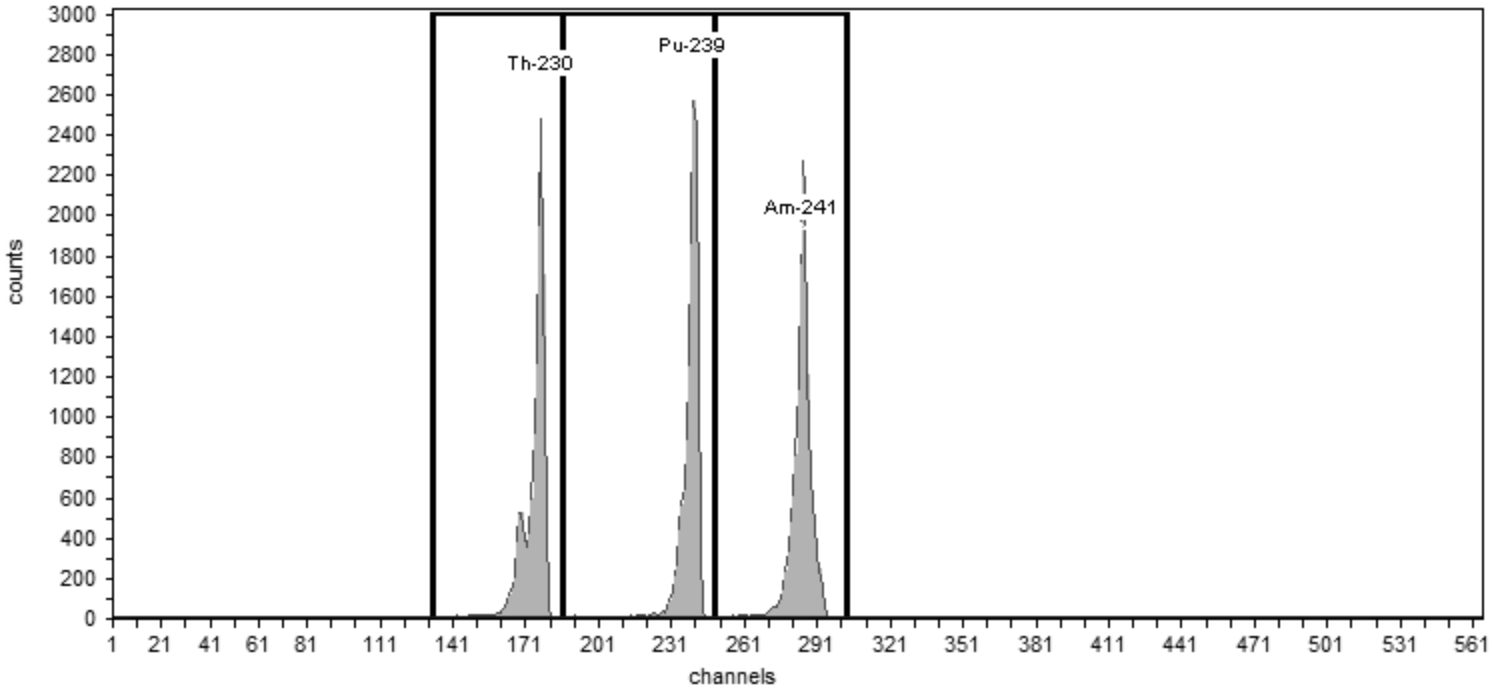
Detector: AV184 , SN: 50-110Y3
Acquisition Start Date: 7/2/2014 9:02:23AM

Live Time: 140.00 min.
Real Time: 140.01 min.

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency Calibration Name: IC-9795;AV184-20140702

Efficiency: 26.39% +/- 0.35% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: Yes
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	25.87	12,866.00	91.90
Pu-239	240	5,155.40	186	249	29.64	13,318.00	95.13
Am-241	284	5,485.70	249	303	30.84	14,135.00	100.96

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
12:04:33PM 7/2/2014

Calibration

Sample Name: IC-9817;AV185-20140702
Description:
Detector: AV185

Analyst: 60040
Analysis Date: 7/2/2014 12:04:32PM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82244-334
Prepared by: Analytics
Description:

Certification Date: 6/9/2010 12:00:00PM

Acquisition

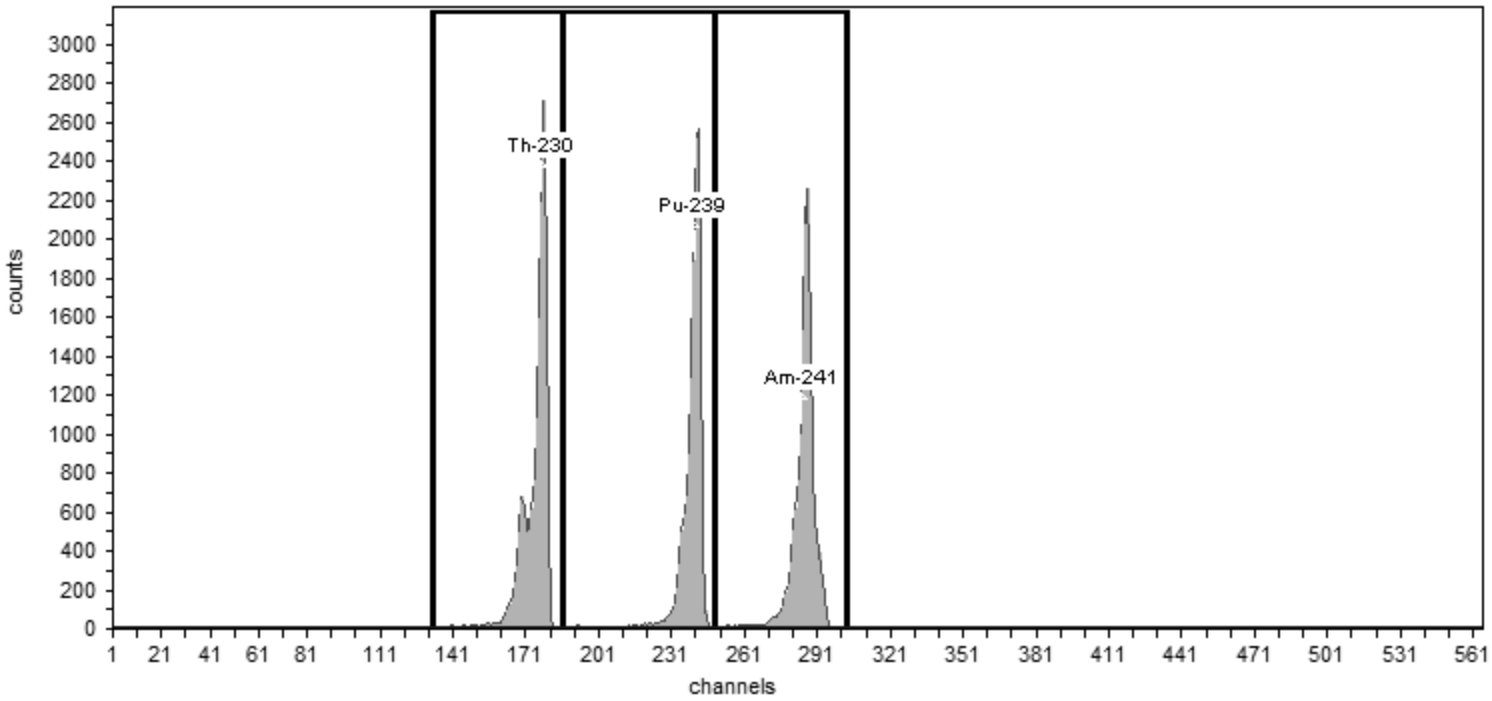
Detector: AV185 , SN: 50-119I1
Acquisition Start Date: 7/2/2014 9:02:33AM

Live Time: 140.00 min.
Real Time: 140.01 min.

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency Calibration Name: IC-9817;AV185-20140702

Efficiency: 25.19% +/- 0.31% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: Yes
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	29.06	15,542.00	111.01
Pu-239	240	5,155.40	186	249	32.38	14,352.00	102.51
Am-241	284	5,485.70	249	303	32.56	14,396.00	102.83

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
12:04:43PM 7/2/2014

Calibration

Sample Name: IC-9886;AV188-20140702
Description:
Detector: AV188

Analyst: 60040
Analysis Date: 7/2/2014 12:04:42PM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82247-334
Prepared by: Analytics
Description:

Certification Date: 6/10/2010 12:00:00PM

Acquisition

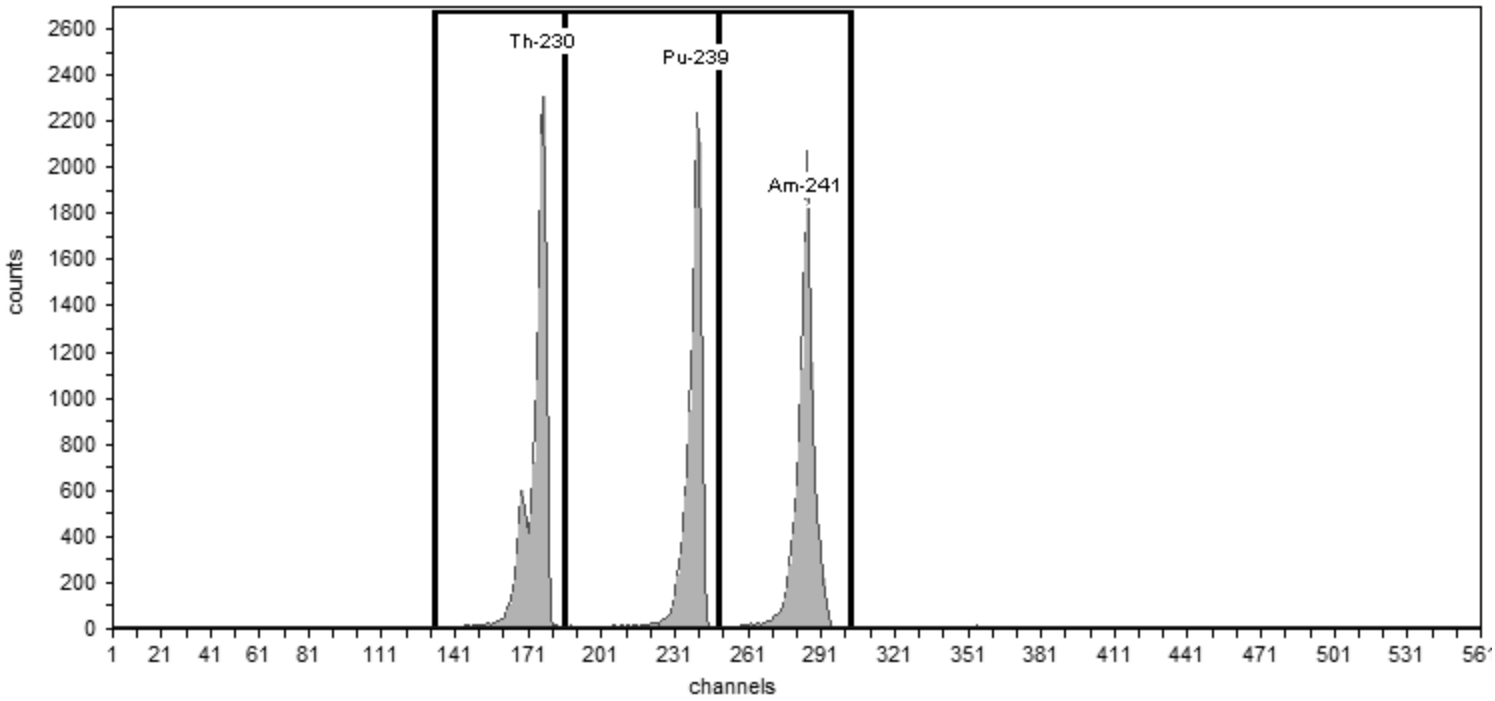
Detector: AV188 , SN: 50-110X4
Acquisition Start Date: 7/2/2014 9:03:09AM

Live Time: 140.00 min.
Real Time: 140.01 min.

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency Calibration Name: IC-9886;AV188-20140702

Efficiency: 25.97% +/- 0.35% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: Yes
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	30.60	13,729.00	98.06
Pu-239	240	5,155.40	186	249	32.56	12,548.00	89.63
Am-241	284	5,485.70	249	303	33.63	13,541.00	96.72

Initial Calibration Verifications

Alpha Spectroscopy Calibration Summary

Detector: AV149

Lab Sample ID	Analysis Date	Reagent ID	Efficiency	Efficiency Limits	Efficiency Recovery	Recovery Limits
IC 160-130244/1	07/08/14 17:54	82234-334_00001	0.2545	0.20-0.32		
ICV 160-130254/1	07/08/14 22:46	82235-334_00001	0.2572	0.20-0.32	101.0	95-105
CCV 160-158306/1	11/19/14 18:43	82234-334_00001	0.2545	0.20-0.32	100.0	95-105

Detector: AV150

Lab Sample ID	Analysis Date	Reagent ID	Efficiency	Efficiency Limits	Efficiency Recovery	Recovery Limits
IC 160-130245/1	07/08/14 17:55	82235-334_00001	0.2600	0.20-0.32		
ICV 160-130255/1	07/08/14 22:47	82236-334_00001	0.2609	0.20-0.32	100.3	95-105
CCV 160-158307/1	11/19/14 18:43	82235-334_00001	0.2552	0.20-0.32	98.2	95-105

Detector: AV165

Lab Sample ID	Analysis Date	Reagent ID	Efficiency	Efficiency Limits	Efficiency Recovery	Recovery Limits
IC 160-130240/1	07/06/14 21:29	82236-334_00001	0.2655	0.20-0.32		
ICV 160-130508/1	07/09/14 00:44	82237-334_00003	0.2631	0.20-0.32	99.1	95-105
CCV 160-158316/1	11/19/14 18:45	82236-334_00001	0.2649	0.20-0.32	99.8	95-105

Detector: AV168

Lab Sample ID	Analysis Date	Reagent ID	Efficiency	Efficiency Limits	Efficiency Recovery	Recovery Limits
IC 160-129705/1	07/06/14 18:43	82241-334_00001	0.2632	0.20-0.32		
ICV 160-130510/1	07/09/14 00:44	82242-334_00001	0.2558	0.20-0.32	97.2	95-105
CCV 160-158317/1	11/19/14 18:45	82241-334_00001	0.2567	0.20-0.32	97.5	95-105

Detector: AV173

Lab Sample ID	Analysis Date	Reagent ID	Efficiency	Efficiency Limits	Efficiency Recovery	Recovery Limits
IC 160-129710/1	07/06/14 18:44	82246-334_00001	0.2623	0.20-0.32		
ICV 160-130515/1	07/09/14 00:46	82247-334_00001	0.2580	0.20-0.32	98.4	95-105
CCV 160-158320/1	11/19/14 18:45	82246-334_00001	0.2603	0.20-0.32	99.2	95-105

Detector: AV181

Lab Sample ID	Analysis Date	Reagent ID	Efficiency	Efficiency Limits	Efficiency Recovery	Recovery Limits
IC 160-129668/1	07/02/14 09:00	82240-334_00001	0.2619	0.20-0.32		
ICV 160-130523/1	07/09/14 18:40	82241-334_00001	0.2632	0.20-0.32	100.5	95-105
CCV 160-158241/2	11/18/14 20:50	82240-334_00001	0.2584	0.20-0.32	98.7	95-105

Detector: AV182

Lab Sample ID	Analysis Date	Reagent ID	Efficiency	Efficiency Limits	Efficiency Recovery	Recovery Limits
IC 160-129669/1	07/02/14 09:01	82241-334_00001	0.2613	0.20-0.32		
ICV 160-130524/1	07/09/14 18:40	82242-334_00001	0.2545	0.20-0.32	97.4	95-105
CCV 160-158325/1	11/19/14 21:14	82241-334_00001	0.2594	0.20-0.32	99.3	95-105

Detector: AV184

Lab Sample ID	Analysis Date	Reagent ID	Efficiency	Efficiency Limits	Efficiency Recovery	Recovery Limits
IC 160-129671/1	07/02/14 09:02	82243-334_00001	0.2639	0.20-0.32		
ICV 160-130526/1	07/09/14 18:40	82244-334_00001	0.2579	0.20-0.32	97.7	95-105
CCV 160-158326/1	11/19/14 18:46	82243-334_00001	0.2635	0.20-0.32	99.9	95-105

Alpha Spectroscopy Calibration Summary

Detector: AV185

Lab Sample ID	Analysis Date	Reagent ID	Efficiency	Efficiency Limits	Efficiency Recovery	Recovery Limits
IC 160-129672/1	07/02/14 09:02	82244-334_00001	0.2519	0.20-0.32		
ICV 160-130527/1	07/09/14 18:40	82245-334_00001	0.2586	0.20-0.32	102.7	95-105
CCV 160-158327/1	11/19/14 23:05	82244-334_00001	0.2567	0.20-0.32	101.9	95-105

Detector: AV188

Lab Sample ID	Analysis Date	Reagent ID	Efficiency	Efficiency Limits	Efficiency Recovery	Recovery Limits
IC 160-129675/1	07/02/14 09:03	82247-334_00001	0.2597	0.20-0.32		
ICV 160-131003/1	07/10/14 21:50	82232-334_00001	0.2695	0.20-0.32	103.8	95-105
CCV 160-158328/1	11/19/14 18:46	82247-334_00001	0.2560	0.20-0.32	98.6	95-105

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
12:35:53AM 7/9/2014

Calibration

Sample Name: ICV-8876;AV149-20140709
Description:
Detector: AV149

Analyst: 60040
Analysis Date: 7/9/2014 12:35:52AM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82235-334
Prepared by: Analytics
Description:

Certification Date: 6/4/2010 12:00:00PM

Acquisition

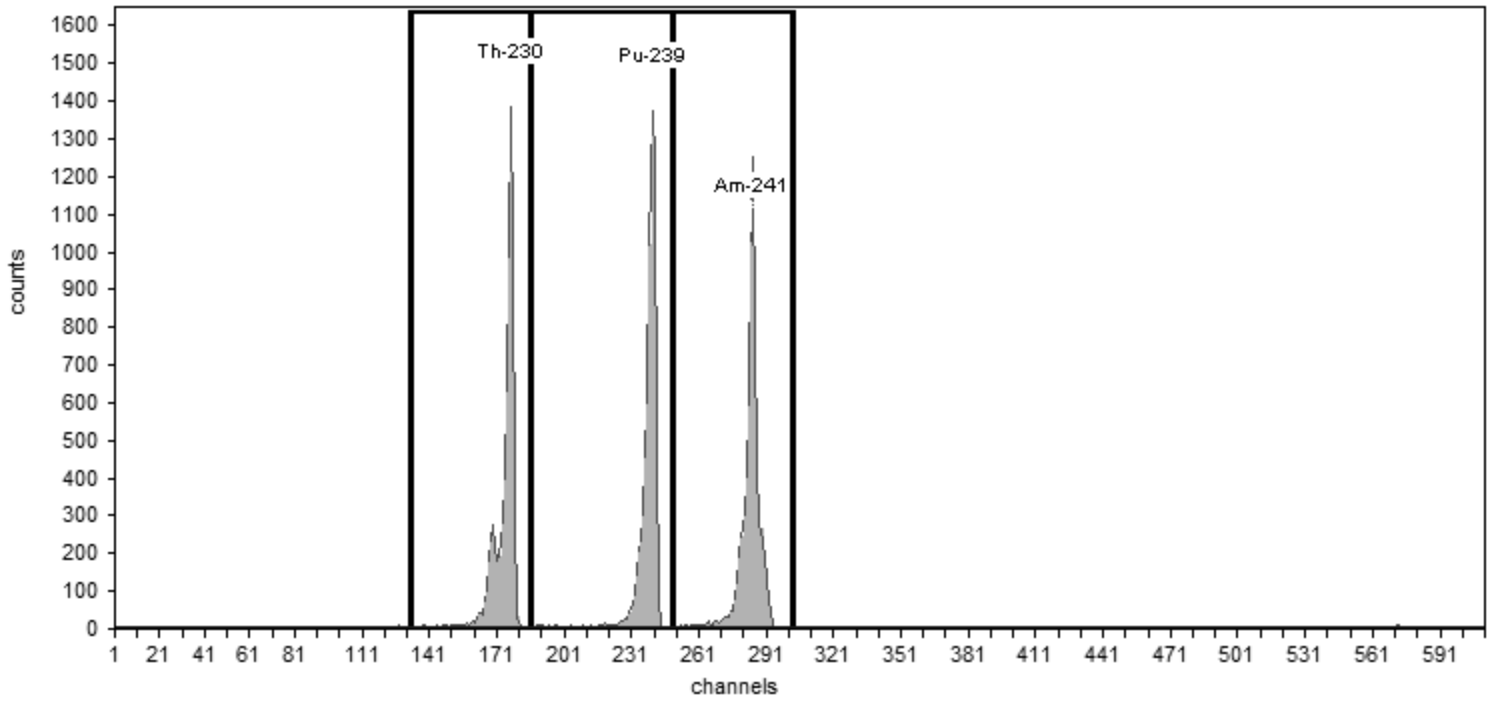
Detector: AV149 , SN: 50-05/R3
Acquisition Start Date: 7/8/2014 10:46:03PM

Live Time: 60.00 min.
Real Time: 60.00 min.

Efficiency Calibration Name: ICV-8876;AV149-2014070

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 25.72% +/- 0.41% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	24.64	6,708.00	111.80
Pu-239	240	5,155.40	186	249	26.15	6,501.00	108.35
Am-241	284	5,485.70	249	303	25.21	6,697.00	111.62

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
12:35:56AM 7/9/2014

Calibration

Sample Name: ICV-8877;AV150-20140709
Description:
Detector: AV150

Analyst: 60040
Analysis Date: 7/9/2014 12:35:55AM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82236-334
Prepared by: Analytics
Description:

Certification Date: 6/2/2010 12:00:00PM

Acquisition

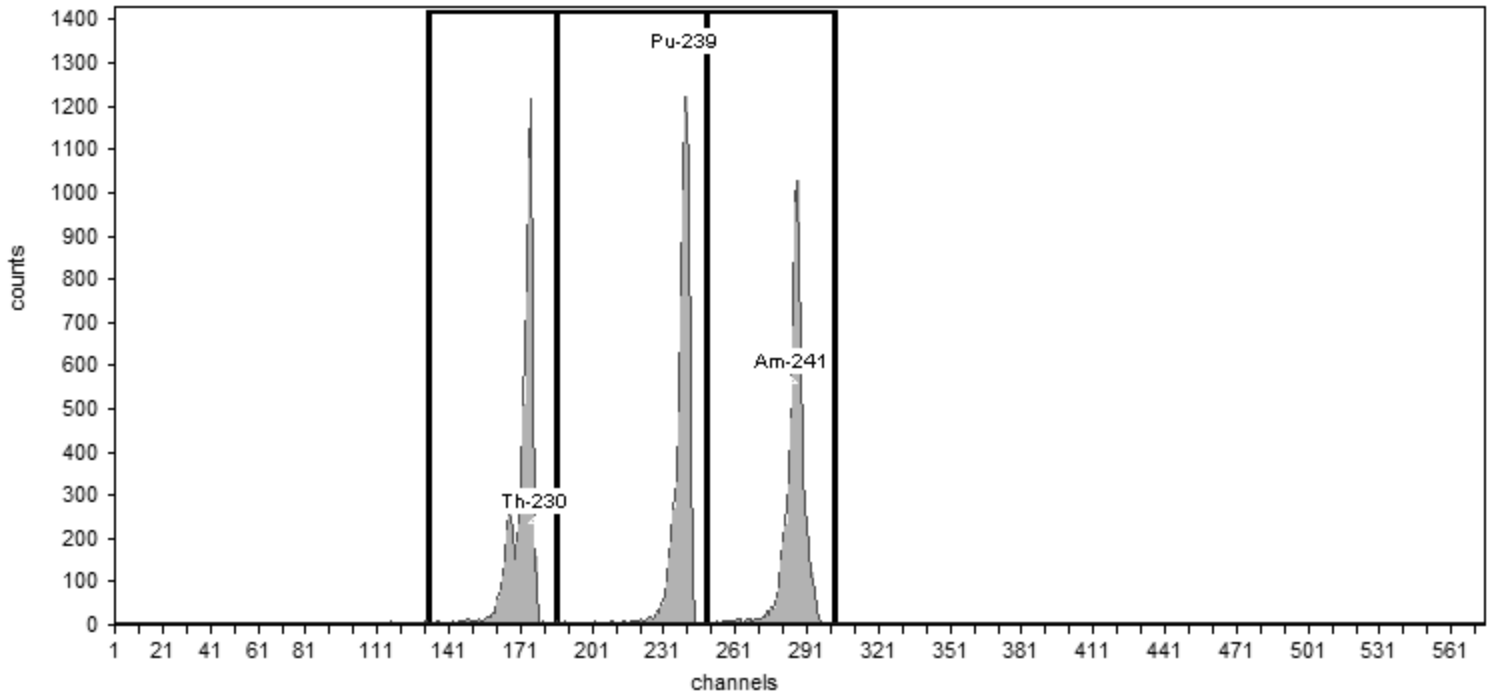
Detector: AV150 , SN: 50-05/R4
Acquisition Start Date: 7/8/2014 10:47:44PM

Live Time: 60.00 min.
Real Time: 60.00 min.

Efficiency Calibration Name: ICV-8877;AV150-2014070

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 26.09% +/- 0.42% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	27.78	6,567.00	109.45
Pu-239	240	5,155.40	186	249	32.01	6,433.00	107.22
Am-241	284	5,485.70	249	303	32.22	6,387.00	106.45

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
7:09:04PM 7/21/2014

Calibration

Sample Name: ICV-9520;AV165-20140709
Description:
Detector: AV165

Analyst: 60040
Analysis Date: 7/9/2014 6:25:57PM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82237-334
Prepared by: Analytics
Description:

Certification Date: 6/1/2010 12:00:00PM

Acquisition

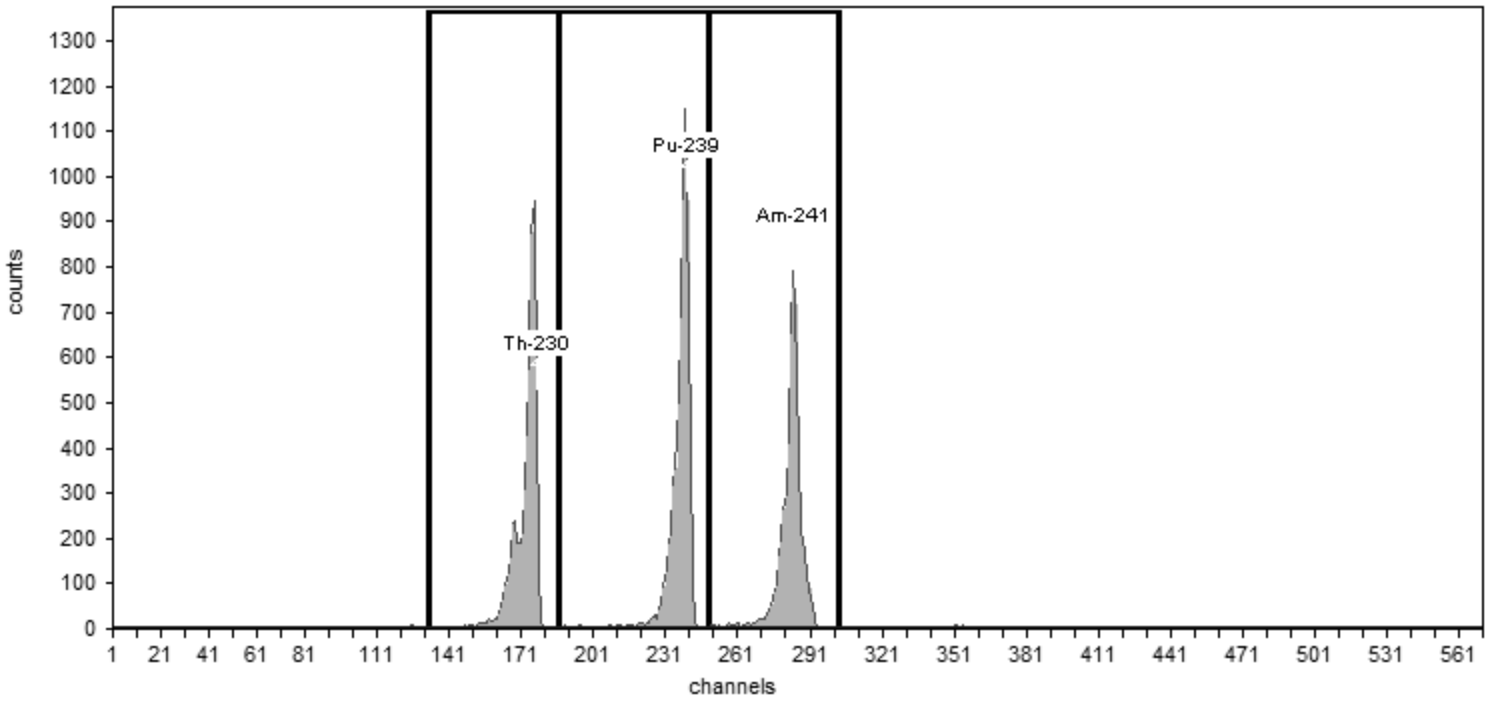
Detector: AV165 , SN: 50-112F7
Acquisition Start Date: 7/9/2014 12:44:16AM

Live Time: 60.00 min.
Real Time: 60.00 min.

Efficiency Calibration Name: ICV-9520;AV165-2014070

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 26.31% +/- 0.47% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	28.11	5,494.00	91.57
Pu-239	240	5,155.40	186	249	31.87	6,282.00	104.70
Am-241	284	5,485.70	249	303	30.44	5,136.00	85.60

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
6:26:19PM 7/9/2014

Calibration

Sample Name: ICV-9794;AV168-20140709
Description:
Detector: AV168

Analyst: 60040
Analysis Date: 7/9/2014 6:26:17PM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82242-334
Prepared by: Analytics
Description:

Certification Date: 6/8/2010 12:00:00PM

Acquisition

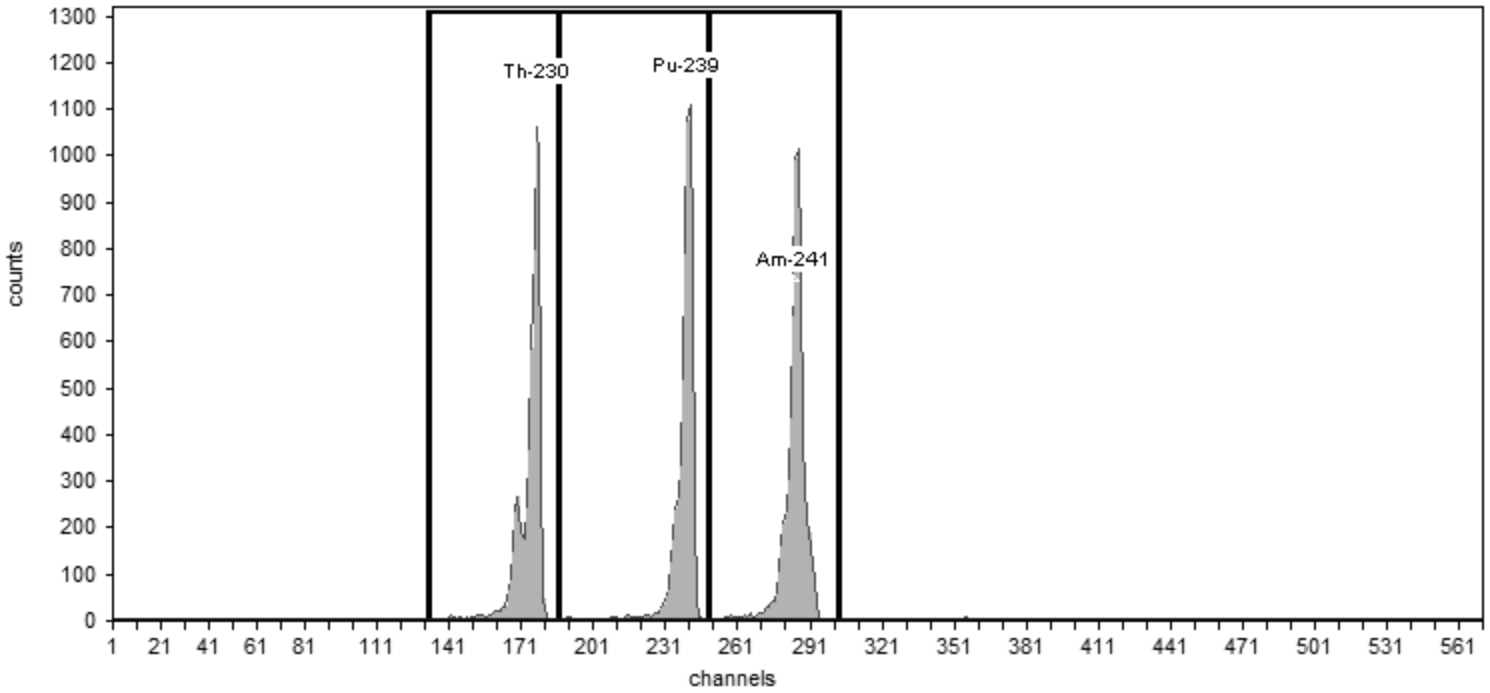
Detector: AV168 , SN: 50-113 G4
Acquisition Start Date: 7/9/2014 12:44:54AM

Live Time: 60.00 min.
Real Time: 60.00 min.

Efficiency Calibration Name: ICV-9794;AV168-2014070

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 25.58% +/- 0.43% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	29.56	6,014.00	100.23
Pu-239	240	5,155.40	186	249	31.59	5,991.00	99.85
Am-241	284	5,485.70	249	303	32.57	6,512.00	108.53

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
6:26:40PM 7/9/2014

Calibration

Sample Name: ICV-9886;AV173-20140709
Description:
Detector: AV173

Analyst: 60040
Analysis Date: 7/9/2014 6:26:39PM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82247-334
Prepared by: Analytics
Description:

Certification Date: 6/10/2010 12:00:00PM

Acquisition

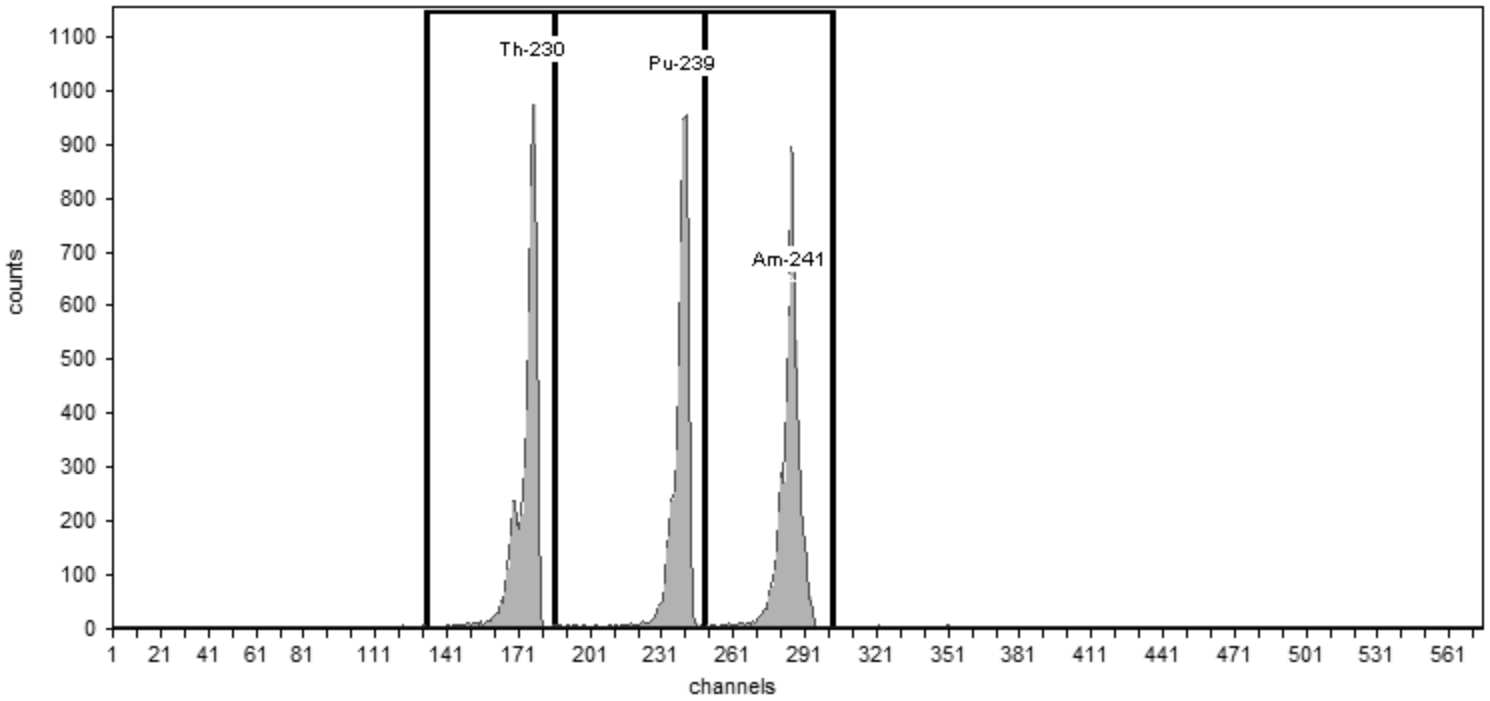
Detector: AV173 , SN: 50-112 Y4
Acquisition Start Date: 7/9/2014 12:46:04AM

Live Time: 60.00 min.
Real Time: 60.00 min.

Efficiency Calibration Name: ICV-9886;AV173-2014070

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 25.80% +/- 0.46% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	29.85	5,724.00	95.40
Pu-239	240	5,155.40	186	249	32.32	5,409.00	90.15
Am-241	284	5,485.70	249	303	31.95	5,825.00	97.08

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
7:09:35PM 7/21/2014

Calibration

Sample Name: ICV-9793;AV181-20140709
Description:
Detector: AV181

Analyst: 60040
Analysis Date: 7/9/2014 7:49:10PM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82241-334
Prepared by: Analytics
Description:

Certification Date: 6/8/2010 12:00:00PM

Acquisition

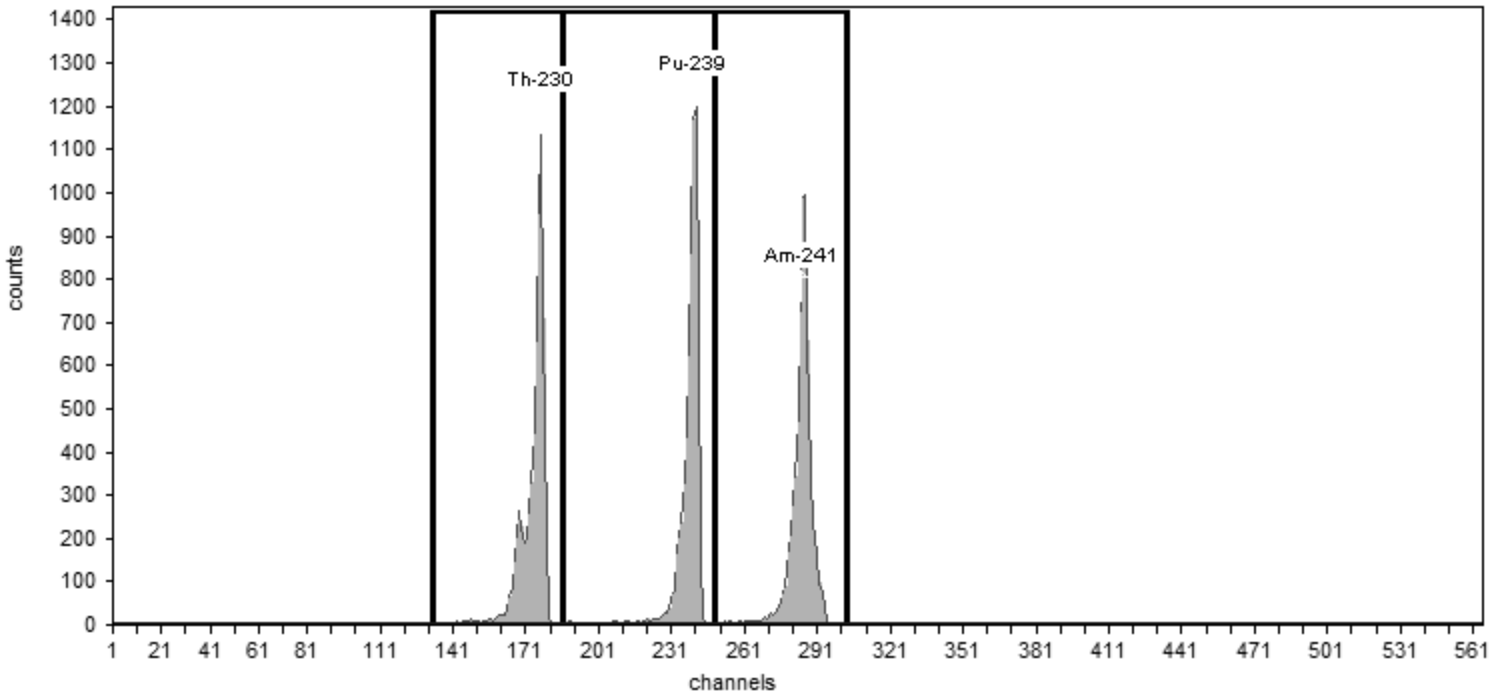
Detector: AV181 , SN: 50-110X1
Acquisition Start Date: 7/9/2014 6:40:05PM

Live Time: 60.00 min.
Real Time: 60.00 min.

Efficiency Calibration Name: ICV-9793;AV181-2014070

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 26.32% +/- 0.43% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	27.50	6,217.00	103.62
Pu-239	240	5,155.40	186	249	31.83	6,412.00	106.87
Am-241	284	5,485.70	249	303	32.91	6,353.00	105.88

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
7:49:14PM 7/9/2014

Calibration

Sample Name: ICV-9794;AV182-20140709
Description:
Detector: AV182

Analyst: 60040
Analysis Date: 7/9/2014 7:49:13PM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82242-334
Prepared by: Analytics
Description:

Certification Date: 6/8/2010 12:00:00PM

Acquisition

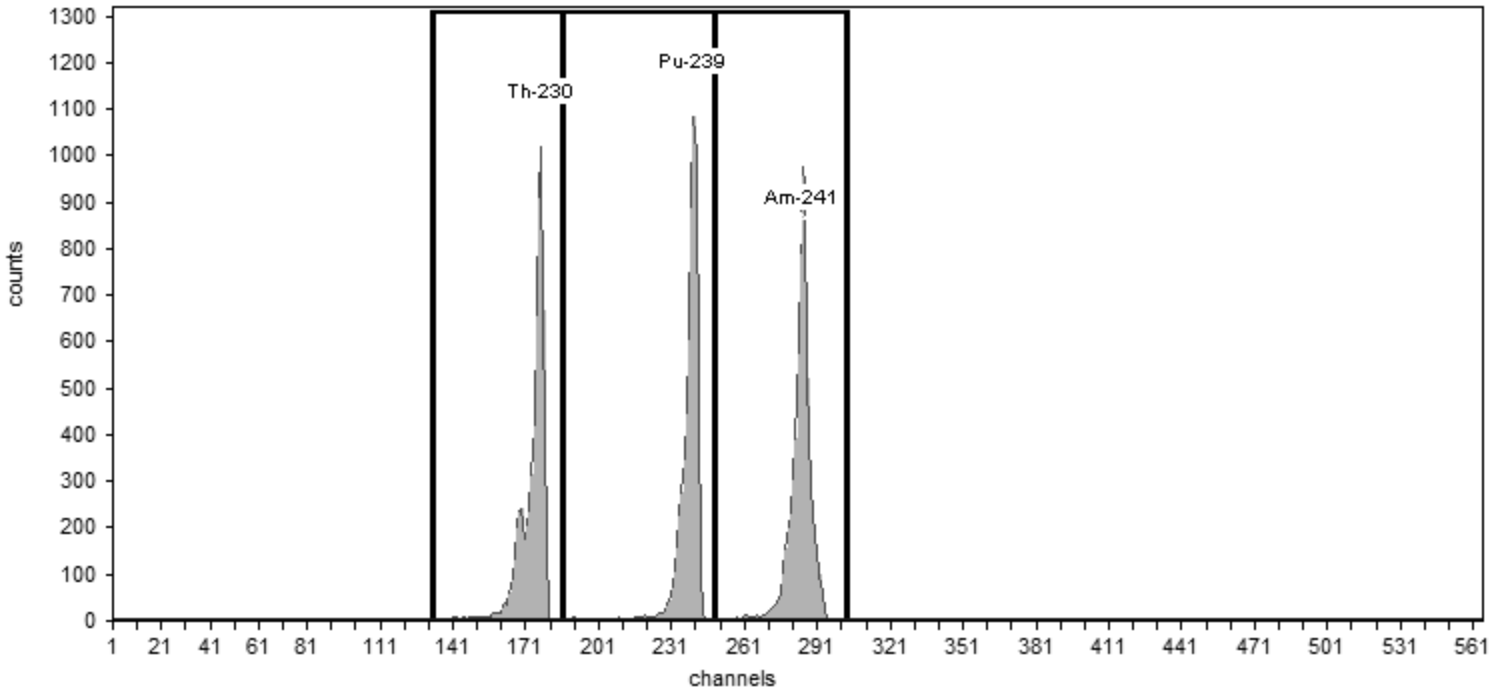
Detector: AV182 , SN: 50-110X6
Acquisition Start Date: 7/9/2014 6:40:16PM

Live Time: 60.00 min.
Real Time: 60.00 min.

Efficiency Calibration Name: ICV-9794;AV182-2014070

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch²

Efficiency: 25.45% +/- 0.43% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	29.32	5,919.00	98.65
Pu-239	240	5,155.40	186	249	31.89	6,025.00	100.42
Am-241	284	5,485.70	249	303	34.17	6,483.00	108.05

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
7:09:40PM 7/21/2014

Calibration

Sample Name: ICV-9817;AV184-20140709
Description:
Detector: AV184

Analyst: 60040
Analysis Date: 7/9/2014 7:49:20PM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82244-334
Prepared by: Analytics
Description:

Certification Date: 6/9/2010 12:00:00PM

Acquisition

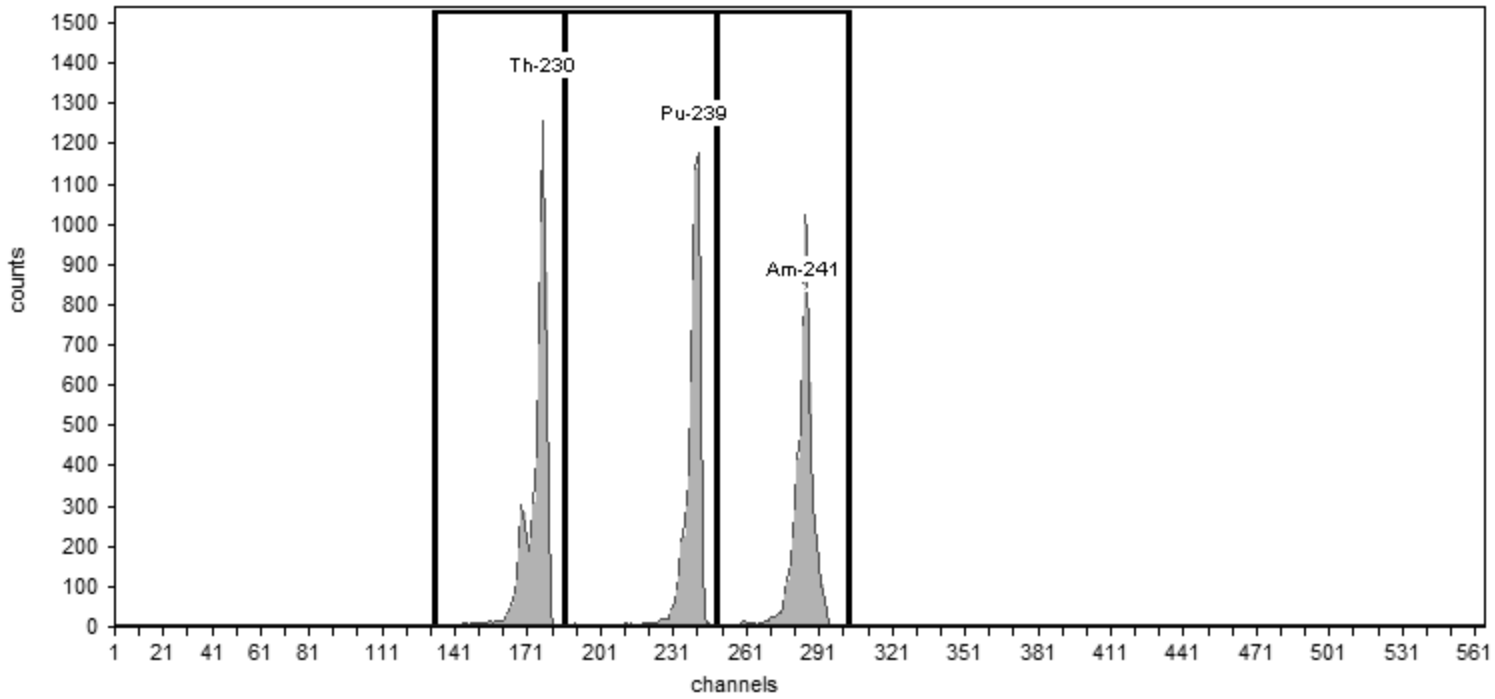
Detector: AV184 , SN: 50-110Y3
Acquisition Start Date: 7/9/2014 6:40:45PM

Live Time: 60.00 min.
Real Time: 60.00 min.

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch²

Efficiency Calibration Name: ICV-9817;AV184-2014070

Efficiency: 25.79% +/- 0.42% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	27.64	6,767.00	112.78
Pu-239	240	5,155.40	186	249	31.55	6,202.00	103.37
Am-241	284	5,485.70	249	303	31.07	6,465.00	107.75

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
7:49:26PM 7/9/2014

Calibration

Sample Name: ICV-9884;AV185-20140709
Description:
Detector: AV185

Analyst: 60040
Analysis Date: 7/9/2014 7:49:25PM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82245-334
Prepared by: Analytics
Description:

Certification Date: 6/9/2010 12:00:00PM

Acquisition

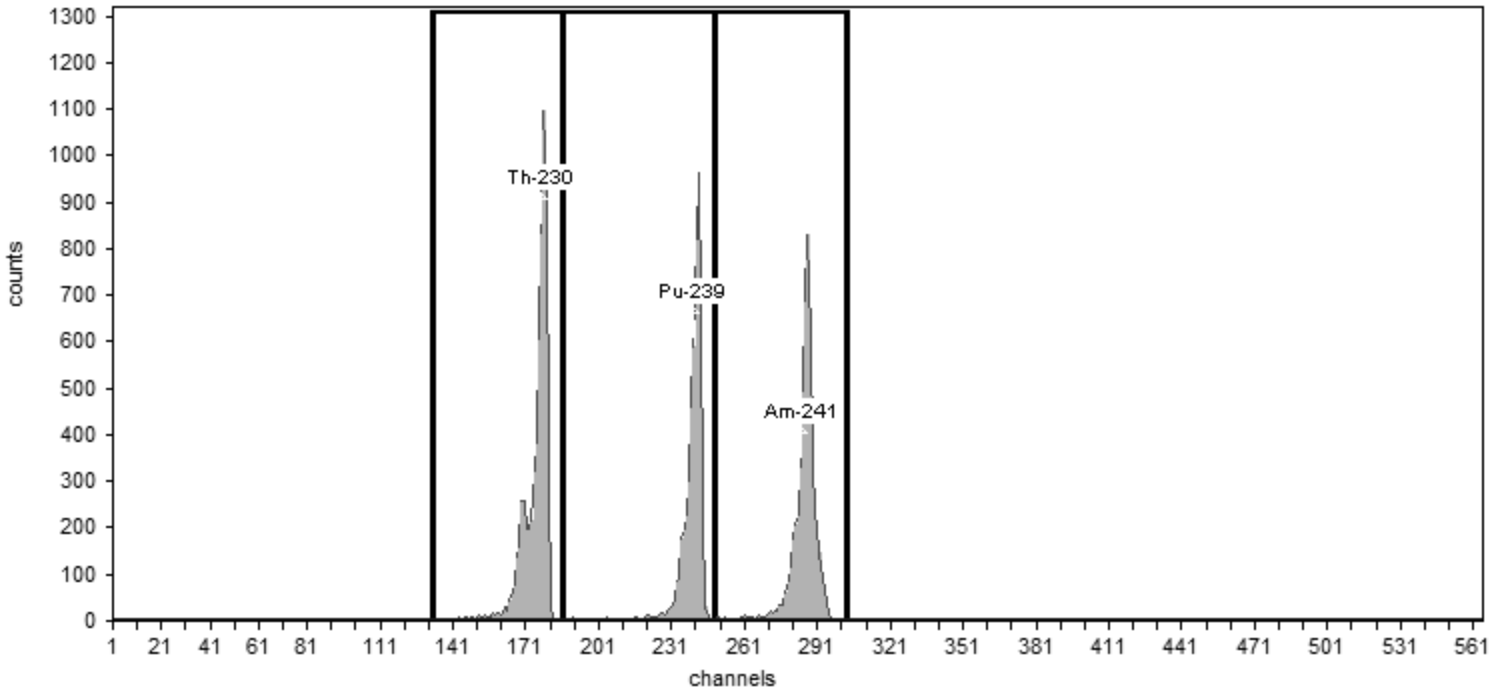
Detector: AV185 , SN: 50-119I1
Acquisition Start Date: 7/9/2014 6:40:56PM

Live Time: 60.00 min.
Real Time: 60.00 min.

Efficiency Calibration Name: ICV-9884;AV185-2014070

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch²

Efficiency: 25.86% +/- 0.48% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	28.79	6,251.00	104.18
Pu-239	240	5,155.40	186	249	31.71	5,045.00	84.08
Am-241	284	5,485.70	249	303	31.34	5,151.00	85.85

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
5:09:50PM 7/13/2014

Calibration

Sample Name: ICV-7107;AV188-20140710
Description:
Detector: AV188

Analyst: 60040
Analysis Date: 7/13/2014 5:09:49PM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82232-334
Prepared by: Analytics
Description:

Certification Date: 6/3/2010 12:00:00PM

Acquisition

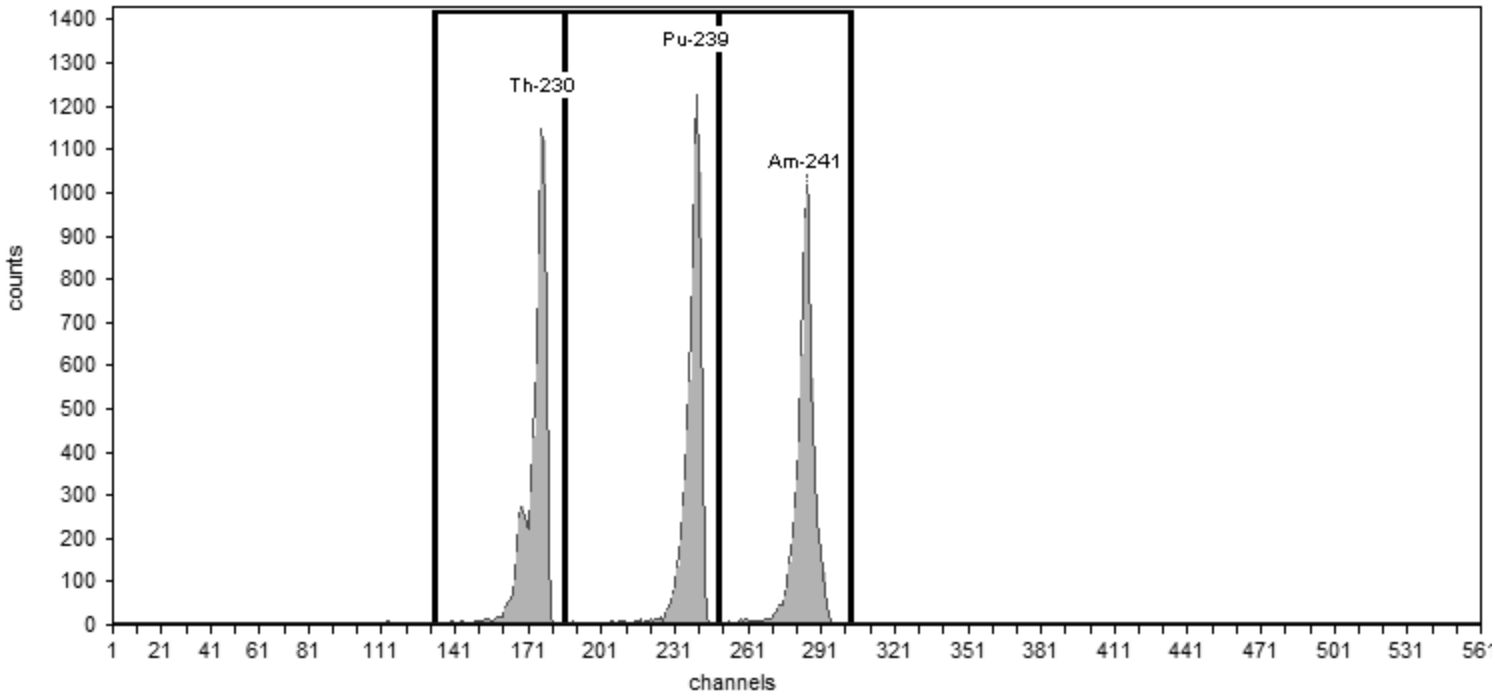
Detector: AV188 , SN: 50-110X4
Acquisition Start Date: 7/10/2014 9:50:21PM

Live Time: 60.00 min.
Real Time: 60.00 min.

Efficiency Calibration Name: ICV-7107;AV188-2014071

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 26.95% +/- 0.41% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	33.06	7,205.00	120.08
Pu-239	240	5,155.40	186	249	33.68	7,111.00	118.52
Am-241	284	5,485.70	249	303	34.18	7,048.00	117.47

Monthly Calibration Verifications

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
8:57:14PM 11/19/2014

Calibration

Sample Name: CCV-8875;AV149-20141119
Description:
Detector: AV149

Analyst: 60040
Analysis Date: 11/19/2014 8:57:13PM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82234-334
Prepared by: Analytics
Description:

Certification Date: 6/2/2010 12:00:00PM

Acquisition

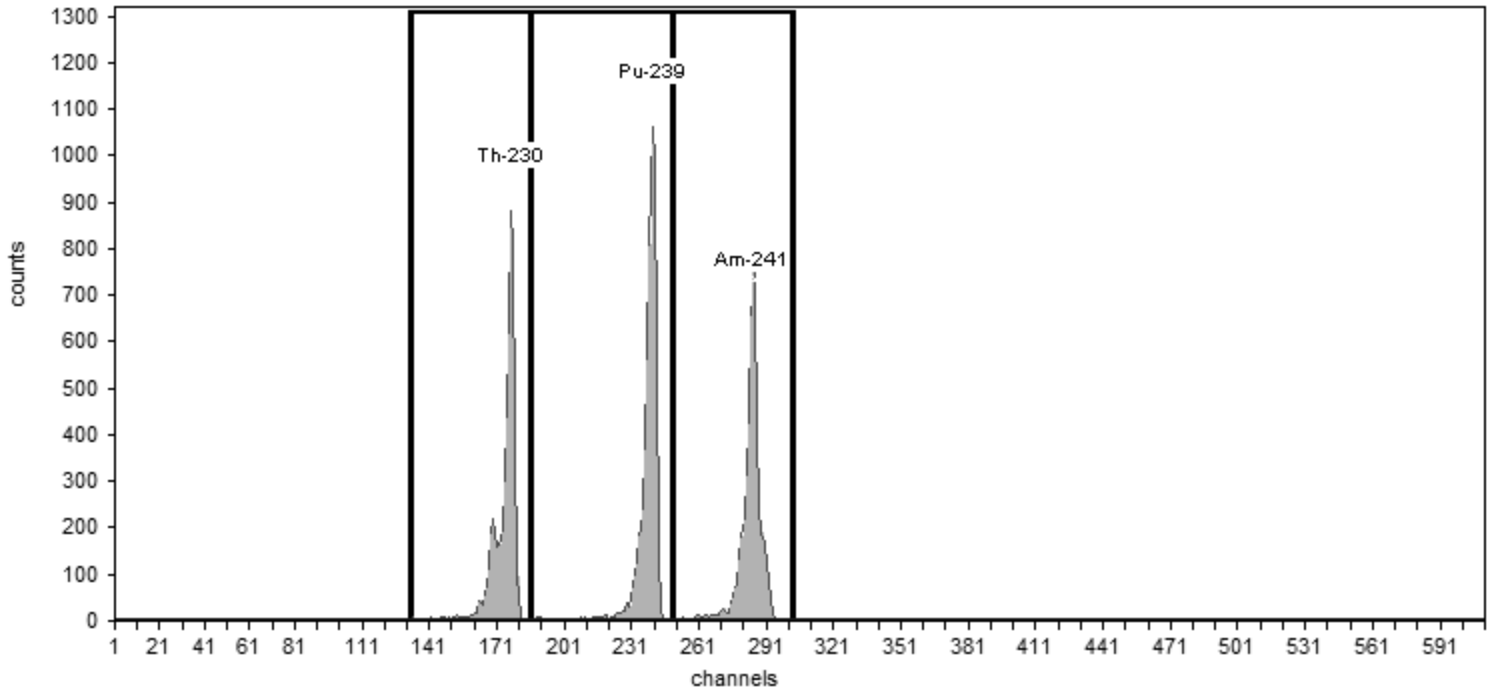
Detector: AV149 , SN: 50-05/R3
Acquisition Start Date: 11/19/2014 6:43:29PM

Live Time: 60.00 min.
Real Time: 60.00 min.

Efficiency Calibration Name: CCV-8875;AV149-2014111

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch²

Efficiency: 25.45% +/- 0.47% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	28.83	5,068.00	84.47
Pu-239	240	5,155.40	186	249	31.51	5,639.00	93.98
Am-241	284	5,485.70	249	303	31.57	5,098.00	84.97

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:41:26AM 11/20/2014

Calibration

Sample Name: CCV-8876;AV150-20141119
Description:
Detector: AV150

Analyst: 60040
Analysis Date: 11/19/2014 8:57:16PM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82235-334
Prepared by: Analytics
Description:

Certification Date: 6/4/2010 12:00:00PM

Acquisition

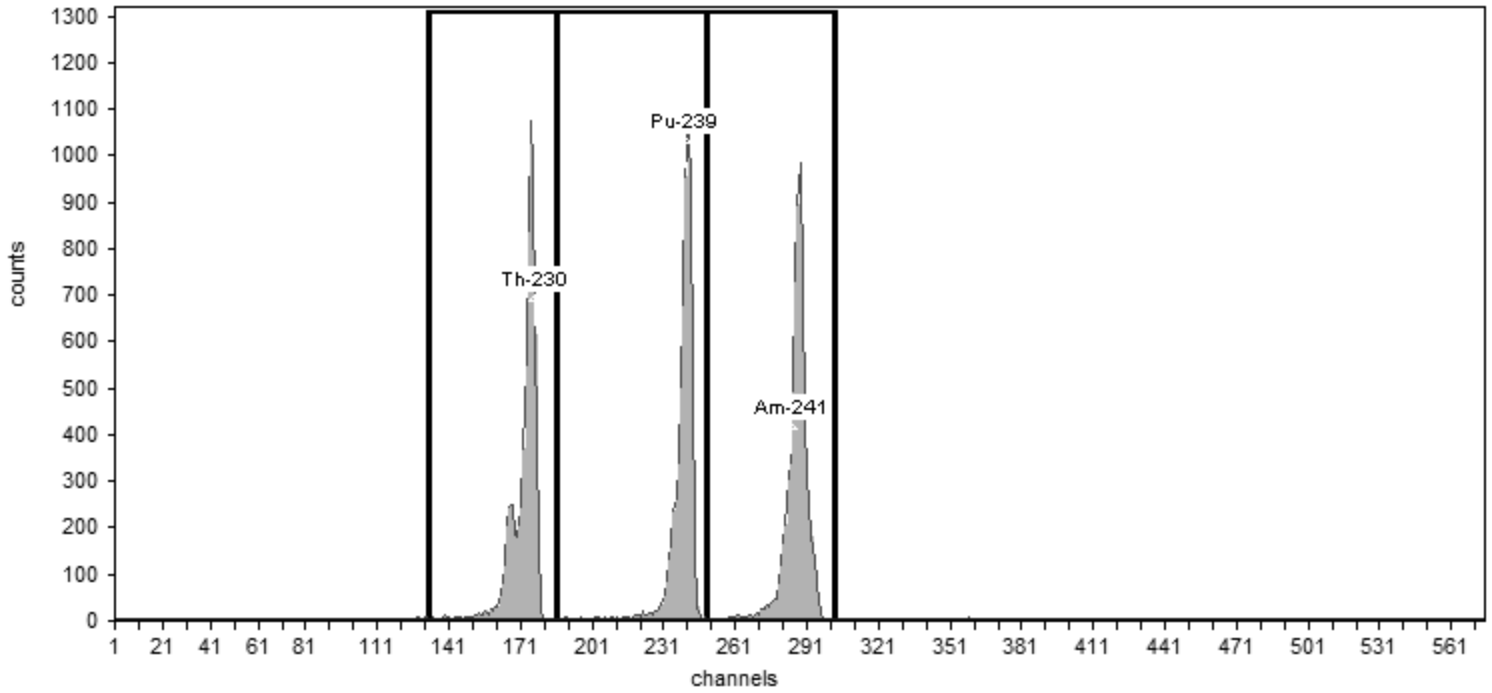
Detector: AV150 , SN: 50-05/R4
Acquisition Start Date: 11/19/2014 6:43:40PM

Live Time: 60.00 min.
Real Time: 60.01 min.

Efficiency Calibration Name: CCV-8876;AV150-2014111

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch²

Efficiency: 25.52% +/- 0.41% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	31.66	6,600.00	110.00
Pu-239	240	5,155.40	186	249	35.43	6,345.00	105.75
Am-241	284	5,485.70	249	303	35.84	6,796.00	113.27

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:41:42AM 11/20/2014

Calibration

Sample Name: CCV-8877;AV165-20141119
Description:
Detector: AV165

Analyst: 60040
Analysis Date: 11/19/2014 8:57:37PM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82236-334
Prepared by: Analytics
Description:

Certification Date: 6/2/2010 12:00:00PM

Acquisition

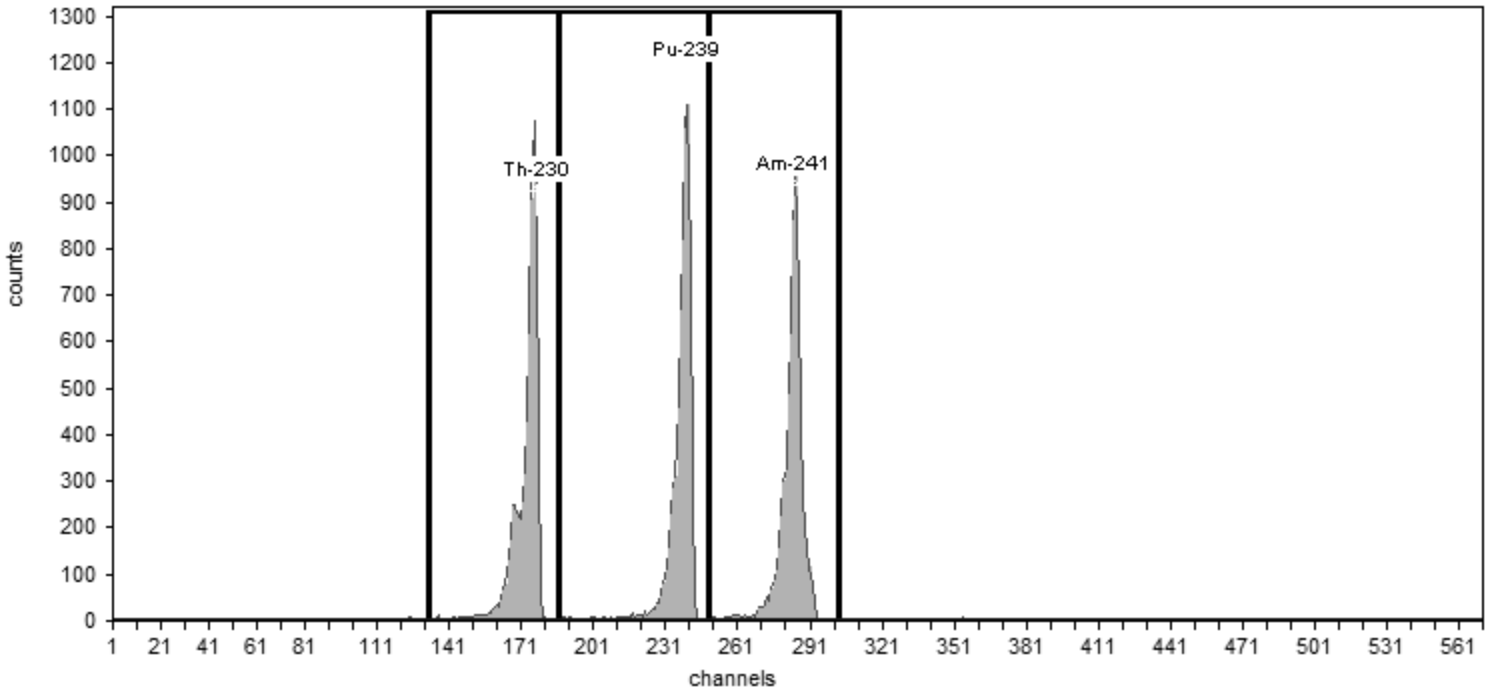
Detector: AV165 , SN: 50-112F7
Acquisition Start Date: 11/19/2014 6:45:14PM

Live Time: 60.00 min.
Real Time: 60.00 min.

Efficiency Calibration Name: CCV-8877;AV165-2014111

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 26.49% +/- 0.43% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	30.37	6,526.00	108.77
Pu-239	240	5,155.40	186	249	37.17	6,709.00	111.82
Am-241	284	5,485.70	249	303	35.47	6,472.00	107.87

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
8:57:42PM 11/19/2014

Calibration

Sample Name: CCV-9793;AV168-20141119
Description:
Detector: AV168

Analyst: 60040
Analysis Date: 11/19/2014 8:57:41PM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82241-334
Prepared by: Analytics
Description:

Certification Date: 6/8/2010 12:00:00PM

Acquisition

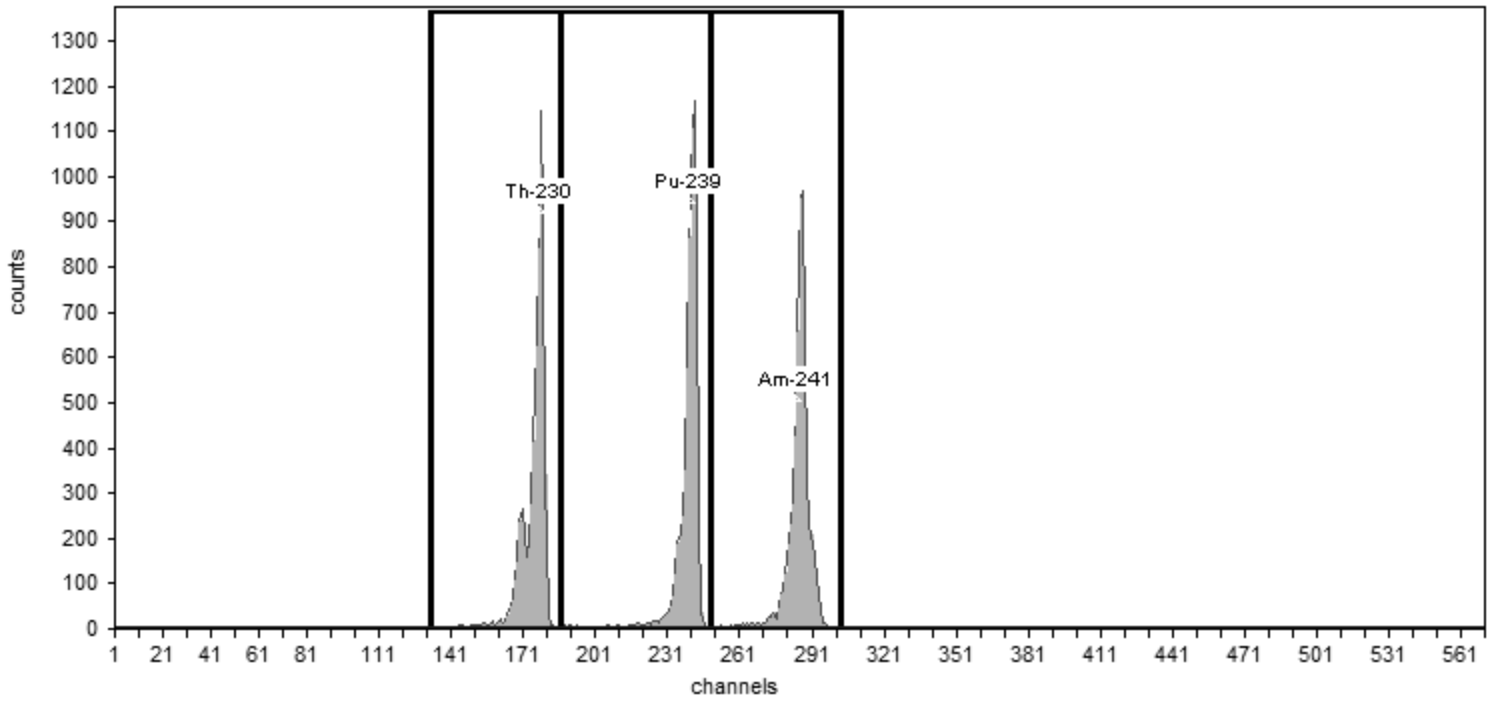
Detector: AV168 , SN: 50-113 G4
Acquisition Start Date: 11/19/2014 6:45:35PM

Live Time: 60.00 min.
Real Time: 60.00 min.

Efficiency Calibration Name: CCV-9793;AV168-2014111

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch²

Efficiency: 25.67% +/- 0.43% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	28.66	6,155.00	102.58
Pu-239	240	5,155.40	186	249	32.77	6,309.00	105.15
Am-241	284	5,485.70	249	303	31.90	6,041.00	100.68

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
8:57:45PM 11/19/2014

Calibration

Sample Name: CCV-9885;AV173-20141119
Description:
Detector: AV173

Analyst: 60040
Analysis Date: 11/19/2014 8:57:45PM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82246-334
Prepared by: Analytics
Description:

Certification Date: 6/9/2010 12:00:00PM

Acquisition

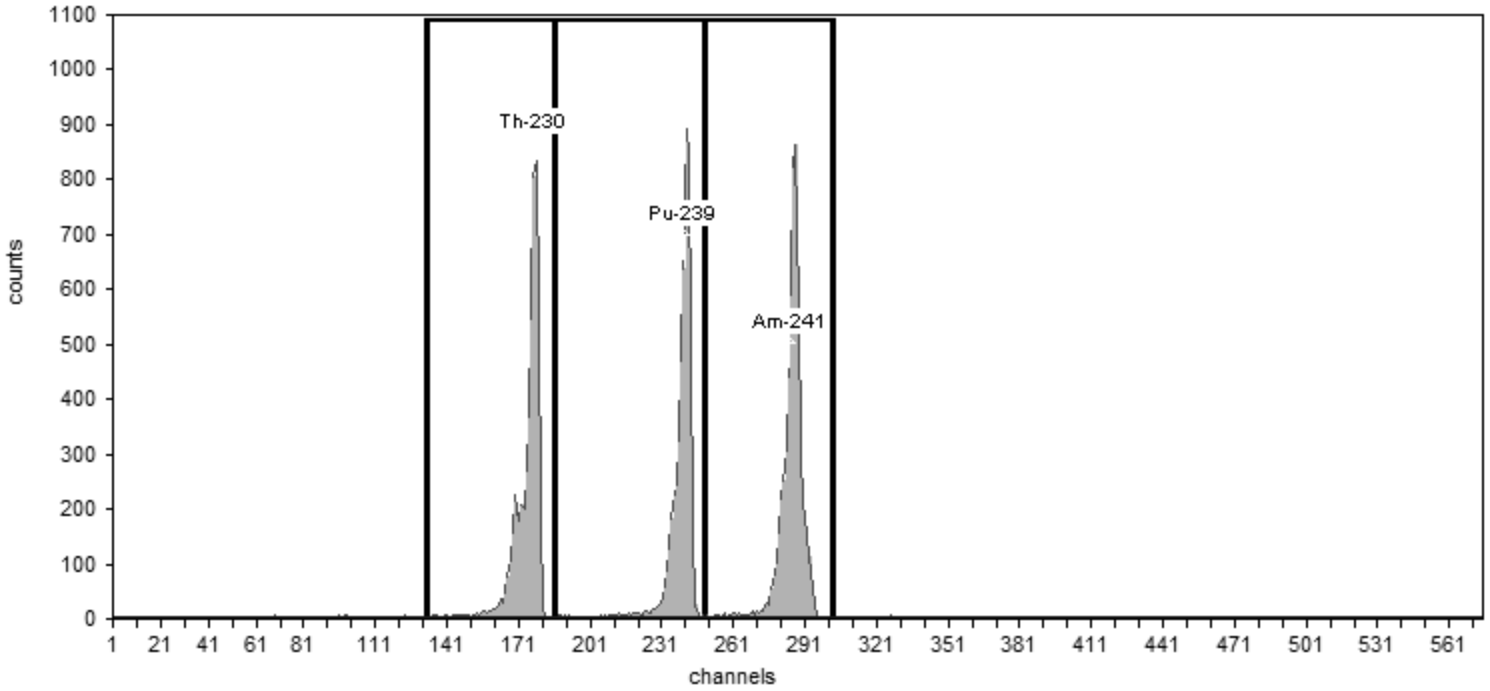
Detector: AV173 , SN: 50-112 Y4
Acquisition Start Date: 11/19/2014 6:45:51PM

Live Time: 60.00 min.
Real Time: 60.00 min.

Efficiency Calibration Name: CCV-9885;AV173-2014111

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch²

Efficiency: 26.03% +/- 0.49% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	30.56	5,172.00	86.20
Pu-239	240	5,155.40	186	249	32.24	4,990.00	83.17
Am-241	284	5,485.70	249	303	33.95	5,662.00	94.37

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
10:09:44PM 11/18/2014

Calibration

Sample Name: CCV-9792;AV181-20141118
Description:
Detector: AV181

Analyst: 60040
Analysis Date: 11/18/2014 10:09:43PM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82240-334
Prepared by: Analytics
Description:

Certification Date: 6/8/2010 12:00:00PM

Acquisition

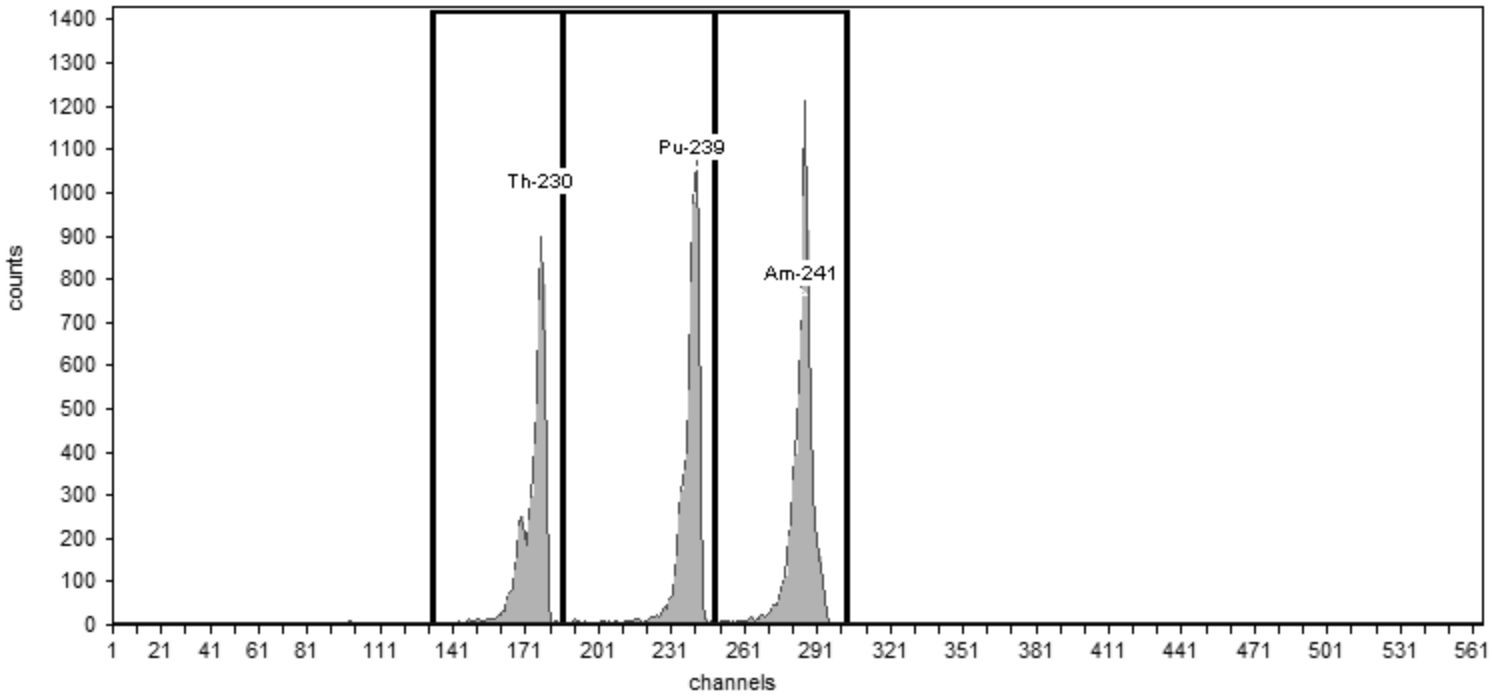
Detector: AV181 , SN: 50-110X1
Acquisition Start Date: 11/18/2014 8:50:17PM

Live Time: 60.00 min.
Real Time: 60.00 min.

Efficiency Calibration Name: CCV-9792;AV181-2014111

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 25.84% +/- 0.41% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	33.42	5,874.00	97.90
Pu-239	240	5,155.40	186	249	34.73	6,642.00	110.70
Am-241	284	5,485.70	249	303	31.51	7,684.00	128.07

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:41:55AM 11/20/2014

Calibration

Sample Name: CCV-9793;AV182-20141119
Description:
Detector: AV182

Analyst: 60040
Analysis Date: 11/19/2014 11:03:08PM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82241-334
Prepared by: Analytics
Description:

Certification Date: 6/8/2010 12:00:00PM

Acquisition

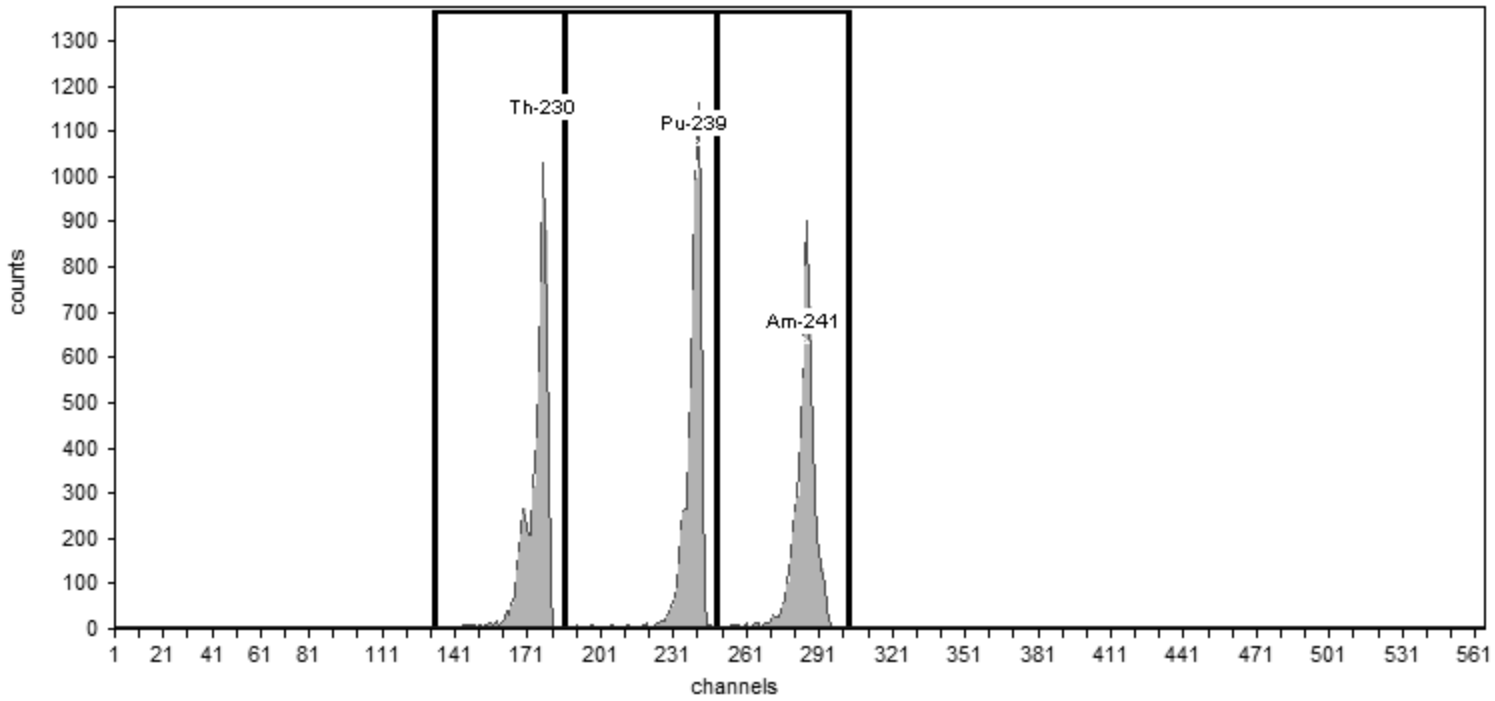
Detector: AV182 , SN: 50-110X6
Acquisition Start Date: 11/19/2014 9:14:51PM

Live Time: 60.00 min.
Real Time: 60.00 min.

Efficiency Calibration Name: CCV-9793;AV182-2014111

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch²

Efficiency: 25.94% +/- 0.43% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	30.72	6,178.00	102.97
Pu-239	240	5,155.40	186	249	32.39	6,414.00	106.90
Am-241	284	5,485.70	249	303	34.99	6,105.00	101.75

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:41:58AM 11/20/2014

Calibration

Sample Name: CCV-9795;AV184-20141119
Description:
Detector: AV184

Analyst: 60040
Analysis Date: 11/19/2014 8:57:52PM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82243-334
Prepared by: Analytics
Description:

Certification Date: 6/9/2010 12:00:00PM

Acquisition

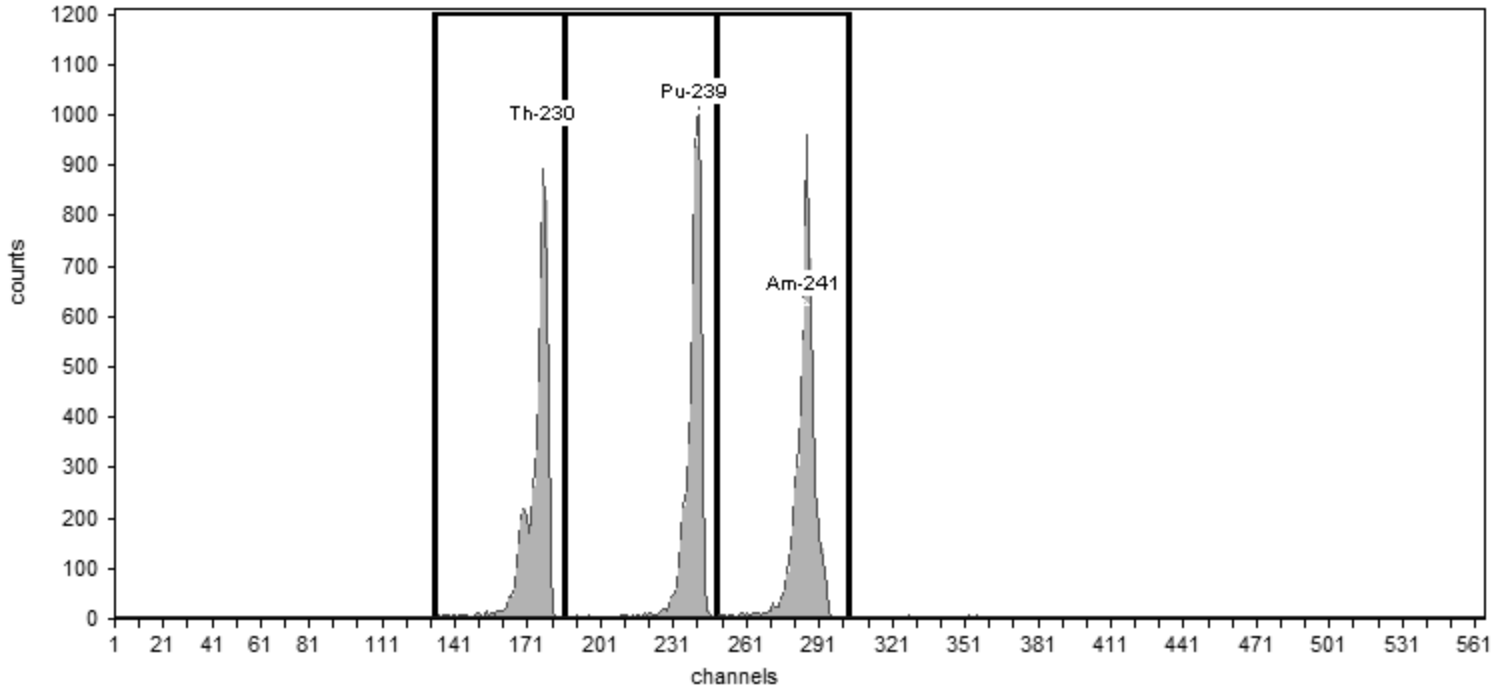
Detector: AV184 , SN: 50-110Y3
Acquisition Start Date: 11/19/2014 6:46:21PM

Live Time: 60.00 min.
Real Time: 60.00 min.

Efficiency Calibration Name: CCV-9795;AV184-2014111

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch²

Efficiency: 26.35% +/- 0.46% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	31.30	5,536.00	92.27
Pu-239	240	5,155.40	186	249	31.84	5,628.00	93.80
Am-241	284	5,485.70	249	303	33.28	6,089.00	101.48

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:13:33AM 11/20/2014

Calibration

Sample Name: CCV-9817;AV185-20141119
Description:
Detector: AV185

Analyst: 60040
Analysis Date: 11/20/2014 1:13:32AM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82244-334
Prepared by: Analytics
Description:

Certification Date: 6/9/2010 12:00:00PM

Acquisition

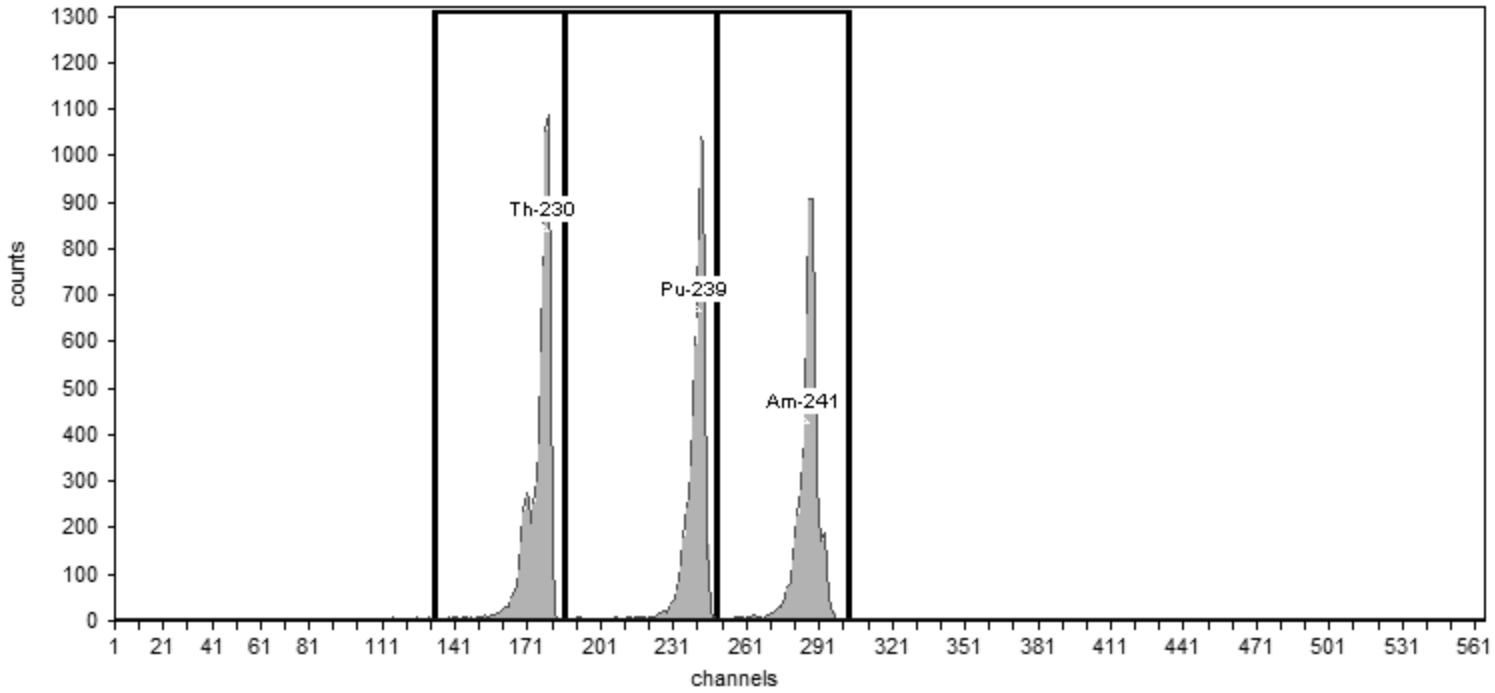
Detector: AV185 , SN: 50-119I1
Acquisition Start Date: 11/19/2014 11:05:47PM

Live Time: 60.00 min.
Real Time: 60.00 min.

Efficiency Calibration Name: CCV-9817;AV185-2014111

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 25.67% +/- 0.42% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	31.94	6,855.00	114.25
Pu-239	240	5,155.40	186	249	35.17	6,288.00	104.80
Am-241	284	5,485.70	249	303	34.09	6,197.00	103.28

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
8:57:56PM 11/19/2014

Calibration

Sample Name: CCV-9886;AV188-20141119
Description:
Detector: AV188

Analyst: 60040
Analysis Date: 11/19/2014 8:57:55PM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82247-334
Prepared by: Analytics
Description:

Certification Date: 6/10/2010 12:00:00PM

Acquisition

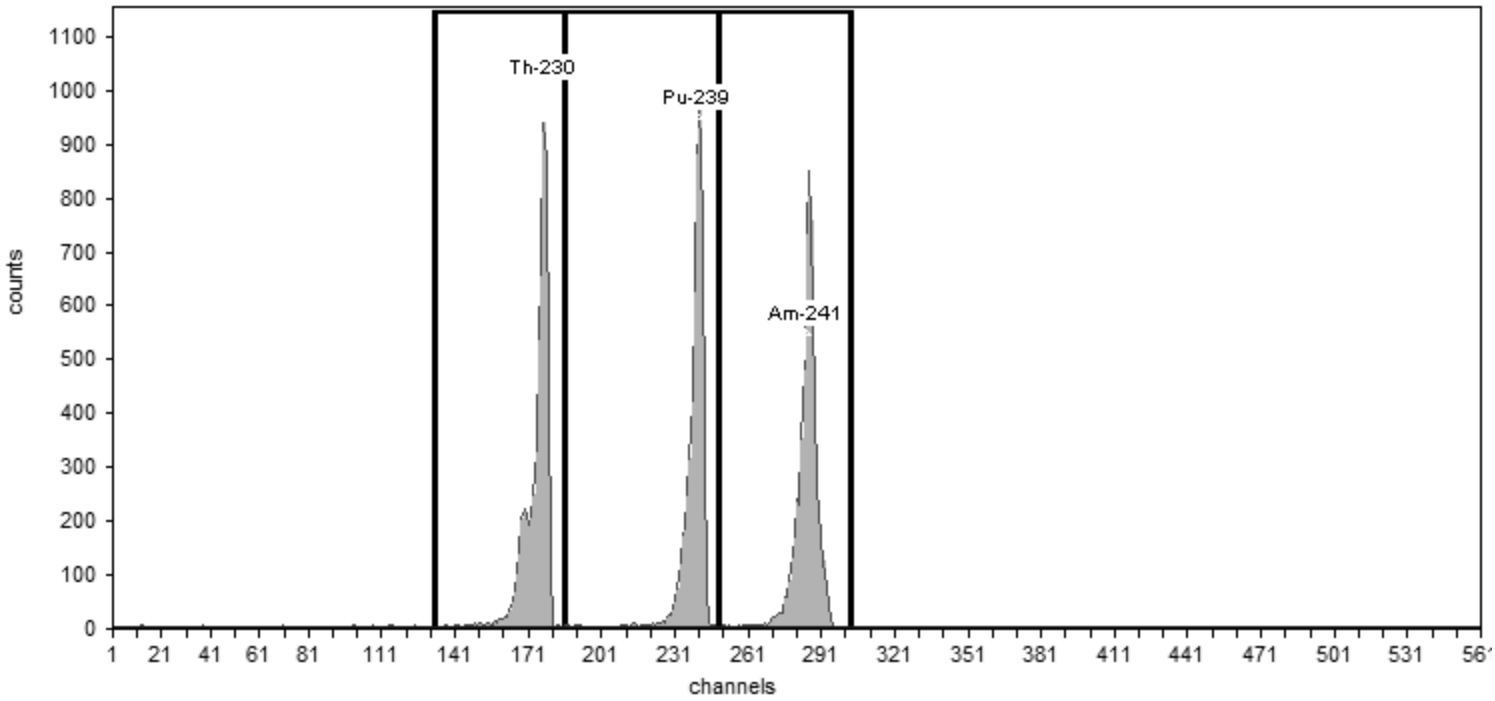
Detector: AV188 , SN: 50-110X4
Acquisition Start Date: 11/19/2014 6:46:35PM

Live Time: 60.00 min.
Real Time: 60.00 min.

Efficiency Calibration Name: CCV-9886;AV188-2014111

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 25.60% +/- 0.46% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	31.95	5,730.00	95.50
Pu-239	240	5,155.40	186	249	31.80	5,438.00	90.63
Am-241	284	5,485.70	249	303	33.02	5,662.00	94.37

Monthly Backgrounds

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
4:07:49PM 11/18/2014

Sample

Sample Name: ICB;AV149
Comment:

Spectrum #1 Analysis #1
Analyst: 60040

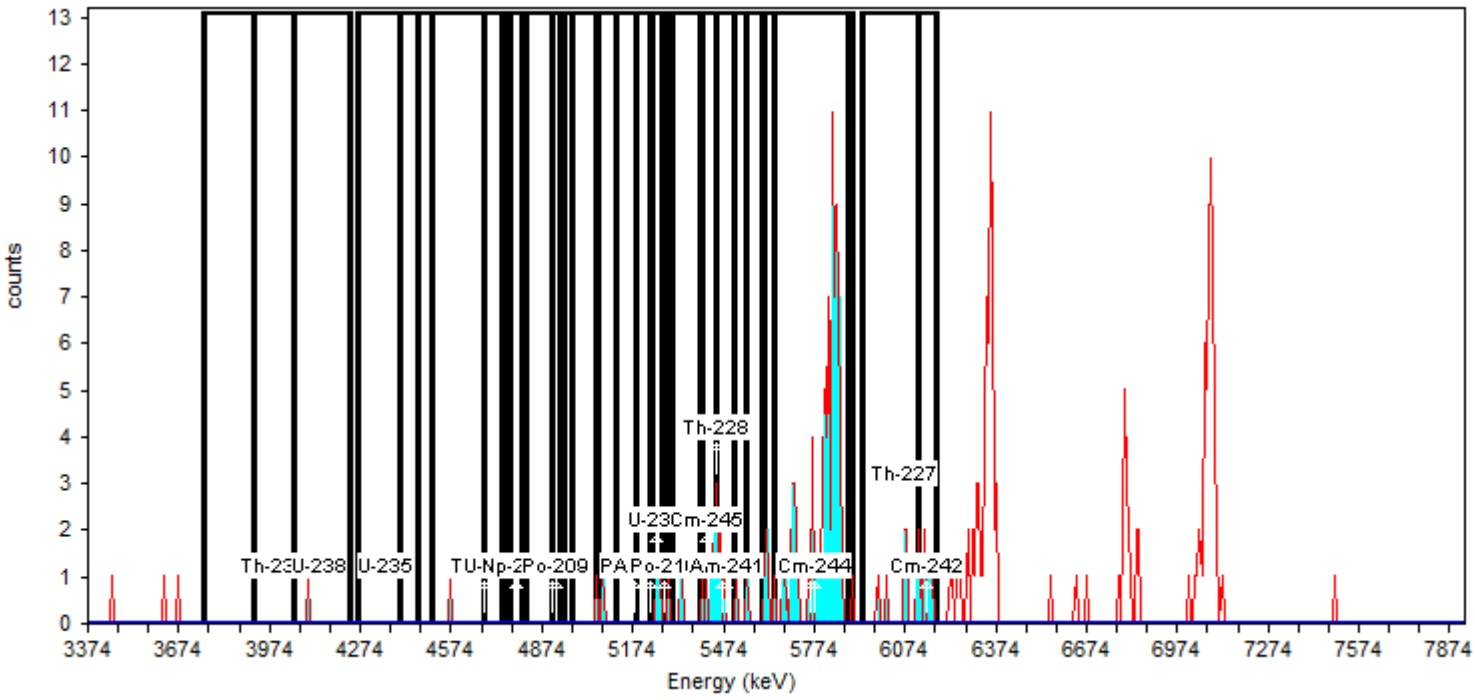
Batch

Batch Name: November2014
Description:

Acquisition

Detector: AV149 , SN: 50-05/R3
Acquisition Start Date: 11/18/2014 12:05:48AM
Live Time: 960.00 min.
Real Time: 960.00 min.
Calibration Name: IC-8875;AV149-20140709
Calibration Date: 7/8/2014 10:30:10PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 243.00

Nuclide Summary (ROI)

RegionName	Peak Energy (keV)	Start Energy (keV)	End Energy (keV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3,985.93	3,754.75	4,053.05	0.00	0.000E+000	1.473E-003
U-238	4,135.08	3,918.81	4,239.49	1.00	1.042E-003	1.473E-003
U-235	4,358.81	4,261.86	4,463.21	0.00	0.000E+000	1.473E-003
Th-230	4,679.48	4,403.55	4,746.60	1.00	1.042E-003	1.473E-003
U-234	4,709.31	4,507.96	4,821.17	1.00	1.042E-003	1.473E-003
Pu-242	4,903.21	4,679.48	4,947.95	0.00	0.000E+000	1.473E-003
Th-229	4,858.46	4,739.14	5,119.48	2.00	2.083E-003	1.804E-003
Np-237	4,783.89	4,768.97	4,806.26	0.00	0.000E+000	1.473E-003
Po-209	4,918.12	4,903.21	4,933.04	0.00	0.000E+000	1.473E-003
Pu-239	5,179.14	4,970.33	5,238.80	2.00	2.083E-003	1.804E-003
Am-243	5,231.34	5,052.36	5,305.92	5.00	5.208E-003	2.552E-003
U-232	5,253.71	5,059.82	5,402.86	7.00	7.292E-003	2.946E-003
Th-228	5,447.61	5,186.59	5,507.27	17.00	1.771E-002	4.419E-003
Po-210	5,276.09	5,231.34	5,291.00	3.00	3.125E-003	2.083E-003
Pu-238	5,469.98	5,268.63	5,552.01	17.00	1.771E-002	4.419E-003
Am-241	5,484.90	5,298.46	5,604.22	16.00	1.667E-002	4.295E-003
Cm-245	5,417.78	5,395.41	5,447.61	8.00	8.333E-003	3.125E-003
Pu-236	5,760.83	5,611.67	5,887.60	77.00	8.021E-002	9.200E-003
Cm-244	5,775.74	5,641.51	5,902.52	75.00	7.813E-002	9.081E-003
Th-227	6,074.04	5,932.35	6,178.45	14.00	1.458E-002	4.034E-003
Cm-242	6,148.62	6,118.79	6,178.45	7.00	7.292E-003	2.946E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
10:07:54AM 11/19/2014

Sample

Sample Name: ICB;AV150
Comment:

Spectrum #1 Analysis #1
Analyst: 60040

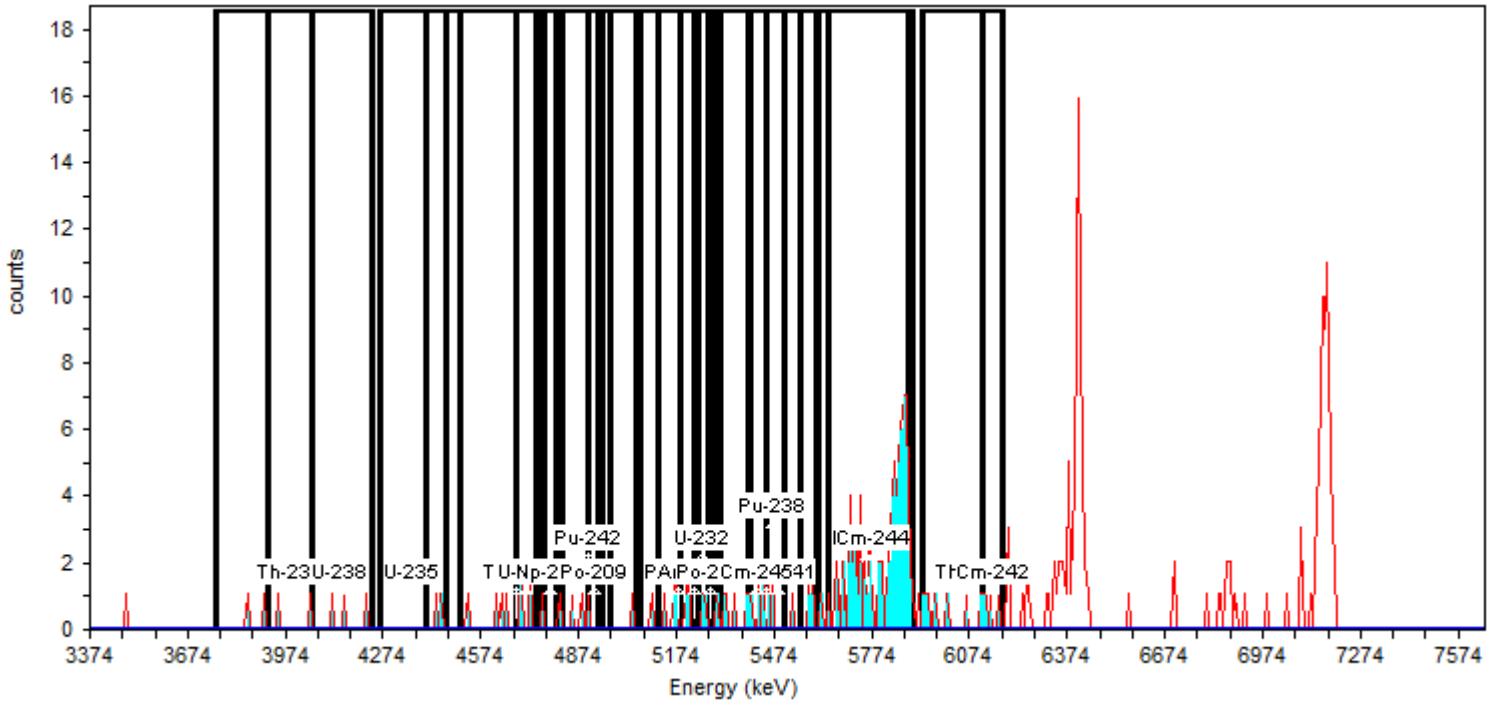
Batch

Batch Name: November2014a
Description:

Acquisition

Detector: AV150 , SN: 50-05/R4
Acquisition Start Date: 11/18/2014 5:54:37PM
Live Time: 960.00 min.
Real Time: 960.02 min.
Calibration Name: IC-8876;AV150-20140709
Calibration Date: 7/8/2014 10:30:13PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 288.00

Nuclide Summary (ROI)

RegionName	Peak Energy (keV)	Start Energy (keV)	End Energy (keV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3,985.93	3,754.75	4,053.05	4.00	4.167E-003	2.329E-003
U-238	4,135.08	3,918.81	4,239.49	5.00	5.208E-003	2.552E-003
U-235	4,358.81	4,261.86	4,463.21	2.00	2.083E-003	1.804E-003
Th-230	4,679.48	4,403.55	4,746.60	10.00	1.042E-002	3.455E-003
U-234	4,709.31	4,507.96	4,821.17	10.00	1.042E-002	3.455E-003
Pu-242	4,903.21	4,679.48	4,947.95	9.00	9.375E-003	3.294E-003
Th-229	4,858.46	4,739.14	5,119.48	7.00	7.292E-003	2.946E-003
Np-237	4,783.89	4,768.97	4,806.26	0.00	0.000E+000	1.473E-003
Po-209	4,918.12	4,903.21	4,933.04	1.00	1.042E-003	1.473E-003
Pu-239	5,179.14	4,970.33	5,238.80	9.00	9.375E-003	3.294E-003
Am-243	5,231.34	5,052.36	5,305.92	11.00	1.146E-002	3.608E-003
U-232	5,253.71	5,059.82	5,402.86	17.00	1.771E-002	4.419E-003
Th-228	5,447.61	5,186.59	5,507.27	20.00	2.083E-002	4.774E-003
Po-210	5,276.09	5,231.34	5,291.00	2.00	2.083E-003	1.804E-003
Pu-238	5,469.98	5,268.63	5,552.01	16.00	1.667E-002	4.295E-003
Am-241	5,484.90	5,298.46	5,604.22	19.00	1.979E-002	4.658E-003
Cm-245	5,417.78	5,395.41	5,447.61	6.00	6.250E-003	2.756E-003
Pu-236	5,760.83	5,611.67	5,887.60	79.00	8.229E-002	9.317E-003
Cm-244	5,775.74	5,641.51	5,902.52	81.00	8.438E-002	9.433E-003
Th-227	6,074.04	5,932.35	6,178.45	11.00	1.146E-002	3.608E-003
Cm-242	6,148.62	6,118.79	6,178.45	4.00	4.167E-003	2.329E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
4:08:06PM 11/18/2014

Sample

Sample Name: ICB;AV165
Comment:

Spectrum #1 Analysis #1
Analyst: 60040

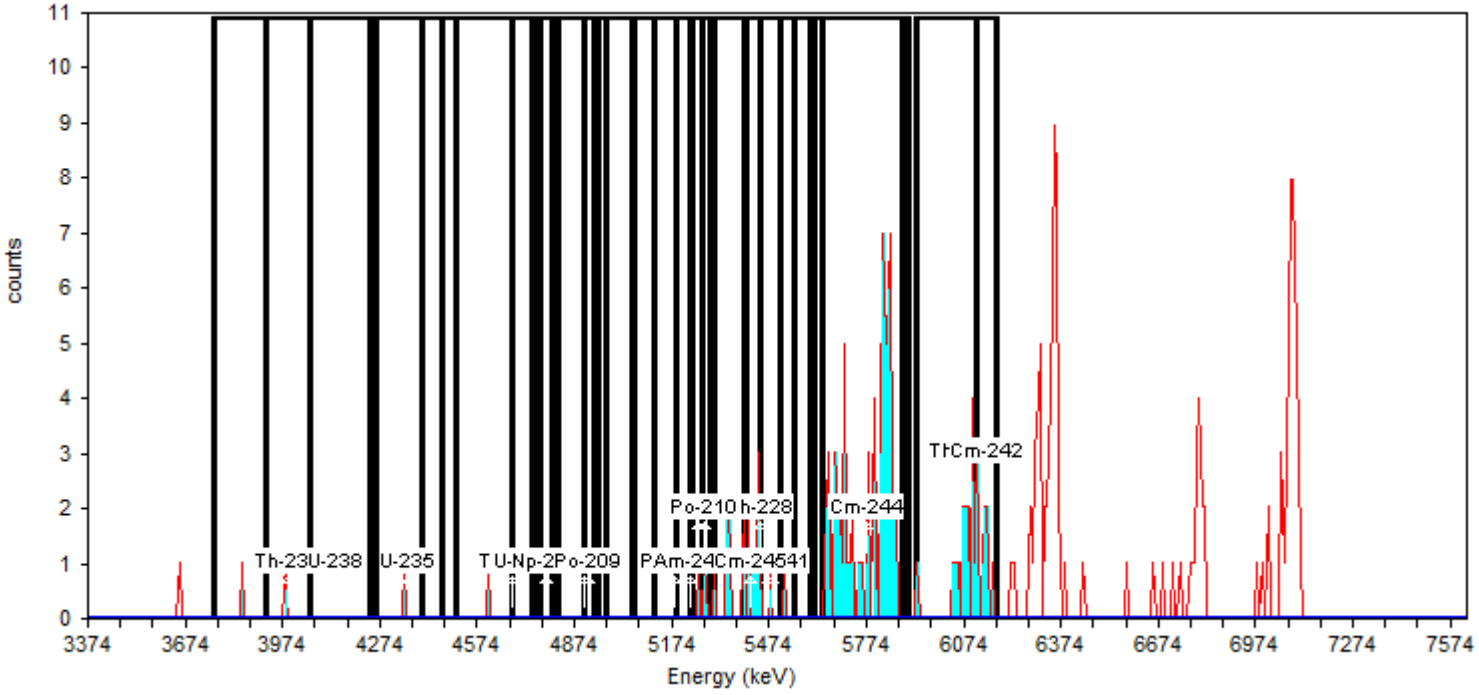
Batch

Batch Name: November2014
Description:

Acquisition

Detector: AV165 , SN: 50-112F7
Acquisition Start Date: 11/18/2014 12:05:44AM
Live Time: 960.00 min.
Real Time: 960.01 min.
Calibration Name: IC-8877;AV165-20140706
Calibration Date: 7/8/2014 5:48:08PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 228.00

Nuclide Summary (ROI)

RegionName	Peak Energy (keV)	Start Energy (keV)	End Energy (keV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3,985.93	3,754.75	4,053.05	2.00	2.083E-003	1.804E-003
U-238	4,135.08	3,918.81	4,239.49	1.00	1.042E-003	1.473E-003
U-235	4,358.81	4,261.86	4,463.21	1.00	1.042E-003	1.473E-003
Th-230	4,679.48	4,403.55	4,746.60	1.00	1.042E-003	1.473E-003
U-234	4,709.31	4,507.96	4,821.17	1.00	1.042E-003	1.473E-003
Pu-242	4,903.21	4,679.48	4,947.95	0.00	0.000E+000	1.473E-003
Th-229	4,858.46	4,739.14	5,119.48	0.00	0.000E+000	1.473E-003
Np-237	4,783.89	4,768.97	4,806.26	0.00	0.000E+000	1.473E-003
Po-209	4,918.12	4,903.21	4,933.04	0.00	0.000E+000	1.473E-003
Pu-239	5,179.14	4,970.33	5,238.80	0.00	0.000E+000	1.473E-003
Am-243	5,231.34	5,052.36	5,305.92	3.00	3.125E-003	2.083E-003
U-232	5,253.71	5,059.82	5,402.86	9.00	9.375E-003	3.294E-003
Th-228	5,447.61	5,186.59	5,507.27	18.00	1.875E-002	4.541E-003
Po-210	5,276.09	5,231.34	5,291.00	2.00	2.083E-003	1.804E-003
Pu-238	5,469.98	5,268.63	5,552.01	18.00	1.875E-002	4.541E-003
Am-241	5,484.90	5,298.46	5,604.22	17.00	1.771E-002	4.419E-003
Cm-245	5,417.78	5,395.41	5,447.61	10.00	1.042E-002	3.455E-003
Pu-236	5,760.83	5,611.67	5,887.60	66.00	6.875E-002	8.526E-003
Cm-244	5,775.74	5,641.51	5,902.52	66.00	6.875E-002	8.526E-003
Th-227	6,074.04	5,932.35	6,178.45	24.00	2.500E-002	5.208E-003
Cm-242	6,148.62	6,118.79	6,178.45	9.00	9.375E-003	3.294E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
4:08:15PM 11/18/2014

Sample

Sample Name: ICB;AV168
Comment:

Spectrum #1 Analysis #1
Analyst: 60040

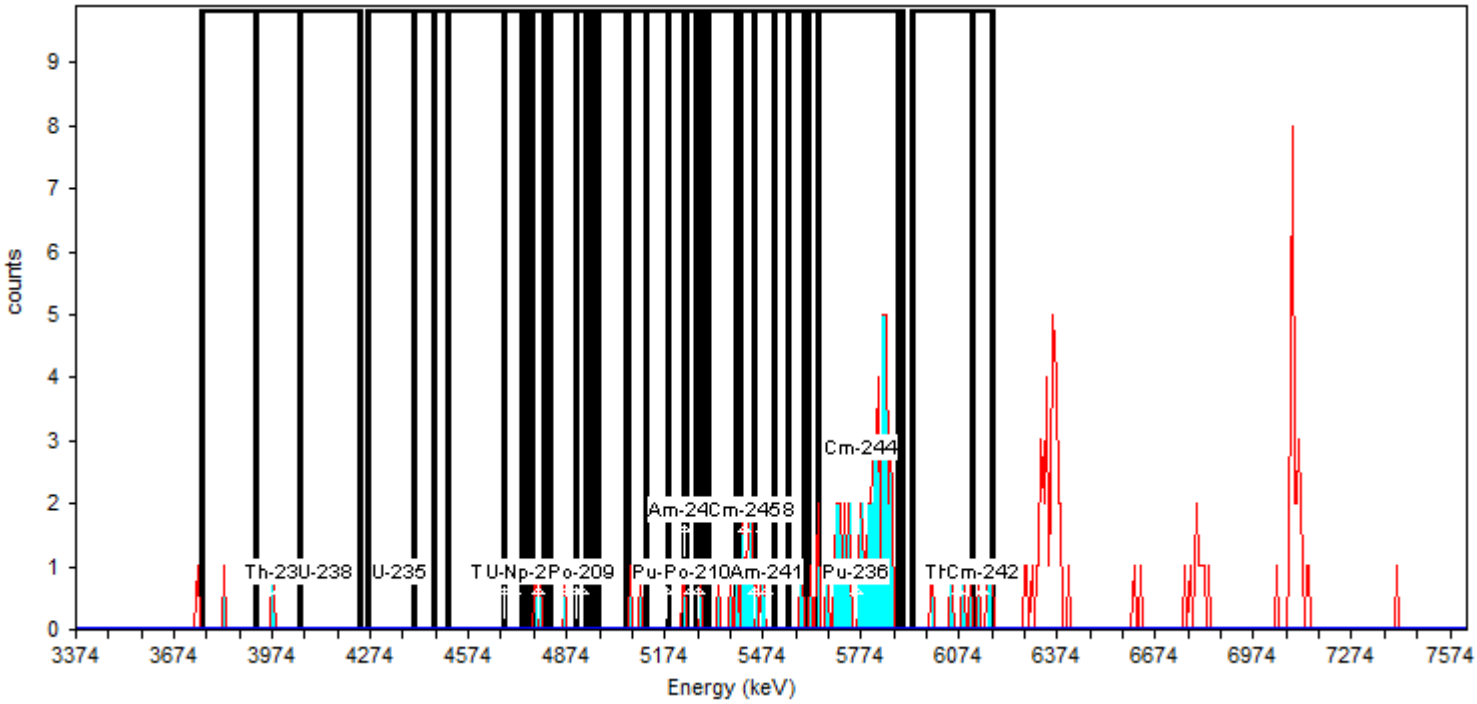
Batch

Batch Name: November2014
Description:

Acquisition

Detector: AV168 , SN: 50-113 G4
Acquisition Start Date: 11/18/2014 12:05:45AM
Live Time: 960.00 min.
Real Time: 960.00 min.
Calibration Name: IC-9793;AV168-20140706
Calibration Date: 7/6/2014 9:06:10PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 150.00

Nuclide Summary (ROI)

RegionName	Peak Energy (keV)	Start Energy (keV)	End Energy (keV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3,985.93	3,754.75	4,053.05	2.00	2.083E-003	1.804E-003
U-238	4,135.08	3,918.81	4,239.49	1.00	1.042E-003	1.473E-003
U-235	4,358.81	4,261.86	4,463.21	0.00	0.000E+000	1.473E-003
Th-230	4,679.48	4,403.55	4,746.60	0.00	0.000E+000	1.473E-003
U-234	4,709.31	4,507.96	4,821.17	2.00	2.083E-003	1.804E-003
Pu-242	4,903.21	4,679.48	4,947.95	3.00	3.125E-003	2.083E-003
Th-229	4,858.46	4,739.14	5,119.48	5.00	5.208E-003	2.552E-003
Np-237	4,783.89	4,768.97	4,806.26	2.00	2.083E-003	1.804E-003
Po-209	4,918.12	4,903.21	4,933.04	0.00	0.000E+000	1.473E-003
Pu-239	5,179.14	4,970.33	5,238.80	3.00	3.125E-003	2.083E-003
Am-243	5,231.34	5,052.36	5,305.92	4.00	4.167E-003	2.329E-003
U-232	5,253.71	5,059.82	5,402.86	7.00	7.292E-003	2.946E-003
Th-228	5,447.61	5,186.59	5,507.27	16.00	1.667E-002	4.295E-003
Po-210	5,276.09	5,231.34	5,291.00	2.00	2.083E-003	1.804E-003
Pu-238	5,469.98	5,268.63	5,552.01	15.00	1.563E-002	4.167E-003
Am-241	5,484.90	5,298.46	5,604.22	16.00	1.667E-002	4.295E-003
Cm-245	5,417.78	5,395.41	5,447.61	9.00	9.375E-003	3.294E-003
Pu-236	5,760.83	5,611.67	5,887.60	52.00	5.417E-002	7.583E-003
Cm-244	5,775.74	5,641.51	5,902.52	51.00	5.313E-002	7.512E-003
Th-227	6,074.04	5,932.35	6,178.45	8.00	8.333E-003	3.125E-003
Cm-242	6,148.62	6,118.79	6,178.45	4.00	4.167E-003	2.329E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
10:07:48AM 11/19/2014

Sample

Sample Name: ICB;AV173
Comment:

Spectrum #1 Analysis #1
Analyst: 60040

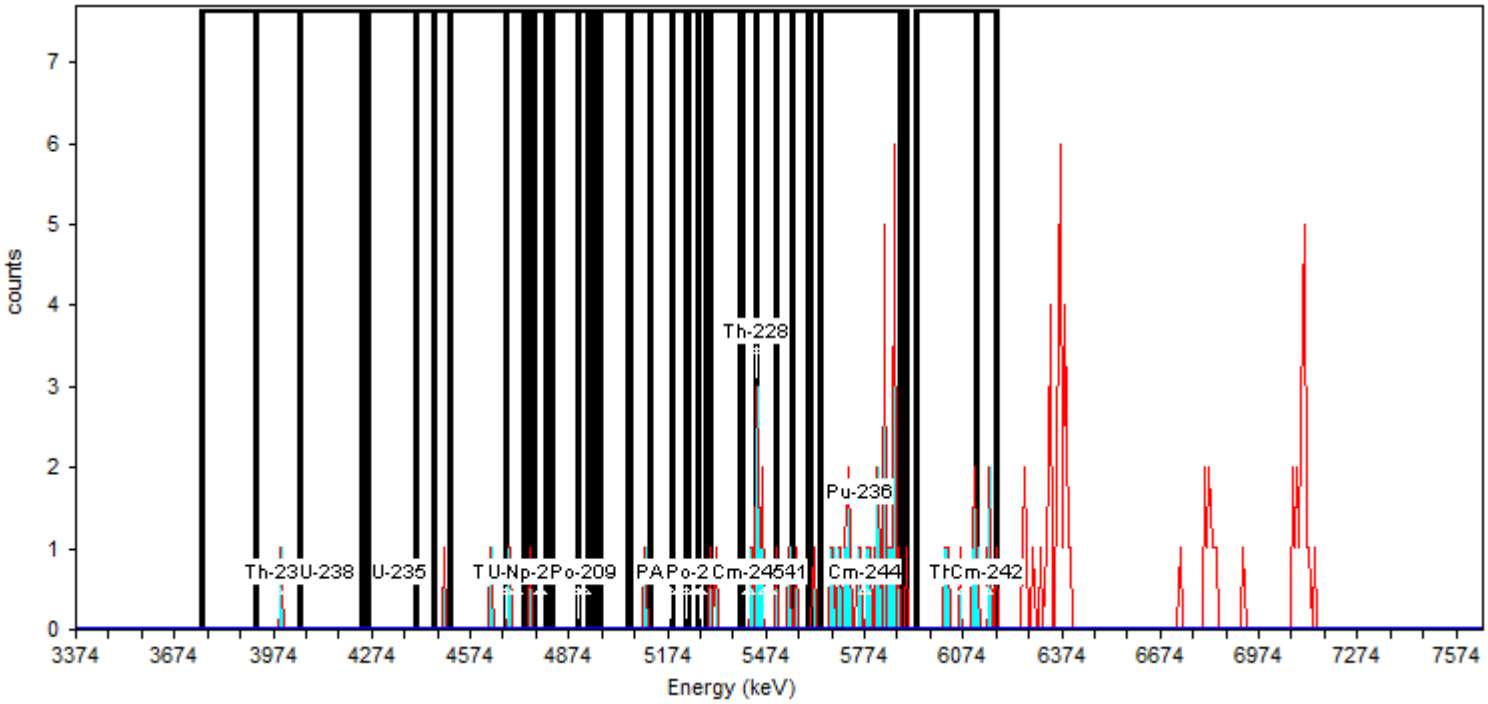
Batch

Batch Name: November2014a
Description:

Acquisition

Detector: AV173 , SN: 50-112 Y4
Acquisition Start Date: 11/18/2014 5:54:39PM
Live Time: 960.00 min.
Real Time: 960.00 min.
Calibration Name: IC-9885;AV173-20140706
Calibration Date: 7/6/2014 9:06:28PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 118.00

Nuclide Summary (ROI)

RegionName	Peak Energy (keV)	Start Energy (keV)	End Energy (keV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3,985.93	3,754.75	4,053.05	1.00	1.042E-003	1.473E-003
U-238	4,135.08	3,918.81	4,239.49	1.00	1.042E-003	1.473E-003
U-235	4,358.81	4,261.86	4,463.21	0.00	0.000E+000	1.473E-003
Th-230	4,679.48	4,403.55	4,746.60	4.00	4.167E-003	2.329E-003
U-234	4,709.31	4,507.96	4,821.17	4.00	4.167E-003	2.329E-003
Pu-242	4,903.21	4,679.48	4,947.95	3.00	3.125E-003	2.083E-003
Th-229	4,858.46	4,739.14	5,119.48	2.00	2.083E-003	1.804E-003
Np-237	4,783.89	4,768.97	4,806.26	0.00	0.000E+000	1.473E-003
Po-209	4,918.12	4,903.21	4,933.04	0.00	0.000E+000	1.473E-003
Pu-239	5,179.14	4,970.33	5,238.80	1.00	1.042E-003	1.473E-003
Am-243	5,231.34	5,052.36	5,305.92	2.00	2.083E-003	1.804E-003
U-232	5,253.71	5,059.82	5,402.86	3.00	3.125E-003	2.083E-003
Th-228	5,447.61	5,186.59	5,507.27	11.00	1.146E-002	3.608E-003
Po-210	5,276.09	5,231.34	5,291.00	0.00	0.000E+000	1.473E-003
Pu-238	5,469.98	5,268.63	5,552.01	12.00	1.250E-002	3.756E-003
Am-241	5,484.90	5,298.46	5,604.22	13.00	1.354E-002	3.898E-003
Cm-245	5,417.78	5,395.41	5,447.61	5.00	5.208E-003	2.552E-003
Pu-236	5,760.83	5,611.67	5,887.60	30.00	3.125E-002	5.800E-003
Cm-244	5,775.74	5,641.51	5,902.52	30.00	3.125E-002	5.800E-003
Th-227	6,074.04	5,932.35	6,178.45	10.00	1.042E-002	3.455E-003
Cm-242	6,148.62	6,118.79	6,178.45	4.00	4.167E-003	2.329E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
4:08:38PM 11/18/2014

Sample

Sample Name: ICB;AV181
Comment:

Spectrum #1 Analysis #1
Analyst: 60040

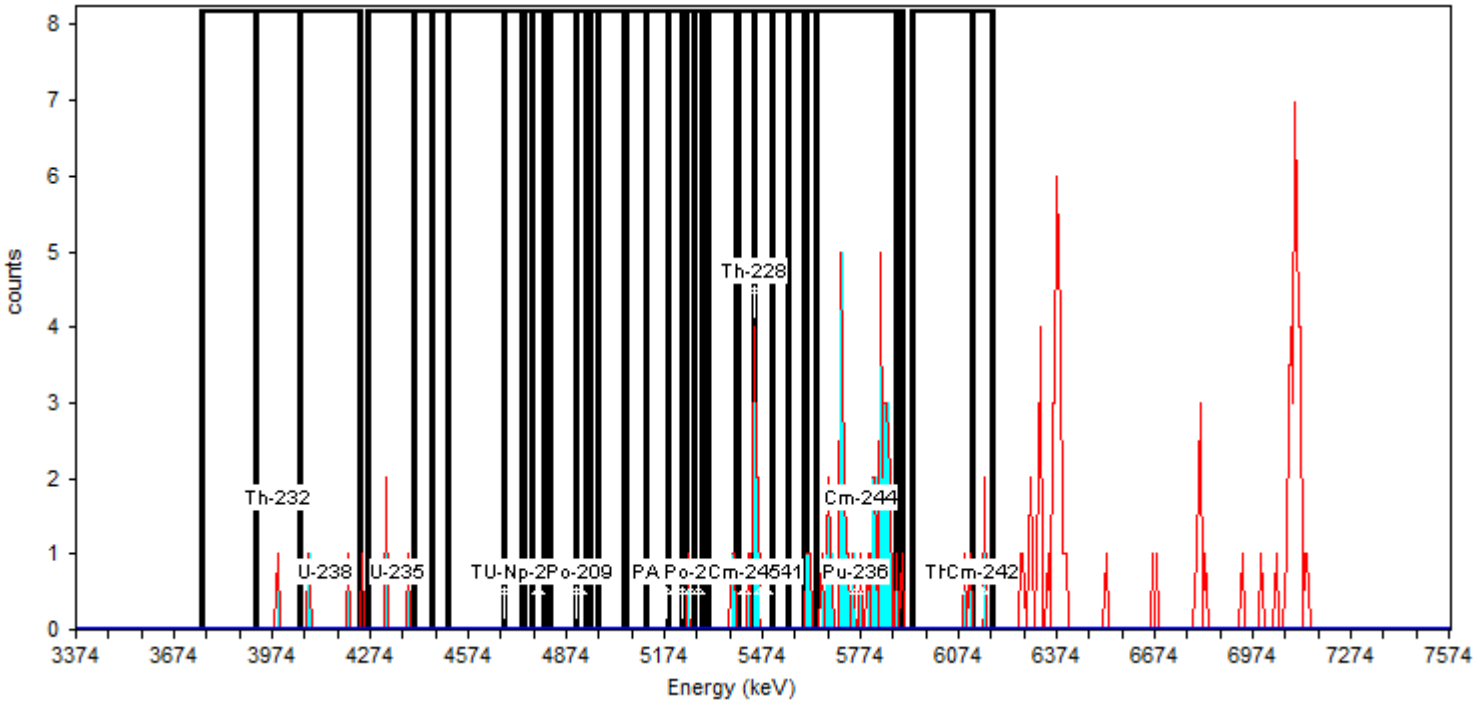
Batch

Batch Name: November2014
Description:

Acquisition

Detector: AV181 , SN: 50-110X1
Acquisition Start Date: 11/18/2014 12:05:48AM
Live Time: 960.00 min.
Real Time: 960.00 min.
Calibration Name: IC-9792;AV181-20140702
Calibration Date: 7/6/2014 6:16:08PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 136.00

Nuclide Summary (ROI)

RegionName	Peak Energy (keV)	Start Energy (keV)	End Energy (keV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3,985.93	3,754.75	4,053.05	1.00	1.042E-003	1.473E-003
U-238	4,135.08	3,918.81	4,239.49	3.00	3.125E-003	2.083E-003
U-235	4,358.81	4,261.86	4,463.21	3.00	3.125E-003	2.083E-003
Th-230	4,679.48	4,403.55	4,746.60	0.00	0.000E+000	1.473E-003
U-234	4,709.31	4,507.96	4,821.17	0.00	0.000E+000	1.473E-003
Pu-242	4,903.21	4,679.48	4,947.95	0.00	0.000E+000	1.473E-003
Th-229	4,858.46	4,739.14	5,119.48	0.00	0.000E+000	1.473E-003
Np-237	4,783.89	4,768.97	4,806.26	0.00	0.000E+000	1.473E-003
Po-209	4,918.12	4,903.21	4,933.04	0.00	0.000E+000	1.473E-003
Pu-239	5,179.14	4,970.33	5,238.80	0.00	0.000E+000	1.473E-003
Am-243	5,231.34	5,052.36	5,305.92	1.00	1.042E-003	1.473E-003
U-232	5,253.71	5,059.82	5,402.86	3.00	3.125E-003	2.083E-003
Th-228	5,447.61	5,186.59	5,507.27	12.00	1.250E-002	3.756E-003
Po-210	5,276.09	5,231.34	5,291.00	1.00	1.042E-003	1.473E-003
Pu-238	5,469.98	5,268.63	5,552.01	11.00	1.146E-002	3.608E-003
Am-241	5,484.90	5,298.46	5,604.22	11.00	1.146E-002	3.608E-003
Cm-245	5,417.78	5,395.41	5,447.61	5.00	5.208E-003	2.552E-003
Pu-236	5,760.83	5,611.67	5,887.60	39.00	4.062E-002	6.588E-003
Cm-244	5,775.74	5,641.51	5,902.52	38.00	3.958E-002	6.505E-003
Th-227	6,074.04	5,932.35	6,178.45	4.00	4.167E-003	2.329E-003
Cm-242	6,148.62	6,118.79	6,178.45	2.00	2.083E-003	1.804E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
10:25:27AM 11/19/2014

Sample

Sample Name: ICB;AV182
Comment:

Spectrum #1 Analysis #1
Analyst: 60040

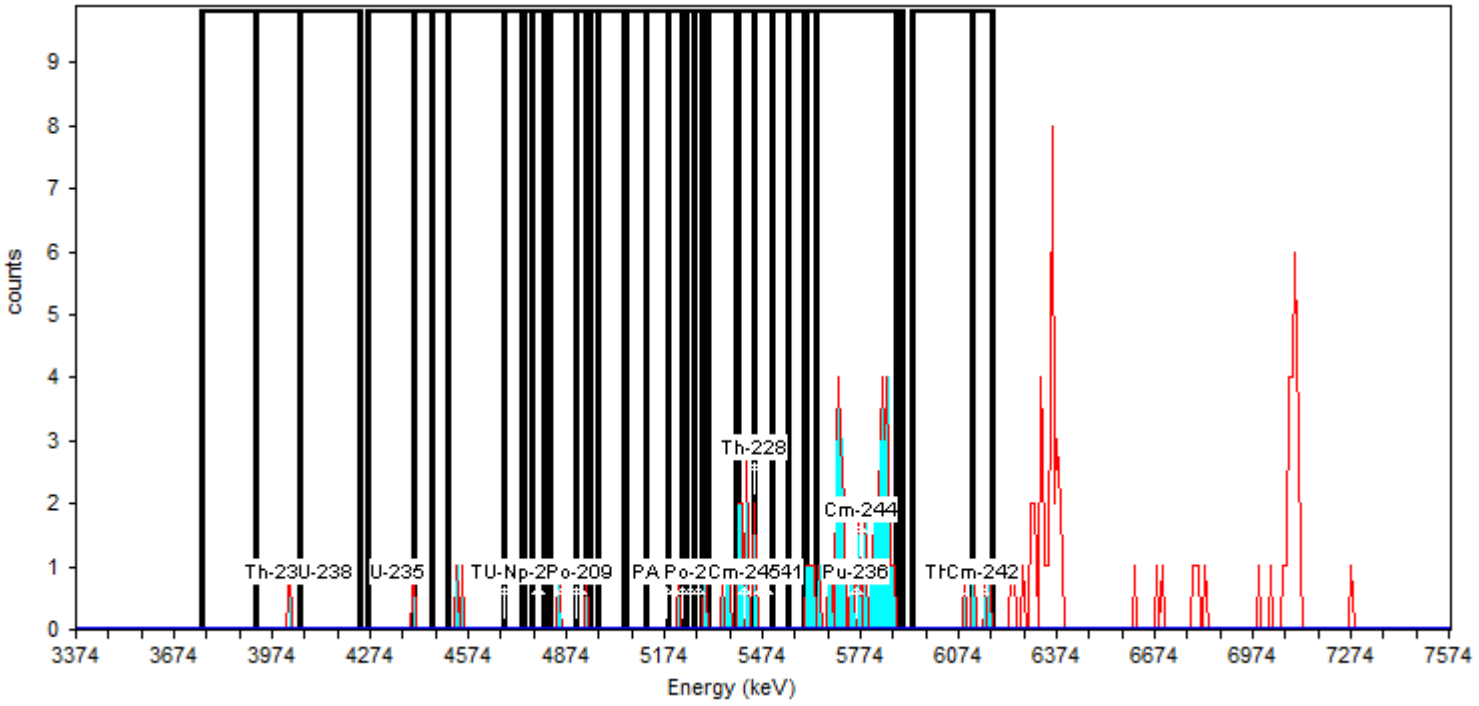
Batch

Batch Name: November2014a
Description:

Acquisition

Detector: AV182 , SN: 50-110X6
Acquisition Start Date: 11/18/2014 5:54:38PM
Live Time: 960.00 min.
Real Time: 960.00 min.
Calibration Name: IC-9793;AV182-20140702
Calibration Date: 7/6/2014 6:16:24PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 148.00

Nuclide Summary (ROI)

RegionName	Peak Energy (keV)	Start Energy (keV)	End Energy (keV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3,985.93	3,754.75	4,053.05	1.00	1.042E-003	1.473E-003
U-238	4,135.08	3,918.81	4,239.49	1.00	1.042E-003	1.473E-003
U-235	4,358.81	4,261.86	4,463.21	1.00	1.042E-003	1.473E-003
Th-230	4,679.48	4,403.55	4,746.60	3.00	3.125E-003	2.083E-003
U-234	4,709.31	4,507.96	4,821.17	2.00	2.083E-003	1.804E-003
Pu-242	4,903.21	4,679.48	4,947.95	2.00	2.083E-003	1.804E-003
Th-229	4,858.46	4,739.14	5,119.48	2.00	2.083E-003	1.804E-003
Np-237	4,783.89	4,768.97	4,806.26	0.00	0.000E+000	1.473E-003
Po-209	4,918.12	4,903.21	4,933.04	1.00	1.042E-003	1.473E-003
Pu-239	5,179.14	4,970.33	5,238.80	1.00	1.042E-003	1.473E-003
Am-243	5,231.34	5,052.36	5,305.92	2.00	2.083E-003	1.804E-003
U-232	5,253.71	5,059.82	5,402.86	7.00	7.292E-003	2.946E-003
Th-228	5,447.61	5,186.59	5,507.27	16.00	1.667E-002	4.295E-003
Po-210	5,276.09	5,231.34	5,291.00	0.00	0.000E+000	1.473E-003
Pu-238	5,469.98	5,268.63	5,552.01	15.00	1.563E-002	4.167E-003
Am-241	5,484.90	5,298.46	5,604.22	15.00	1.563E-002	4.167E-003
Cm-245	5,417.78	5,395.41	5,447.61	10.00	1.042E-002	3.455E-003
Pu-236	5,760.83	5,611.67	5,887.60	49.00	5.104E-002	7.366E-003
Cm-244	5,775.74	5,641.51	5,902.52	45.00	4.688E-002	7.065E-003
Th-227	6,074.04	5,932.35	6,178.45	5.00	5.208E-003	2.552E-003
Cm-242	6,148.62	6,118.79	6,178.45	4.00	4.167E-003	2.329E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
10:25:32AM 11/19/2014

Sample

Sample Name: ICB;AV184
Comment:

Spectrum #1 Analysis #1
Analyst: 60040

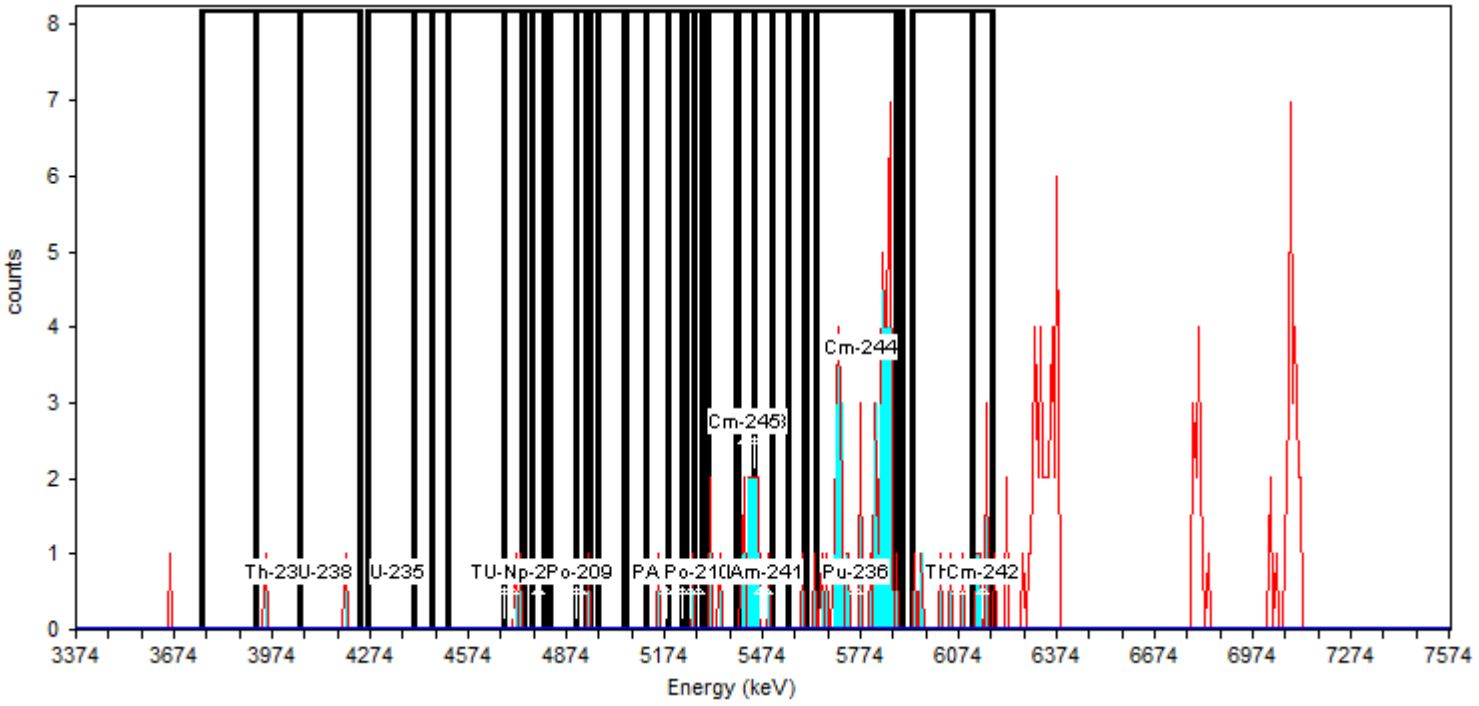
Batch

Batch Name: November2014a
Description:

Acquisition

Detector: AV184 , SN: 50-110Y3
Acquisition Start Date: 11/18/2014 5:54:38PM
Live Time: 960.00 min.
Real Time: 960.01 min.
Calibration Name: IC-9795;AV184-20140702
Calibration Date: 7/2/2014 12:04:29PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 164.00

Nuclide Summary (ROI)

RegionName	Peak Energy (keV)	Start Energy (keV)	End Energy (keV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3,985.93	3,754.75	4,053.05	1.00	1.042E-003	1.473E-003
U-238	4,135.08	3,918.81	4,239.49	2.00	2.083E-003	1.804E-003
U-235	4,358.81	4,261.86	4,463.21	0.00	0.000E+000	1.473E-003
Th-230	4,679.48	4,403.55	4,746.60	2.00	2.083E-003	1.804E-003
U-234	4,709.31	4,507.96	4,821.17	2.00	2.083E-003	1.804E-003
Pu-242	4,903.21	4,679.48	4,947.95	3.00	3.125E-003	2.083E-003
Th-229	4,858.46	4,739.14	5,119.48	1.00	1.042E-003	1.473E-003
Np-237	4,783.89	4,768.97	4,806.26	0.00	0.000E+000	1.473E-003
Po-209	4,918.12	4,903.21	4,933.04	0.00	0.000E+000	1.473E-003
Pu-239	5,179.14	4,970.33	5,238.80	1.00	1.042E-003	1.473E-003
Am-243	5,231.34	5,052.36	5,305.92	2.00	2.083E-003	1.804E-003
U-232	5,253.71	5,059.82	5,402.86	5.00	5.208E-003	2.552E-003
Th-228	5,447.61	5,186.59	5,507.27	18.00	1.875E-002	4.541E-003
Po-210	5,276.09	5,231.34	5,291.00	1.00	1.042E-003	1.473E-003
Pu-238	5,469.98	5,268.63	5,552.01	17.00	1.771E-002	4.419E-003
Am-241	5,484.90	5,298.46	5,604.22	18.00	1.875E-002	4.541E-003
Cm-245	5,417.78	5,395.41	5,447.61	9.00	9.375E-003	3.294E-003
Pu-236	5,760.83	5,611.67	5,887.60	49.00	5.104E-002	7.366E-003
Cm-244	5,775.74	5,641.51	5,902.52	48.00	5.000E-002	7.292E-003
Th-227	6,074.04	5,932.35	6,178.45	10.00	1.042E-002	3.455E-003
Cm-242	6,148.62	6,118.79	6,178.45	5.00	5.208E-003	2.552E-003

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
4:08:44PM 11/18/2014

Sample

Sample Name: ICB;AV185
Comment:

Spectrum #1 Analysis #1
Analyst: 60040

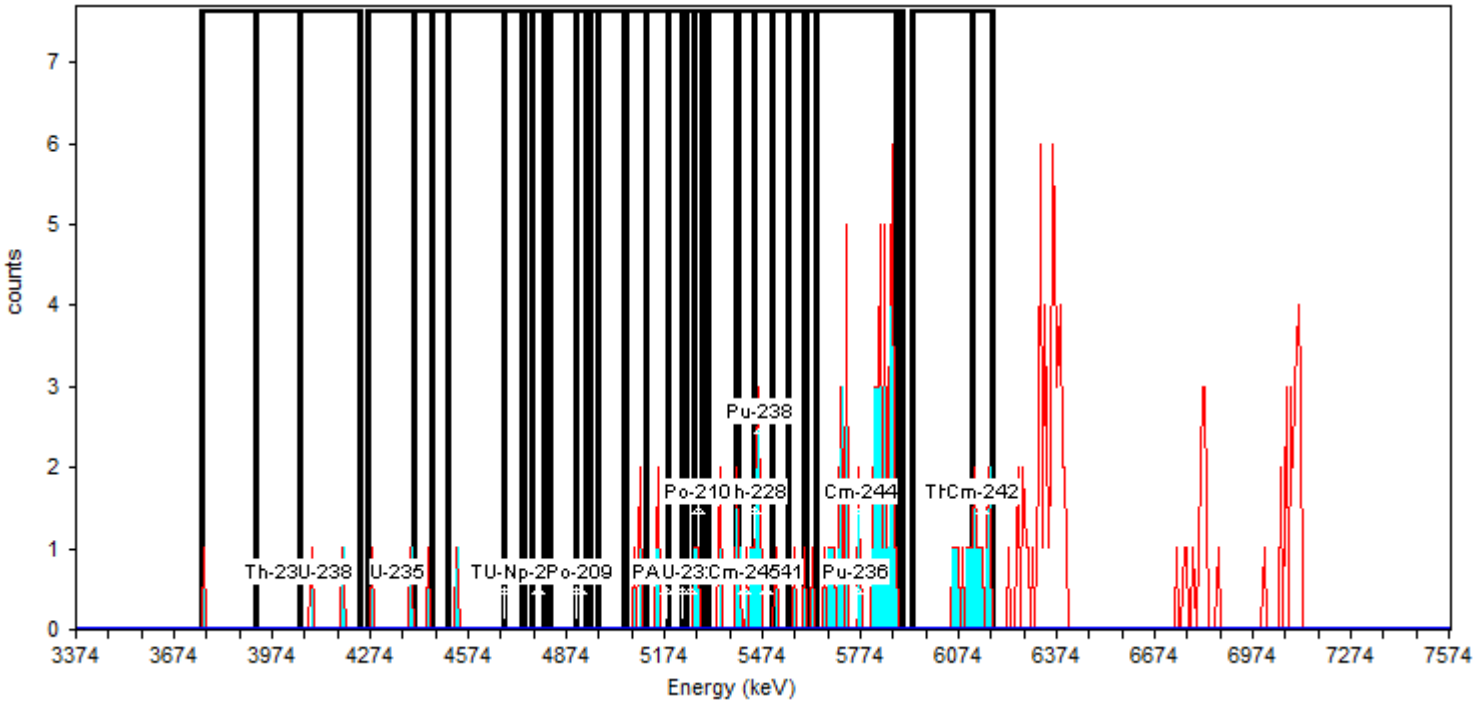
Batch

Batch Name: November2014
Description:

Acquisition

Detector: AV185 , SN: 50-119I1
Acquisition Start Date: 11/18/2014 12:05:49AM
Live Time: 960.00 min.
Real Time: 960.00 min.
Calibration Name: IC-9817;AV185-20140702
Calibration Date: 7/2/2014 12:04:32PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 179.00

Nuclide Summary (ROI)

RegionName	Peak Energy (keV)	Start Energy (keV)	End Energy (keV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3,985.93	3,754.75	4,053.05	1.00	1.042E-003	1.473E-003
U-238	4,135.08	3,918.81	4,239.49	2.00	2.083E-003	1.804E-003
U-235	4,358.81	4,261.86	4,463.21	3.00	3.125E-003	2.083E-003
Th-230	4,679.48	4,403.55	4,746.60	2.00	2.083E-003	1.804E-003
U-234	4,709.31	4,507.96	4,821.17	1.00	1.042E-003	1.473E-003
Pu-242	4,903.21	4,679.48	4,947.95	0.00	0.000E+000	1.473E-003
Th-229	4,858.46	4,739.14	5,119.48	3.00	3.125E-003	2.083E-003
Np-237	4,783.89	4,768.97	4,806.26	0.00	0.000E+000	1.473E-003
Po-209	4,918.12	4,903.21	4,933.04	0.00	0.000E+000	1.473E-003
Pu-239	5,179.14	4,970.33	5,238.80	6.00	6.250E-003	2.756E-003
Am-243	5,231.34	5,052.36	5,305.92	8.00	8.333E-003	3.125E-003
U-232	5,253.71	5,059.82	5,402.86	13.00	1.354E-002	3.898E-003
Th-228	5,447.61	5,186.59	5,507.27	17.00	1.771E-002	4.419E-003
Po-210	5,276.09	5,231.34	5,291.00	2.00	2.083E-003	1.804E-003
Pu-238	5,469.98	5,268.63	5,552.01	18.00	1.875E-002	4.541E-003
Am-241	5,484.90	5,298.46	5,604.22	18.00	1.875E-002	4.541E-003
Cm-245	5,417.78	5,395.41	5,447.61	6.00	6.250E-003	2.756E-003
Pu-236	5,760.83	5,611.67	5,887.60	48.00	5.000E-002	7.292E-003
Cm-244	5,775.74	5,641.51	5,902.52	47.00	4.896E-002	7.217E-003
Th-227	6,074.04	5,932.35	6,178.45	15.00	1.563E-002	4.167E-003
Cm-242	6,148.62	6,118.79	6,178.45	9.00	9.375E-003	3.294E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
10:25:31AM 11/19/2014

Sample

Sample Name: ICB;AV188
Comment:

Spectrum #1 Analysis #1
Analyst: 60040

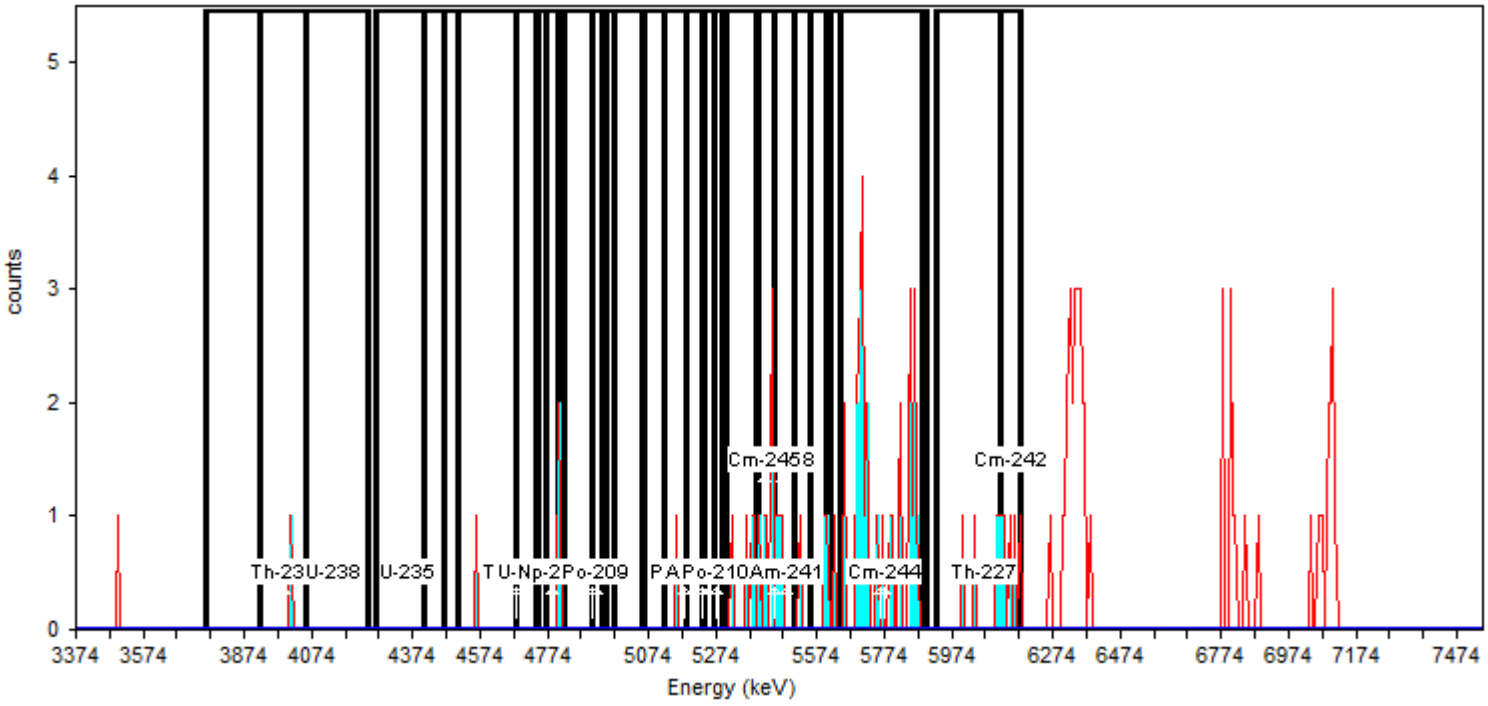
Batch

Batch Name: November2014a
Description:

Acquisition

Detector: AV188 , SN: 50-110X4
Acquisition Start Date: 11/18/2014 5:54:39PM
Live Time: 960.00 min.
Real Time: 960.02 min.
Calibration Name: IC-9886;AV188-20140702
Calibration Date: 7/2/2014 12:04:42PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 106.00

Nuclide Summary (ROI)

RegionName	Peak Energy (keV)	Start Energy (keV)	End Energy (keV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3,985.93	3,754.75	4,053.05	1.00	1.042E-003	1.473E-003
U-238	4,135.08	3,918.81	4,239.49	1.00	1.042E-003	1.473E-003
U-235	4,358.81	4,261.86	4,463.21	0.00	0.000E+000	1.473E-003
Th-230	4,679.48	4,403.55	4,746.60	1.00	1.042E-003	1.473E-003
U-234	4,709.31	4,507.96	4,821.17	3.00	3.125E-003	2.083E-003
Pu-242	4,903.21	4,679.48	4,947.95	2.00	2.083E-003	1.804E-003
Th-229	4,858.46	4,739.14	5,119.48	2.00	2.083E-003	1.804E-003
Np-237	4,783.89	4,768.97	4,806.26	2.00	2.083E-003	1.804E-003
Po-209	4,918.12	4,903.21	4,933.04	0.00	0.000E+000	1.473E-003
Pu-239	5,179.14	4,970.33	5,238.80	1.00	1.042E-003	1.473E-003
Am-243	5,231.34	5,052.36	5,305.92	1.00	1.042E-003	1.473E-003
U-232	5,253.71	5,059.82	5,402.86	6.00	6.250E-003	2.756E-003
Th-228	5,447.61	5,186.59	5,507.27	13.00	1.354E-002	3.898E-003
Po-210	5,276.09	5,231.34	5,291.00	0.00	0.000E+000	1.473E-003
Pu-238	5,469.98	5,268.63	5,552.01	14.00	1.458E-002	4.034E-003
Am-241	5,484.90	5,298.46	5,604.22	16.00	1.667E-002	4.295E-003
Cm-245	5,417.78	5,395.41	5,447.61	6.00	6.250E-003	2.756E-003
Pu-236	5,760.83	5,611.67	5,887.60	29.00	3.021E-002	5.705E-003
Cm-244	5,775.74	5,641.51	5,902.52	28.00	2.917E-002	5.610E-003
Th-227	6,074.04	5,932.35	6,178.45	9.00	9.375E-003	3.294E-003
Cm-242	6,148.62	6,118.79	6,178.45	6.00	6.250E-003	2.756E-003

Run Logs

Alpha Spectroscopy Run Log

Detector: AV149

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
07/08/14 17:54	140	IC 160-130244/1		130244			PS
07/08/14 22:46	60	ICV 160-130254/1		130254			PS
11/18/14 00:05	960	ICB 160-158209/1		158209			PS
11/19/14 18:43	60	CCV 160-158306/1		158306			PS
11/24/14 18:02	1	PULSER 160-159622/1		159622			MLK
11/24/14 19:53	400	160-9438-1	MW358-20141113-21	159622	158130	A-01-R	MLK

Detector: AV150

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
07/08/14 17:55	140	IC 160-130245/1		130245			PS
07/08/14 22:47	60	ICV 160-130255/1		130255			PS
11/18/14 00:05	960	ICB 160-158210/1		158210			
11/18/14 17:54	960	ICB 160-158210/2		158210			PS
11/19/14 18:43	60	CCV 160-158307/1		158307			PS
11/24/14 18:02	1	PULSER 160-159623/1		159623			MLK
11/24/14 19:53	400	160-9438-1 DU	MW358-20141113-21 DU	159623	158130	A-01-R	MLK

Detector: AV165

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
07/06/14 21:29	140	IC 160-130240/1		130240			PS
07/09/14 00:44	60	ICV 160-130508/1		130508			PS
11/18/14 00:05	960	ICB 160-158225/1		158225			PS
11/19/14 18:45	60	CCV 160-158316/1		158316			PS
11/23/14 14:44	1	PULSER 160-159070/1		159070			MLK
11/23/14 22:34	400	MB 160-158130/1-A		159070	158130	A-01-R	MLK

Detector: AV168

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
07/06/14 18:43	140	IC 160-129705/1		129705			PS
07/09/14 00:44	60	ICV 160-130510/1		130510			PS
11/18/14 00:05	960	ICB 160-158228/1		158228			PS
11/19/14 18:45	60	CCV 160-158317/1		158317			PS
11/23/14 14:44	1	PULSER 160-159071/1		159071			MLK
11/23/14 22:34	400	LCS 160-158130/2-A		159071	158130	A-01-R	MLK

Detector: AV173

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
07/06/14 18:44	140	IC 160-129710/1		129710			PS
07/09/14 00:46	60	ICV 160-130515/1		130515			PS
11/18/14 00:05	960	ICB 160-158233/1		158233			
11/18/14 17:54	960	ICB 160-158233/2		158233			PS
11/19/14 18:45	60	CCV 160-158320/1		158320			PS
11/23/14 14:44	1	PULSER 160-159074/1		159074			MLK
11/23/14 22:34	400	160-9438-2	MW359-20141113-21	159074	158130	A-01-R	MLK

Alpha Spectroscopy Run Log

Detector: AV181

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
07/02/14 09:00	140	IC 160-129668/1		129668			PS
07/09/14 18:40	60	ICV 160-130523/1		130523			PS
11/18/14 00:05	960	ICB 160-158241/1		158241			PS
11/18/14 20:50	60	CCV 160-158241/2		158241			PS
11/21/14 13:49	1	PULSER 160-158845/1		158845			MLK
11/21/14 16:13	400	MB 160-158134/1-A		158845	158134	A-01-R	MLK

Detector: AV182

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
07/02/14 09:01	140	IC 160-129669/1		129669			PS
07/09/14 18:40	60	ICV 160-130524/1		130524			PS
11/18/14 00:05	960	ICB 160-158242/1		158242			
11/18/14 17:54	960	ICB 160-158242/2		158242			PS
11/19/14 21:14	60	CCV 160-158325/1		158325			PS
11/21/14 13:49	1	PULSER 160-158846/1		158846			MLK
11/21/14 16:13	400	LCS 160-158134/2-A		158846	158134	A-01-R	MLK

Detector: AV184

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
07/02/14 09:02	140	IC 160-129671/1		129671			PS
07/09/14 18:40	60	ICV 160-130526/1		130526			PS
11/18/14 00:05	960	ICB 160-158244/1		158244			
11/18/14 17:54	960	ICB 160-158244/2		158244			PS
11/19/14 18:46	60	CCV 160-158326/1		158326			PS
11/21/14 13:49	1	PULSER 160-158847/1		158847			MLK
11/21/14 16:13	400	160-9438-1	MW358-20141113-21	158847	158134	A-01-R	MLK

Detector: AV185

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
07/02/14 09:02	140	IC 160-129672/1		129672			PS
07/09/14 18:40	60	ICV 160-130527/1		130527			PS
11/18/14 00:05	960	ICB 160-158245/1		158245			PS
11/18/14 22:23	60	CCV 160-158245/2		158245			
11/19/14 23:05	60	CCV 160-158327/1		158327			PS
11/21/14 13:49	1	PULSER 160-158848/1		158848			MLK
11/21/14 16:13	400	160-9438-1 DU	MW358-20141113-21 DU	158848	158134	A-01-R	MLK

Detector: AV188

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
07/02/14 09:03	140	IC 160-129675/1		129675			PS
07/10/14 21:50	60	ICV 160-131003/1		131003			PS
11/18/14 00:05	960	ICB 160-158248/1		158248			
11/18/14 17:54	960	ICB 160-158248/2		158248			PS
11/19/14 18:46	60	CCV 160-158328/1		158328			PS
11/21/14 13:49	1	PULSER 160-158849/1		158849			MLK
11/21/14 16:13	400	160-9438-2	MW359-20141113-21	158849	158134	A-01-R	MLK

GAS FLOW PROPORTIONAL COUNTER

Method 9310

Gross Alpha / Beta (GFPC) by Method 9310

Prep Batch: 158146

Preparation, Evaporation

Gas Flow Proportional Counter Analysis Detail Report
Prep Batch: 158146

Lab ID: MB 160-158146/1-A | Analyzed: 11/23/14 19:35 | Decay Corrected: No | Ts: 200
Client ID: | Detector: Orange4 | Yield Truncated: No | Tb: 1000
Sigma: 2 | Dil Fac: 1 | Calibration Type: 1

Analyte	MB Result	Count Unc	Total Unc	Qualifier	Unit	RL	MDC	Cs	Cb	CPMs	CPMb	Eff	Anly Batch
Gross Alpha	1.140	0.925	0.934	U	pCi/L	3.00	1.41	36	102	0.180	0.102	0.15410	159374
Gross Beta	0.3974	0.560	0.562	U	pCi/L	4.00	0.911	105	413	0.525	0.413	0.45453	159374

Lab ID: LCS 160-158146/2-A | Analyzed: 11/23/14 19:35 | Decay Corrected: No | Ts: 200
Client ID: | Detector: Orange6 | Yield Truncated: No | Tb: 1000
Sigma: 2 | Dil Fac: 1 | Calibration Type: 1

Analyte	LCS Result	Count Unc	Total Unc	Qualifier	Unit	RL	MDC	Cs	Cb	CPMs	CPMb	Eff	Anly Batch
Gross Alpha	55.39	5.07	8.10		pCi/L	3.00	2.49	542	154	2.710	0.154	0.10394	159374

Lab ID: LCSB 160-158146/3-A | Analyzed: 11/23/14 19:35 | Decay Corrected: No | Ts: 200
Client ID: | Detector: Orange11 | Yield Truncated: No | Tb: 1000
Sigma: 2 | Dil Fac: 1 | Calibration Type: 1

Analyte	LCSB Result	Count Unc	Total Unc	Qualifier	Unit	RL	MDC	Cs	Cb	CPMs	CPMb	Eff	Anly Batch
Gross Beta	99.25	3.32	10.5		pCi/L	4.00	1.13	3834	571	19.170	0.571	0.42149	159374

Lab ID: 160-9438-1 | Analyzed: 11/25/14 07:52 | Decay Corrected: No | Ts: 200
Client ID: MW358-20141113-21 | Detector: Protean15 | Yield Truncated: No | Tb: 1000
Sigma: 2 | Dil Fac: 1 | Calibration Type: 1

Analyte	Result	Count Unc	Total Unc	Qualifier	Unit	RL	MDC	Cs	Cb	CPMs	CPMb	Eff	Anly Batch
Gross Alpha	17.6	12.6	12.7	U G	pCi/L	3.00	18.3	35	88	0.175	0.088	0.09678	159787
Gross Beta	-1.35	5.42	5.42	U G	pCi/L	4.00	9.57	100	490	0.500	0.490	0.40754	159787

Lab ID: 160-9438-2 | Analyzed: 11/23/14 19:36 | Decay Corrected: No | Ts: 200
Client ID: MW359-20141113-21 | Detector: Orange16 | Yield Truncated: No | Tb: 1000
Sigma: 2 | Dil Fac: 1 | Calibration Type: 1

Analyte	Result	Count Unc	Total Unc	Qualifier	Unit	RL	MDC	Cs	Cb	CPMs	CPMb	Eff	Anly Batch
Gross Alpha	49.6	21.5	22.2	G	pCi/L	3.00	27.4	64	128	0.320	0.128	0.10263	159374
Gross Beta	12.3	8.53	8.62	U G	pCi/L	4.00	12.7	147	468	0.735	0.468	0.41728	159374

Gas Flow Proportional Counter Analysis Detail Report
Prep Batch: 158146

Quality Control Summary

Method Blank ID:	Analyte	Parent Result	Spike Added	MB Result	Qualifier	Unit	% Rec	% Rec Limits	RPD	RER	DER	RER Limit	Z Factor
MB 160-158146/1-A	Gross Alpha			1.140	U	pCi/L							
MB 160-158146/1-A	Gross Beta			0.3974	U	pCi/L							

Lab Control Sample ID:	Analyte	Parent Result	Spike Added	LCS Result	Qualifier	Unit	% Rec	% Rec Limits	RPD	RER	DER	RER Limit	Z Factor
LCS 160-158146/2-A	Gross Alpha		50.1	55.39		pCi/L	111	73 - 133					

Lab Control Sample Beta ID:	Analyte	Parent Result	Spike Added	LCSB Result	Qualifier	Unit	% Rec	% Rec Limits	RPD	RER	DER	RER Limit	Z Factor
LCSB 160-158146/3-A	Gross Beta		96.2	99.25		pCi/L	103	75 - 125					

Glossary:

Ts = Count Duration, Sample

Tb = Count Duration, Background

Cs = Total Counts, Sample

Cb = Total Counts, Background

CPMs = Counts Per Minute, Sample

CPMb = Counts Per Minute, Background

Eff = Efficiency

GAS FLOW PROPORTIONAL COUNTER BATCH WORKSHEET

Lab Name: TestAmerica St. Louis Job No.: 160-9438-1

SDG No.:

Batch Number: 158146 Batch Start Date: 11/19/14 12:09 Batch Analyst: Hines, Joseph

Batch Method: Evaporation Batch End Date: 11/21/14 18:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	GrossWtPlncht	TareWtPlncht	MassPlncht	Sr-90 00023	Th-230 00024
MB 160-158146/1		Evaporation, 9310		200 mL	8.6218 g	8.6215 g	0.0003 g		
LCS 160-158146/2		Evaporation, 9310		200 mL	8.6983 g	8.6442 g	0.0541 g		1 mL
LCSB 160-158146/3		Evaporation, 9310		200 mL	8.6745 g	8.6199 g	0.0546 g	1 mL	
160-9438-E-1	MW358-20141113-21	Evaporation, 9310	T	23 mL	8.7161 g	8.6309 g	0.0852 g		
160-9438-D-2	MW359-20141113-21	Evaporation, 9310	T	17 mL	8.6931 g	8.6103 g	0.0828 g		

Lab Sample ID	Client Sample ID	Method Chain	Basis	AnalysisComment					
MB 160-158146/1		Evaporation, 9310							
LCS 160-158146/2		Evaporation, 9310		A					
LCSB 160-158146/3		Evaporation, 9310		B					
160-9438-E-1	MW358-20141113-21	Evaporation, 9310	T						
160-9438-D-2	MW359-20141113-21	Evaporation, 9310	T						

Batch Notes	
Person's name who witnessed reagent drop	lem
Analyst who added reagent	mjs
SOP Number	ST-RC-0002, ST-RC-0020

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - A

Addr: 4

Sample ID MB 160-158146/1-A

Repeat 1

Carrier No. 0

Batch ID 158146

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 11/23/2014 7:35:28 PM

Collection Date 1 1/1/1900

Half Life 0.00 ***days***

Count Ended 11/23/2014 10:55:44 PM

Collection Date 2 1/1/1900

Decay Factor 1.000

Sample Count Time 200.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.102	36	0.180	0.078
sd	0.000			0.010	6.000	0.030	0.032
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.413	105	0.525	0.112
sd	0.000			0.020	10.247	0.051	0.055

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - C

Addr: 6

Sample ID LCS 160-158146/2-A

Repeat 1

Carrier No. 0

Batch ID 158146

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 11/23/2014 7:35:40 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 11/23/2014 10:55:53 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 200.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.154	542	2.710	2.556
sd	0.000			0.012	23.281	0.116	0.117
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.490	290	1.450	0.960
sd	0.000			0.022	17.029	0.085	0.088

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 8-11 - D

Addr: 11

Sample ID LCSB 160-158146/3-A

Repeat 1

Carrier No. 0

Batch ID 158146

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 11/23/2014 7:35:53 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 11/23/2014 10:56:07 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 200.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.094	33	0.165	0.071
sd	0.000			0.010	5.745	0.029	0.030
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.571	3,834	19.170	18.599
sd	0.000			0.024	61.919	0.310	0.311

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Low Level Alpha/Beta Count Results
Sample Activity Report

Protean 12-15 - D **Address:** ***15***

Sample ID ***160-9438-E-1-A*** **Repeat** ***1***

Batch ID ***158146***

Count Routine ***Gross Alpha Beta*** **Detector Volts** ***1,515.0***

Sample Qty 0.200 ***l*** **sd** 0.000 ***l***

Residual Wt 0.000 ***mg*** **sd** 0.000 ***mg***

Count Date 11/25/201‹ 07:52 **Collection Date 1** **Half Life** 0.00 ***days***
Collection Date 2 **Decay Factor** 1.000

Sample Count Time 200.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.088	35	0.175	0.087
sd	0.000			0.009	5.916	0.030	0.031
Alpha to Beta	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.490	100	0.500	0.010
sd	0.000			0.022	10.000	0.050	0.055

	Net Activity dpm	LLD dpm	Net Concentration * pCi/l	MDC pCi/l	Limits pCi/l	% of Limits
Alpha	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			
Beta	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			

*** Note: Decay Corrected MDC Method -** **Tb = Ts < 10**
Error = 0.00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - A

Addr: 16

Sample ID 160-9438-D-2-A

Repeat 1

Carrier No. 0

Batch ID 158146

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 11/23/2014 7:36:33 PM

Count Ended 11/23/2014 10:56:48 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 200.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.128	64	0.320	0.192
sd	0.000			0.011	8.000	0.040	0.042
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.468	147	0.735	0.267
sd	0.000			0.022	12.124	0.061	0.064

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Daily Checks

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Gas Proportional Counter Daily Quality Control Checks

APPROVED
By Ashley Silas at 1:14 am, Nov 25, 2014

Sunday, November 23, 2014

Instrument: ***Orange***

Detector ID	Check Type	Alpha CPM	Alpha Mean	Alpha +/- limit	Alpha Deviation	Alpha Flag	Beta CPM	Beta Mean	Beta +/- limit	Beta Deviation	Beta Flag
Detector 0											
5:21 PM	**Efficiency**										
	Background	0.125	0.086	0.024	0.039	**Pass**	0.355	0.396	0.065	-0.041	**Pass**
	Crosstalk										
7:11 PM	**Efficiency**	10070.13	10149.65	304.49	-79.52	**Pass**					
	Background										
	Crosstalk	3056.000	3258.900	55.666	-202.900	**DOEF**					
7:16 PM	**Efficiency**						32965.97	33739.55	1012.19	-773.58	**Pass**
	Background										
	Crosstalk						948.585	237.400	143.963	711.185	**DOEF**
Detector 1											
5:21 PM	**Efficiency**										
	Background	0.250	0.103	0.026	0.147	**FAIL**	0.290	0.356	0.073	-0.066	**Pass**
	Crosstalk										
7:11 PM	**Efficiency**	9905.67	10173.40	305.20	-267.73	**Pass**					
	Background										
	Crosstalk	2957.000	3028.900	109.715	-71.900	**Pass**					
7:16 PM	**Efficiency**						33689.18	33478.80	1004.36	210.38	**Pass**
	Background										
	Crosstalk						266.098	42.975	30.711	223.123	**DOEF**
Detector 2											
5:21 PM	**Efficiency**										
	Background	0.415	0.234	0.038	0.181	**FAIL**	0.880	0.627	0.074	0.253	**FAIL**
	Crosstalk										
7:11 PM	**Efficiency**	10986.50	10972.86	329.19	13.64	**Pass**					
	Background										
	Crosstalk	3240.500	3366.220	137.933	-125.720	**Pass**					

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Gas Proportional Counter Daily Quality Control Checks

Sunday, November 23, 2014

Instrument: Orange

Detector ID	Check Type	Alpha CPM	Alpha Mean	Alpha +/- limit	Alpha Deviation	Alpha Flag	Beta CPM	Beta Mean	Beta +/- limit	Beta Deviation	Beta Flag
7:16 PM	**Efficiency**						23050.83	23193.20	695.80	-142.37	**Pass**
	Background										
	Crosstalk						286.450	37.375	27.717	249.075	**DOEF**
Detector 3											
5:21 PM	**Efficiency**										
	Background	0.135	0.095	0.020	0.041	**Pass**	0.665	0.507	0.062	0.158	**Pass**
	Crosstalk										
7:12 PM	**Efficiency**	10729.08	10703.24	321.10	25.84	**Pass**					
	Background										
	Crosstalk	3304.500	3488.780	118.326	-184.280	**Pass**					
7:16 PM	**Efficiency**						30619.19	30620.69	918.62	-1.51	**Pass**
	Background										
	Crosstalk						287.468	43.524	34.997	243.944	**DOEF**
Detector 4											
5:21 PM	**Efficiency**										
	Background	0.145	0.094	0.026	0.051	**Pass**	0.465	0.435	0.081	0.030	**Pass**
	Crosstalk										
7:12 PM	**Efficiency**	10321.89	10616.58	318.50	-294.69	**Pass**					
	Background										
	Crosstalk	3880.000	4041.960	93.896	-161.960	**Pass**					
7:17 PM	**Efficiency**						26019.43	26048.10	781.44	-28.67	**Pass**
	Background										
	Crosstalk						7.123	8.525	2.042	-1.402	**Pass**
Detector 5											
5:21 PM	**Efficiency**										
	Background	0.385	0.155	0.047	0.230	**FAIL**	0.625	0.425	0.091	0.200	**Pass**
	Crosstalk										

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Gas Proportional Counter Daily Quality Control Checks

Sunday, November 23, 2014

Instrument: ***Orange***

Detector ID	Check Type	Alpha CPM	Alpha Mean	Alpha +/- limit	Alpha Deviation	Alpha Flag	Beta CPM	Beta Mean	Beta +/- limit	Beta Deviation	Beta Flag
7:12 PM	**Efficiency**	10682.50	10779.16	323.37	-96.66	**Pass**					
	Background										
	Crosstalk	3894.000	3963.700	62.110	-69.700	**Pass**					
7:17 PM	**Efficiency**						21486.25	21843.90	655.32	-357.66	**Pass**
	Background										
	Crosstalk						5.088	5.095	1.480	-0.007	**Pass**
Detector 6											
5:21 PM	**Efficiency**										
	Background	0.120	0.108	0.029	0.012	**Pass**	0.570	0.495	0.060	0.075	**Pass**
	Crosstalk										
7:12 PM	**Efficiency**	10490.68	10768.46	323.05	-277.78	**Pass**					
	Background										
	Crosstalk	3779.500	3929.080	151.831	-149.580	**Pass**					
7:17 PM	**Efficiency**						29165.07	29157.55	874.73	7.52	**Pass**
	Background										
	Crosstalk						5.088	5.750	1.400	-0.662	**Pass**
Detector 7											
5:22 PM	**Efficiency**										
	Background	0.215	0.087	0.039	0.128	**FAIL**	0.475	0.383	0.066	0.092	**Pass**
	Crosstalk										
7:12 PM	**Efficiency**	11682.19	11415.50	342.47	266.69	**Pass**					
	Background										
	Crosstalk	4207.500	4055.000	78.818	152.500	**Pass**					
7:17 PM	**Efficiency**						27972.26	27782.35	833.47	189.91	**Pass**
	Background										
	Crosstalk						10.176	4.600	1.392	5.576	**DOEF**
Detector 8											

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Gas Proportional Counter Daily Quality Control Checks

Sunday, November 23, 2014

Instrument: ***Orange***

Detector ID	Check Type	Alpha CPM	Alpha Mean	Alpha +/- limit	Alpha Deviation	Alpha Flag	Beta CPM	Beta Mean	Beta +/- limit	Beta Deviation	Beta Flag
5:22 PM	**Efficiency**										
	Background	0.165	0.074	0.023	0.092	**FAIL**	0.445	0.379	0.047	0.066	**Pass**
	Crosstalk										
7:12 PM	**Efficiency**						33933.90	33564.38	1006.93	369.52	**Pass**
	Background										
	Crosstalk						22.387	16.400	3.440	5.987	**Pass**
7:16 PM	**Efficiency**	9920.07	10109.55	303.29	-189.48	**Pass**					
	Background										
	Crosstalk	3334.500	3394.400	50.504	-59.900	**Pass**					
Detector 9											
5:22 PM	**Efficiency**										
	Background	0.180	0.124	0.039	0.056	**Pass**	0.490	0.391	0.066	0.099	**Pass**
	Crosstalk										
7:12 PM	**Efficiency**						33691.98	33894.25	1016.83	-202.27	**Pass**
	Background										
	Crosstalk						22.387	14.000	4.085	8.387	**WARNING**
7:16 PM	**Efficiency**	9876.13	10270.92	308.13	-394.79	**FAIL**					
	Background										
	Crosstalk	3227.000	3336.480	71.578	-109.480	**Pass**					
Detector 10											
5:22 PM	**Efficiency**										
	Background	0.190	0.101	0.029	0.089	**FAIL**	0.455	0.449	0.071	0.006	**Pass**
	Crosstalk										
7:12 PM	**Efficiency**						23385.47	23268.15	698.04	117.32	**Pass**
	Background										
	Crosstalk						7.632	5.525	1.626	2.107	**Pass**
7:16 PM	**Efficiency**	9491.49	9314.42	279.43	177.07	**Pass**					
	Background										
	Crosstalk	5190.500	5412.260	206.903	-221.760	**Pass**					

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Instrument: Orange

Detector ID	Check Type	Alpha CPM	Alpha Mean	Alpha +/- limit	Alpha Deviation	Alpha Flag	Beta CPM	Beta Mean	Beta +/- limit	Beta Deviation	Beta Flag
Detector 11											
5:22 PM	**Efficiency**										
	Background	0.145	0.110	0.029	0.036	**Pass**	0.580	0.529	0.073	0.051	**Pass**
	Crosstalk										
7:12 PM	**Efficiency**						30708.21	29987.20	899.62	721.01	**Pass**
	Background										
	Crosstalk						17.808	15.700	2.687	2.108	**Pass**
7:16 PM	**Efficiency**	10823.23	10755.42	322.66	67.81	**Pass**					
	Background										
	Crosstalk	3303.000	3246.680	84.085	56.320	**Pass**					
Detector 12											
5:22 PM	**Efficiency**										
	Background	0.155	0.119	0.030	0.036	**Pass**	0.615	0.572	0.072	0.043	**Pass**
	Crosstalk										
7:12 PM	**Efficiency**						28363.81	25927.73	777.83	2436.09	**FAIL**
	Background										
	Crosstalk						20.860	12.950	1.629	7.910	**DOEF**
7:16 PM	**Efficiency**	10653.41	11039.74	331.19	-386.33	**FAIL**					
	Background										
	Crosstalk	3463.000	3628.500	68.433	-165.500	**WARNING**					
Detector 13											
5:22 PM	**Efficiency**										
	Background	0.205	0.158	0.041	0.047	**Pass**	0.565	0.525	0.058	0.040	**Pass**
	Crosstalk										
7:12 PM	**Efficiency**						21942.57	22266.53	668.00	-323.96	**Pass**
	Background										
	Crosstalk						21.878	14.975	3.432	6.903	**WARNING**

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Gas Proportional Counter Daily Quality Control Checks

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Instrument: Orange

Detector ID	Check Type	Alpha CPM	Alpha Mean	Alpha +/- limit	Alpha Deviation	Alpha Flag	Beta CPM	Beta Mean	Beta +/- limit	Beta Deviation	Beta Flag
7:16 PM	**Efficiency**	10992.48	11233.00	336.99	-240.52	**Pass**					
	Background										
	Crosstalk	3510.000	3521.820	75.777	-11.820	**Pass**					
Detector 14											
7:12 PM	**Efficiency**						0.00	29008.58	870.26	-29008.58	**FAIL**
	Background										
	Crosstalk						0.000	36.750	9.105	-36.750	**DOEF**
7:16 PM	**Efficiency**	0.00	11064.70	331.94	-11064.70	**FAIL**					
	Background										
	Crosstalk	32.000	3646.460	71.414	-3614.460	**DOEF**					
Detector 15											
5:22 PM	**Efficiency**										
	Background	0.275	0.148	0.030	0.127	**FAIL**	0.510	0.492	0.085	0.018	**Pass**
	Crosstalk										
7:13 PM	**Efficiency**						27587.99	27467.78	824.03	120.21	**Pass**
	Background										
	Crosstalk						39.177	21.400	5.218	17.777	**DOEF**
7:16 PM	**Efficiency**	11818.41	11797.00	353.91	21.41	**Pass**					
	Background										
	Crosstalk	3644.000	3542.000	85.963	102.000	**Pass**					
Detector 16											
5:22 PM	**Efficiency**										
	Background	0.155	0.123	0.033	0.033	**Pass**	0.600	0.498	0.063	0.102	**Pass**
	Crosstalk										
7:19 PM	**Efficiency**	9885.05	10041.75	301.25	-156.70	**Pass**					
	Background										
	Crosstalk	3170.000	3273.800	38.183	-103.800	**WARNING**					

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Instrument: Orange

Detector ID	Check Type	Alpha CPM	Alpha Mean	Alpha +/- limit	Alpha Deviation	Alpha Flag	Beta CPM	Beta Mean	Beta +/- limit	Beta Deviation	Beta Flag
7:23 PM	**Efficiency**						33479.16	33491.33	1004.74	-12.16	**Pass**
	Background										
	Crosstalk						53.423	32.800	8.069	20.623	**WARNING**
Detector 17											
5:22 PM	**Efficiency**										
	Background	0.160	0.146	0.043	0.014	**Pass**	0.575	0.433	0.078	0.142	**Pass**
	Crosstalk										
7:19 PM	**Efficiency**	9768.95	10056.48	301.69	-287.53	**Pass**					
	Background										
	Crosstalk	3274.000	3425.740	60.289	-151.740	**WARNING**					
7:23 PM	**Efficiency**						33573.04	33457.18	1003.72	115.86	**Pass**
	Background										
	Crosstalk						21.878	13.975	2.967	7.903	**WARNING**
Detector 18											
5:22 PM	**Efficiency**										
	Background	0.110	0.107	0.025	0.003	**Pass**	0.465	0.402	0.044	0.063	**Pass**
	Crosstalk										
7:19 PM	**Efficiency**	10821.71	11053.86	331.62	-232.15	**Pass**					
	Background										
	Crosstalk	3535.000	3611.520	52.801	-76.520	**Pass**					
7:23 PM	**Efficiency**						23179.14	23209.68	696.29	-30.53	**Pass**
	Background										
	Crosstalk						27.984	16.100	4.093	11.884	**WARNING**
Detector 19											
5:22 PM	**Efficiency**										
	Background	0.095	0.089	0.033	0.006	**Pass**	0.470	0.374	0.061	0.096	**Pass**
	Crosstalk										

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Instrument: ***Orange***

Detector ID	Check Type	Alpha CPM	Alpha Mean	Alpha +/- limit	Alpha Deviation	Alpha Flag	Beta CPM	Beta Mean	Beta +/- limit	Beta Deviation	Beta Flag
7:19 PM	**Efficiency**	10930.32	11009.96	330.30	-79.64	**Pass**					
	Background										
	Crosstalk	3724.500	3716.300	50.984	8.200	**Pass**					
7:23 PM	**Efficiency**						30983.76	30982.63	929.48	1.14	**Pass**
	Background										
	Crosstalk						24.422	16.650	4.107	7.772	**Pass**
Detector 20											
5:22 PM	**Efficiency**										
	Background	0.130	0.084	0.024	0.046	**Pass**	0.435	0.354	0.051	0.082	**Pass**
	Crosstalk										
7:19 PM	**Efficiency**	10551.26	10934.68	328.04	-383.42	**FAIL**					
	Background										
	Crosstalk	3491.500	3574.300	107.105	-82.800	**Pass**					
7:23 PM	**Efficiency**						25804.18	25820.98	774.63	-16.79	**Pass**
	Background										
	Crosstalk						22.896	20.300	5.444	2.596	**Pass**
Detector 21											
5:22 PM	**Efficiency**										
	Background	0.150	0.088	0.028	0.063	**Pass**	0.260	0.312	0.035	-0.052	**Pass**
	Crosstalk										
7:19 PM	**Efficiency**	10971.49	11170.12	335.10	-198.63	**Pass**					
	Background										
	Crosstalk	3495.000	3672.660	78.069	-177.660	**WARNING**					
7:23 PM	**Efficiency**						21896.59	22199.20	665.98	-302.61	**Pass**
	Background										
	Crosstalk						29.510	13.000	2.763	16.510	**DOEF**
Detector 22											

TestAmerica
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Instrument: ***Orange***

Detector ID	Check Type	Alpha CPM	Alpha Mean	Alpha +/- limit	Alpha Deviation	Alpha Flag	Beta CPM	Beta Mean	Beta +/- limit	Beta Deviation	Beta Flag
5:22 PM	**Efficiency**										
	Background	0.140	0.081	0.017	0.060	**FAIL**	0.425	0.388	0.053	0.037	**Pass**
	Crosstalk										
7:19 PM	**Efficiency**	10706.04	10918.70	327.56	-212.66	**Pass**					
	Background										
	Crosstalk	3553.500	3612.240	230.452	-58.740	**Pass**					
7:24 PM	**Efficiency**						29095.82	29331.13	879.93	-235.30	**Pass**
	Background										
	Crosstalk						16.281	13.075	3.867	3.206	**Pass**
Detector 23											
5:22 PM	**Efficiency**										
	Background	0.135	0.098	0.039	0.037	**Pass**	0.460	0.441	0.090	0.019	**Pass**
	Crosstalk										
7:19 PM	**Efficiency**	11558.60	11544.58	346.34	14.03	**Pass**					
	Background										
	Crosstalk	3672.500	3809.981	484.264	-137.481	**Pass**					
7:24 PM	**Efficiency**						27298.49	27644.68	829.34	-346.18	**Pass**
	Background										
	Crosstalk						15.264	13.125	3.128	2.139	**Pass**

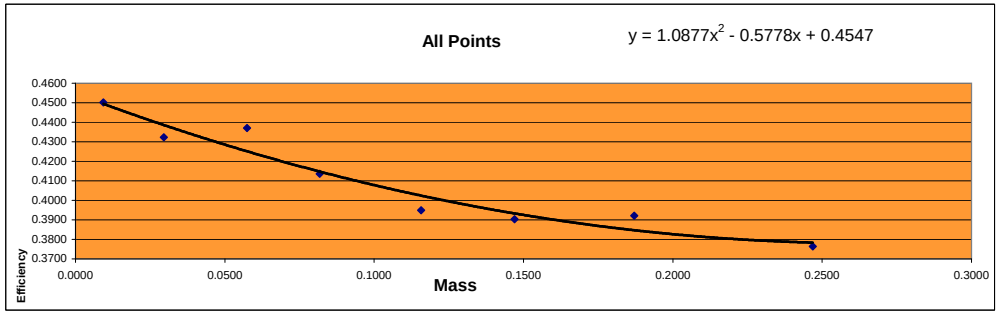
Alpha Beta Calibrations

Curve is for Gross Beta
Strontium 90
and
Total Strontium

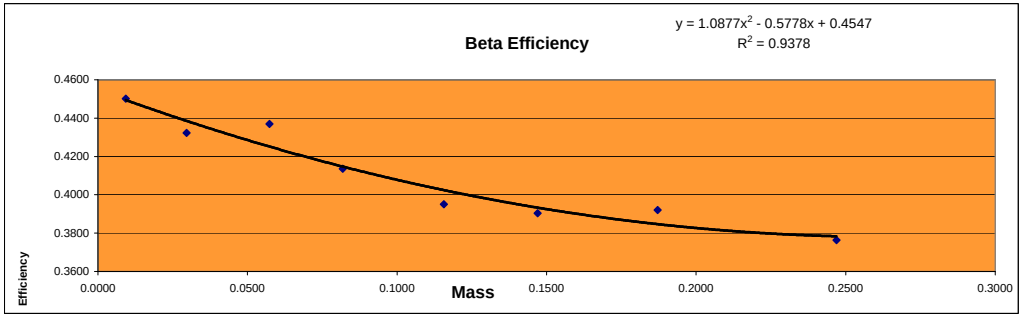
Orange 4

Detector ID	Std ID	Count Date	Sample Wt	Count Time	Beta Counts	DPM 41588.469 CPM	Sr-90 Eff	Standard Aliquot
4	B1	1/23/2013 15:18	0.0093	5	93592	18718.400	0.4501	1mL
4	B2	1/23/2013 15:09	0.0296	5	89877	17975.400	0.4322	1mL
4	B3	1/23/2013 15:00	0.0574	5	90869	18173.800	0.4370	1mL
4	B4	1/23/2013 14:53	0.0818	5	86007	17201.400	0.4136	1mL
4	B5	1/23/2013 14:45	0.1157	5	82135	16427.000	0.3950	1mL
4	B6	1/23/2013 15:46	0.1470	5	81161	16232.200	0.3903	1mL
4	B7	1/23/2013 15:37	0.1871	5	81527	16305.400	0.3921	1mL
4	B8	1/23/2013 15:27	0.2469	5	78270	15654.000	0.3764	1mL

Mass	Measured Efficiency	Theoretical Efficiency	Percent Δ Efficiency
0.0093	0.4501	0.4494	0.15%
0.0296	0.4322	0.4386	-1.44%
0.0574	0.4370	0.4251	2.79%
0.0818	0.4136	0.4147	-0.27%
0.1157	0.3950	0.4024	-1.84%
0.1470	0.3903	0.3933	-0.75%
0.1871	0.3921	0.3847	1.92%
0.2469	0.3764	0.3783	-0.51%



Mass	Efficiency
0.0093	0.4501
0.0296	0.4322
0.0574	0.4370
0.0818	0.4136
0.1157	0.3950
0.1470	0.3903
0.1871	0.3921
0.2469	0.3764



Standard ID
Strontium 90
Sr-90_00004 #6322
Cert# 80573-334 Ref. date 9/172009

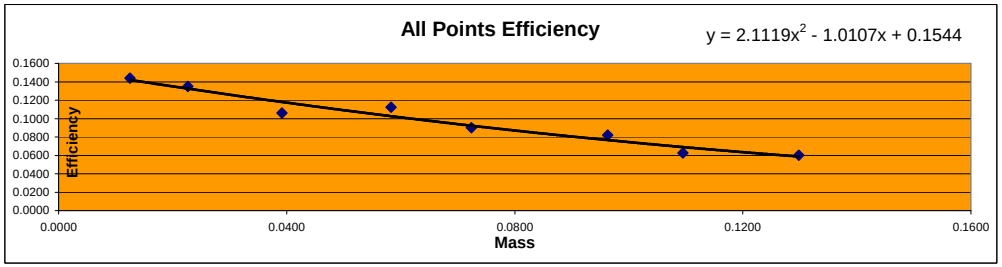
Initial Activity:	22560	dpm/mL
Reference Date:	9/17/2009	
Count Date:	1/23/2013	
Elapsed Time:	1224.000	days
Half Life:	10409.625	days
Exponential Term:	0.921730256	
Corrected Activity:	20794.23458	dpm/mL
Decay Activity (Sr/Y-90)	41588.46916	dpm

Curve is for Gross Alpha

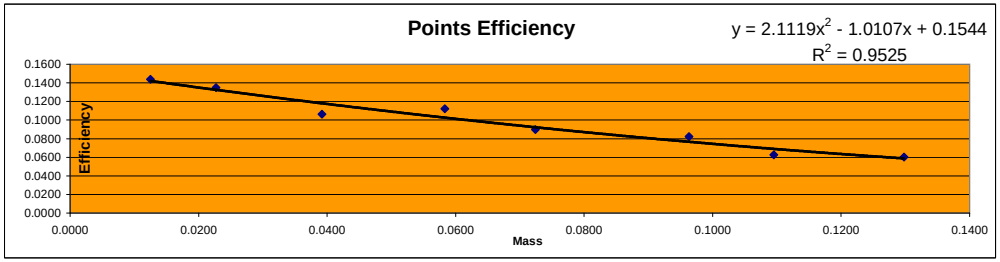
Orange 4

Detector ID	Sample ID	Count Date	Mass	Count Time	Alpha Counts	Net CPM	DPM	Th-230 Efficiency	Standard Aliquot
4	A1	7/18/2013 19:58	0.0125	40	13668	341.700	2374.5	0.1439	1mL
4	A2	7/18/2013 18:30	0.0227	40	12813	320.325	2374.5	0.1349	1mL
4	A3	7/18/2013 17:29	0.0392	40	10088	252.200	2374.5	0.1062	1mL
4	A4	7/23/2013 16:41	0.0583	50	13318	266.360	2374.5	0.1122	1mL
4	A5	7/18/2013 15:43	0.0724	40	17085	427.125	4749.0	0.0899	2mL
4	A6	7/18/2013 22:47	0.0963	40	15616	390.400	4749.0	0.0822	2mL
4	A7	7/18/2013 21:52	0.1095	40	11874	296.850	4749.0	0.0625	2mL
4	A8	7/18/2013 21:01	0.1298	40	11426	285.650	4749.0	0.0601	2mL

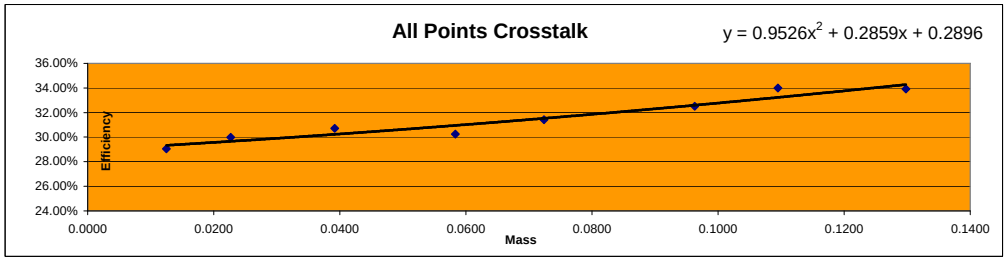
Mass	Measured Efficiency	Theoretical Efficiency	Percent Δ Efficiency
0.0125	0.1439	0.1421	1.27%
0.0227	0.1349	0.1325	1.78%
0.0392	0.1062	0.1180	-10.01%
0.0583	0.1122	0.1027	9.28%
0.0724	0.0899	0.0923	-2.55%
0.0963	0.0822	0.0766	7.25%
0.1095	0.0625	0.0690	-9.46%
0.1298	0.0601	0.0588	2.33%



Mass	Efficiency
0.0125	0.1439
0.0227	0.1349
0.0392	0.1062
0.0583	0.1122
0.0724	0.0899
0.0963	0.0822
0.1095	0.0625
0.1298	0.0601



Detector ID	Sample ID	Mass	Count Time	Alpha Counts	Beta Counts	Alpha CPM	Beta CPM	% α into β	
4	A1	0.0125	40.00	13668	5598	341.70	139.95	29.06%	Min
4	A2	0.0227	40.00	12813	5488	320.33	137.20	29.99%	29.06%
4	A3	0.0392	40.00	10088	4470	252.20	111.75	30.70%	
4	A4	0.0583	40.00	13318	5772	332.95	144.30	30.24%	Max
4	A5	0.0724	40.00	17085	7826	427.13	195.65	31.42%	34.00%
4	A6	0.0963	40.00	15616	7519	390.40	187.98	32.50%	
4	A7	0.1095	40.00	11874	6117	296.85	152.93	34.00%	Mean
4	A8	0.1298	40.00	11426	5864	285.65	146.60	33.92%	31.48%



Standard ID
Thorium-230
Th-230_00016 #51465
Cert # 92523 Ref. date 11/29/2012
Activity 2374.5 dpm/mL

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - A

Addr: 4

Sample ID ICABT-6322;B5

Repeat 39

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 1/23/2013 2:45:11 PM

Count Ended 1/23/2013 2:50:20 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 *days*

Decay Factor 1.000

Sample Count Time 5.00 *mins*

Background Count Time 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.049	0	0.000	-0.049
sd	0.000			0.007	0.000	0.000	0.140
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.380	82,135	16,427.000	16,426.620
sd	0.000			0.019	286.592	57.318	57.318

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - A

Addr: 4

Sample ID ICABT-6322;B4

Repeat 41

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 1/23/2013 2:53:19 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 1/23/2013 2:58:29 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.049	0	0.000	-0.049
sd	0.000			0.007	0.000	0.000	0.140
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.380	86,007	17,201.400	17,201.020
sd	0.000			0.019	293.270	58.654	58.654

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - A

Addr: 4

Sample ID ICABT-6322;B3 **Repeat** 42

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 1/23/2013 3:00:53 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 1/23/2013 3:06:03 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.049	3	0.600	0.551
sd	0.000			0.007	1.732	0.346	0.346
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.380	90,869	18,173.800	18,173.420
sd	0.000			0.019	301.445	60.289	60.289

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - A

Addr: 4

Sample ID ICABT-6322;B2 **Repeat** 43

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 1/23/2013 3:09:08 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 1/23/2013 3:14:17 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.049	1	0.200	0.151
sd	0.000			0.007	1.000	0.200	0.200
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.380	89,877	17,975.400	17,975.020
sd	0.000			0.019	299.795	59.959	59.959

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - A

Addr: 4

Sample ID ICABT-6322;B1 **Repeat** 44

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/23/2013 3:18:54 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 1/23/2013 3:24:03 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.049	3	0.600	0.551
sd	0.000			0.007	1.732	0.346	0.346
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.380	93,592	18,718.400	18,718.020
sd	0.000			0.019	305.928	61.186	61.186

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - A

Addr: 4

Sample ID ICABT-6322;B8 **Repeat** 44

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/23/2013 3:27:10 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 1/23/2013 3:32:17 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.049	1	0.200	0.151
sd	0.000			0.007	1.000	0.200	0.200
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.380	78,270	15,654.000	15,653.620
sd	0.000			0.019	279.768	55.954	55.954

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - A

Addr: 4

Sample ID ICABT-6322;B7

Repeat 45

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 1/23/2013 3:37:27 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 1/23/2013 3:42:36 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.049	1	0.200	0.151
sd	0.000			0.007	1.000	0.200	0.200
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.380	81,527	16,305.400	16,305.020
sd	0.000			0.019	285.529	57.106	57.106

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - A

Addr: 4

Sample ID ICABT-6322;B6 **Repeat** 46

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/23/2013 3:46:21 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 1/23/2013 3:51:30 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.049	1	0.200	0.151
sd	0.000			0.007	1.000	0.200	0.200
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.380	81,161	16,232.200	16,231.820
sd	0.000			0.019	284.888	56.978	56.978

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - A

Addr: 4

Sample ID ICABT-51465;A5

Repeat 9

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 7/18/2013 3:43:52 PM

Count Ended 7/18/2013 4:23:58 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 *days*

Decay Factor 1.000

Sample Count Time 40.00 *mins*

Background Count Time 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	17,085	427.125	427.057
sd	0.000			0.008	130.710	3.268	3.268
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.386	7,826	195.650	195.264
sd	0.000			0.020	88.465	2.212	2.212

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - A

Addr: 4

Sample ID ICABT-51465;A3 **Repeat** 11

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 7/18/2013 5:29:23 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 7/18/2013 6:09:28 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 40.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	10,088	252.200	252.132
sd	0.000			0.008	100.439	2.511	2.511
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.386	4,470	111.750	111.364
sd	0.000			0.020	66.858	1.671	1.672

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - A

Addr: 4

Sample ID ICABT-51465;A2 **Repeat** 12

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/18/2013 6:30:54 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 7/18/2013 7:10:59 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 40.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	12,813	320.325	320.257
sd	0.000			0.008	113.195	2.830	2.830
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.386	5,488	137.200	136.814
sd	0.000			0.020	74.081	1.852	1.852

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - A

Addr: 4

Sample ID ICABT-51465;A1 **Repeat** 13

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 7/18/2013 7:58:42 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 7/18/2013 8:38:46 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 40.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	13,668	341.700	341.632
sd	0.000			0.008	116.910	2.923	2.923
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.386	5,598	139.950	139.564
sd	0.000			0.020	74.820	1.870	1.871

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - A

Addr: 4

Sample ID ICABT-51465;A8 **Repeat** 14

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 7/18/2013 9:01:01 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 7/18/2013 9:41:05 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 40.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	11,426	285.650	285.582
sd	0.000			0.008	106.892	2.672	2.672
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.386	5,864	146.600	146.214
sd	0.000			0.020	76.577	1.914	1.915

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - A

Addr: 4

Sample ID ICABT-51465;A7 **Repeat** 15

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 7/18/2013 9:52:28 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 7/18/2013 10:32:33 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 40.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	11,874	296.850	296.782
sd	0.000			0.008	108.968	2.724	2.724
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.386	6,117	152.925	152.539
sd	0.000			0.020	78.211	1.955	1.955

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - A

Addr: 4

Sample ID ICABT-51465;A6

Repeat 16

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/18/2013 10:47:01 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 7/18/2013 11:27:07 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 40.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	15,616	390.400	390.332
sd	0.000			0.008	124.964	3.124	3.124
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.386	7,519	187.975	187.589
sd	0.000			0.020	86.712	2.168	2.168

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - A

Addr: 4

Sample ID ICABT-51465;A4 **Repeat** 18

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 7/23/2013 4:41:18 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 7/23/2013 5:31:23 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 50.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	13,318	266.360	266.292
sd	0.000			0.008	115.404	2.308	2.308
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.386	5,772	115.440	115.054
sd	0.000			0.020	75.974	1.519	1.520

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

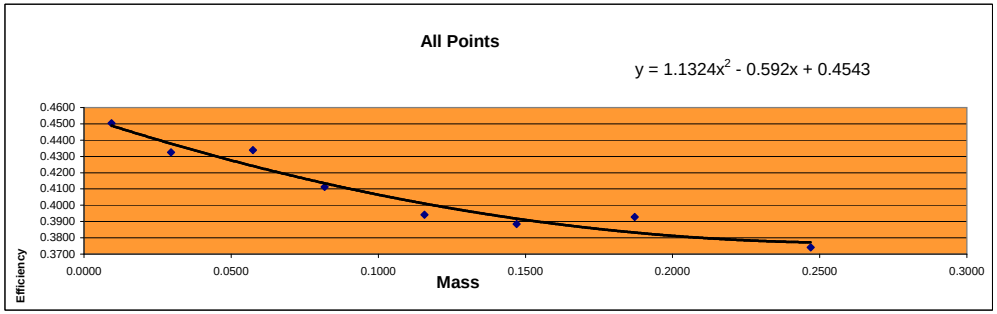
*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Curve is for Gross Beta
Strontium 90
and
Total Strontium

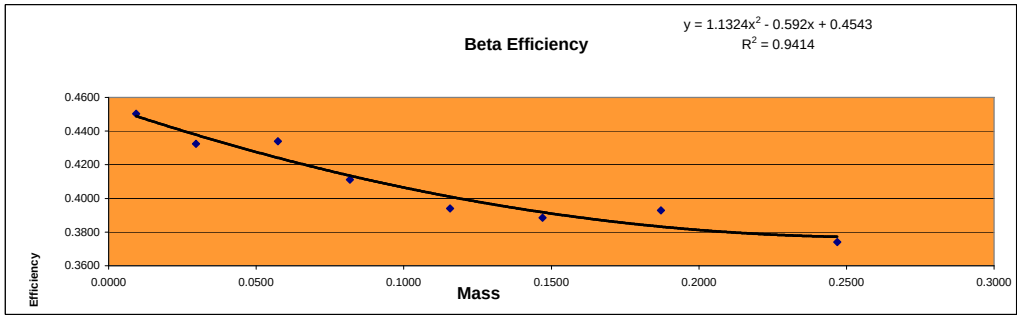
Orange 6

Detector ID	Std ID	Count Date	Sample Wt	Count Time	Beta Counts	DPM 41588.469 CPM	Sr-90 Eff	Standard Aliquot
6	B1	1/23/2013 15:37	0.0093	5	93641	18728.200	0.4503	1mL
6	B2	1/23/2013 15:26	0.0296	5	89937	17987.400	0.4325	1mL
6	B3	1/23/2013 15:19	0.0574	5	90226	18045.200	0.4339	1mL
6	B4	1/23/2013 15:09	0.0818	5	85509	17101.800	0.4112	1mL
6	B5	1/23/2013 15:01	0.1157	5	81949	16389.800	0.3941	1mL
6	B6	1/23/2013 14:53	0.1470	5	80794	16158.800	0.3885	1mL
6	B7	1/23/2013 14:45	0.1871	5	81699	16339.800	0.3929	1mL
6	B8	1/23/2013 15:46	0.2469	5	77798	15559.600	0.3741	1mL

Mass	Measured Efficiency	Theoretical Efficiency	Percent Δ Efficiency
0.0093	0.4503	0.4489	0.32%
0.0296	0.4325	0.4378	-1.20%
0.0574	0.4339	0.4241	2.32%
0.0818	0.4112	0.4135	-0.54%
0.1157	0.3941	0.4010	-1.71%
0.1470	0.3885	0.3917	-0.82%
0.1871	0.3929	0.3832	2.54%
0.2469	0.3741	0.3772	-0.80%



Mass	Efficiency
0.0093	0.4503
0.0296	0.4325
0.0574	0.4339
0.0818	0.4112
0.1157	0.3941
0.1470	0.3885
0.1871	0.3929
0.2469	0.3741



Standard ID
Strontium 90
Sr-90_00004 #6322
Cert# 80573-334 Ref. date 9/172009

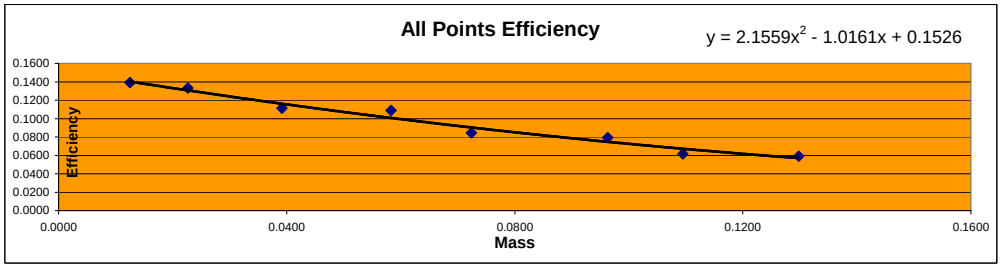
Initial Activity:	22560 dpm/mL
Reference Date:	9/17/2009
Count Date:	1/23/2013
Elapsed Time:	1224.000 days
Half Life:	10409.625 days
Exponential Term:	0.921730256
Corrected Activity:	20794.23458 dpm/mL
Decay Activity (Sr/Y-90)	41588.46916 dpm

Curve is for Gross Alpha

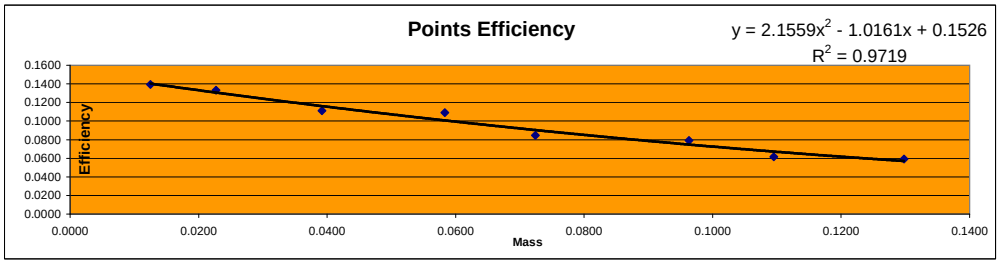
Orange 6

Detector ID	Sample ID	Count Date	Mass	Count Time	Alpha Counts	Net CPM	DPM	Th-230 Efficiency	Standard Aliquot
6	A1	7/18/2013 21:52	0.0125	40	13222	330.550	2374.5	0.1392	1mL
6	A2	7/18/2013 21:01	0.0227	40	12646	316.150	2374.5	0.1331	1mL
6	A3	7/23/2013 16:41	0.0392	50	13208	264.160	2374.5	0.1112	1mL
6	A4	7/23/2013 18:58	0.0583	50	12933	258.660	2374.5	0.1089	1mL
6	A5	7/18/2013 17:29	0.0724	40	16087	402.175	4749.0	0.0847	2mL
6	A6	7/18/2013 16:37	0.0963	40	15054	376.350	4749.0	0.0792	2mL
6	A7	7/18/2013 15:44	0.1095	40	11713	292.825	4749.0	0.0617	2mL
6	A8	7/18/2013 22:47	0.1298	40	11212	280.300	4749.0	0.0590	2mL

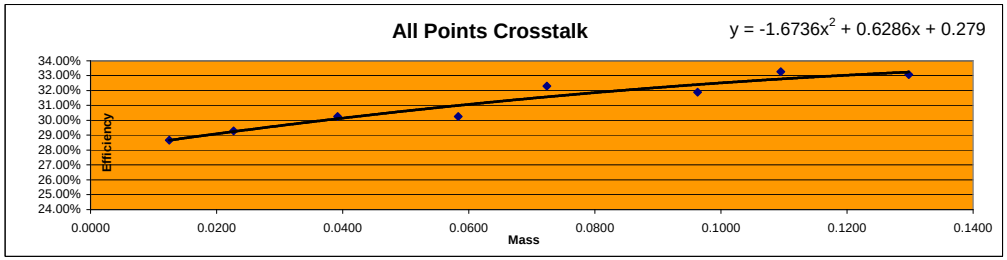
Mass	Measured Efficiency	Theoretical Efficiency	Percent Δ Efficiency
0.0125	0.1392	0.1402	-0.73%
0.0227	0.1331	0.1306	1.91%
0.0392	0.1112	0.1161	-4.16%
0.0583	0.1089	0.1007	8.19%
0.0724	0.0847	0.0903	-6.25%
0.0963	0.0792	0.0747	6.03%
0.1095	0.0617	0.0672	-8.23%
0.1298	0.0590	0.0570	3.49%



Mass	Efficiency
0.0125	0.1392
0.0227	0.1331
0.0392	0.1112
0.0583	0.1089
0.0724	0.0847
0.0963	0.0792
0.1095	0.0617
0.1298	0.0590



Detector ID	Sample ID	Mass	Count Time	Alpha Counts	Beta Counts	Alpha CPM	Beta CPM	% α into β	
6	A1	0.0125	40.00	13222	5313	330.55	132.83	28.66%	Min
6	A2	0.0227	40.00	12646	5241	316.15	131.03	29.30%	28.66%
6	A3	0.0392	40.00	13208	5728	330.20	143.20	30.25%	
6	A4	0.0583	40.00	12933	5609	323.33	140.23	30.25%	Max
6	A5	0.0724	40.00	16087	7677	402.18	191.93	32.31%	33.28%
6	A6	0.0963	40.00	15054	7051	376.35	176.28	31.90%	
6	A7	0.1095	40.00	11713	5842	292.83	146.05	33.28%	Mean
6	A8	0.1298	40.00	11212	5542	280.30	138.55	33.08%	31.13%



Standard ID
Thorium-230
Th-230_00016 #51465
Cert # 92523 Ref. date 11/29/2012
Activity 2374.5 dpm/mL

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - C

Addr: 6

Sample ID ICABT-6322;B7

Repeat 39

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 1/23/2013 2:45:20 PM

Count Ended 1/23/2013 2:50:29 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 *days*

Decay Factor 1.000

Sample Count Time 5.00 *mins*

Background Count Time 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.073	0	0.000	-0.073
sd	0.000			0.009	0.000	0.000	0.171
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.346	81,699	16,339.800	16,339.454
sd	0.000			0.019	285.830	57.166	57.166

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - C

Addr: 6

Sample ID ICABT-6322;B6

Repeat 40

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 1/23/2013 2:53:29 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 1/23/2013 2:58:38 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.073	1	0.200	0.127
sd	0.000			0.009	1.000	0.200	0.200
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.346	80,794	16,158.800	16,158.454
sd	0.000			0.019	284.243	56.849	56.849

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - C

Addr: 6

Sample ID ICABT-6322;B5

Repeat 41

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 1/23/2013 3:01:02 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 1/23/2013 3:06:12 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.073	2	0.400	0.327
sd	0.000			0.009	1.414	0.283	0.283
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.346	81,949	16,389.800	16,389.454
sd	0.000			0.019	286.267	57.253	57.253

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - C

Addr: 6

Sample ID ICABT-6322;B4

Repeat 43

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 1/23/2013 3:09:16 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 1/23/2013 3:14:26 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.073	4	0.800	0.727
sd	0.000			0.009	2.000	0.400	0.400
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.346	85,509	17,101.800	17,101.454
sd	0.000			0.019	292.419	58.484	58.484

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - C

Addr: 6

Sample ID ICABT-6322;B3

Repeat 44

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 1/23/2013 3:19:05 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 1/23/2013 3:24:15 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.073	2	0.400	0.327
sd	0.000			0.009	1.414	0.283	0.283
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.346	90,226	18,045.200	18,044.854
sd	0.000			0.019	300.376	60.075	60.075

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - C

Addr: 6

Sample ID ICABT-6322;B2

Repeat 45

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 1/23/2013 3:26:42 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 1/23/2013 3:31:52 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.073	1	0.200	0.127
sd	0.000			0.009	1.000	0.200	0.200
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.346	89,937	17,987.400	17,987.054
sd	0.000			0.019	299.895	59.979	59.979

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - C

Addr: 6

Sample ID ICABT-6322;B1

Repeat 46

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/23/2013 3:37:38 PM

Count Ended 1/23/2013 3:42:48 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 5.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.073	0	0.000	-0.073
sd	0.000			0.009	0.000	0.000	0.171
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.346	93,641	18,728.200	18,727.854
sd	0.000			0.019	306.008	61.202	61.202

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - C

Addr: 6

Sample ID ICABT-6322;B8 **Repeat** 46

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 1/23/2013 3:46:31 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 1/23/2013 3:51:39 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.073	1	0.200	0.127
sd	0.000			0.009	1.000	0.200	0.200
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.346	77,798	15,559.600	15,559.254
sd	0.000			0.019	278.923	55.785	55.785

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - C

Addr: 6

Sample ID ICABT-51465;A7

Repeat 9

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 7/18/2013 3:44:02 PM

Count Ended 7/18/2013 4:24:07 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 *days*

Decay Factor 1.000

Sample Count Time 40.00 *mins*

Background Count Time 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.081	11,713	292.825	292.744
sd	0.000			0.009	108.227	2.706	2.706
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.461	5,842	146.050	145.589
sd	0.000			0.021	76.433	1.911	1.911

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - C

Addr: 6

Sample ID ICABT-51465;A6

Repeat 10

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 7/18/2013 4:37:49 PM

Count Ended 7/18/2013 5:17:54 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 *days*

Decay Factor 1.000

Sample Count Time 40.00 *mins*

Background Count Time 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.081	15,054	376.350	376.269
sd	0.000			0.009	122.695	3.067	3.067
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.461	7,051	176.275	175.814
sd	0.000			0.021	83.970	2.099	2.099

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - C

Addr: 6

Sample ID ICABT-51465;A5 **Repeat** 11

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 7/18/2013 5:29:34 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 7/18/2013 6:09:40 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 40.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.081	16,087	402.175	402.094
sd	0.000			0.009	126.835	3.171	3.171
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.461	7,677	191.925	191.464
sd	0.000			0.021	87.618	2.190	2.191

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - C

Addr: 6

Sample ID ICABT-51465;A2

Repeat 14

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 7/18/2013 9:01:09 PM

Count Ended 7/18/2013 9:41:14 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 *days*

Decay Factor 1.000

Sample Count Time 40.00 *mins*

Background Count Time 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.081	12,646	316.150	316.069
sd	0.000			0.009	112.454	2.811	2.811
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.461	5,241	131.025	130.564
sd	0.000			0.021	72.395	1.810	1.810

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - C

Addr: 6

Sample ID ICABT-51465;A1

Repeat 15

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/18/2013 9:52:37 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 7/18/2013 10:32:42 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 40.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.081	13,222	330.550	330.469
sd	0.000			0.009	114.987	2.875	2.875
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.461	5,313	132.825	132.364
sd	0.000			0.021	72.890	1.822	1.822

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - C

Addr: 6

Sample ID ICABT-51465;A8

Repeat 16

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/18/2013 10:47:10 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 7/18/2013 11:27:14 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 40.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.081	11,212	280.300	280.219
sd	0.000			0.009	105.887	2.647	2.647
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.461	5,542	138.550	138.089
sd	0.000			0.021	74.445	1.861	1.861

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - C

Addr: 6

Sample ID ICABT-51465;A3 **Repeat** 18

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 7/23/2013 4:41:28 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 7/23/2013 5:31:33 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 50.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.081	13,208	264.160	264.079
sd	0.000			0.009	114.926	2.299	2.299
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.461	5,728	114.560	114.099
sd	0.000			0.021	75.684	1.514	1.514

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - C

Addr: 6

Sample ID ICABT-51465;A4

Repeat 20

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 7/23/2013 6:58:19 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 7/23/2013 7:48:24 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 50.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.081	12,933	258.660	258.579
sd	0.000			0.009	113.723	2.274	2.274
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.461	5,609	112.180	111.719
sd	0.000			0.021	74.893	1.498	1.498

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

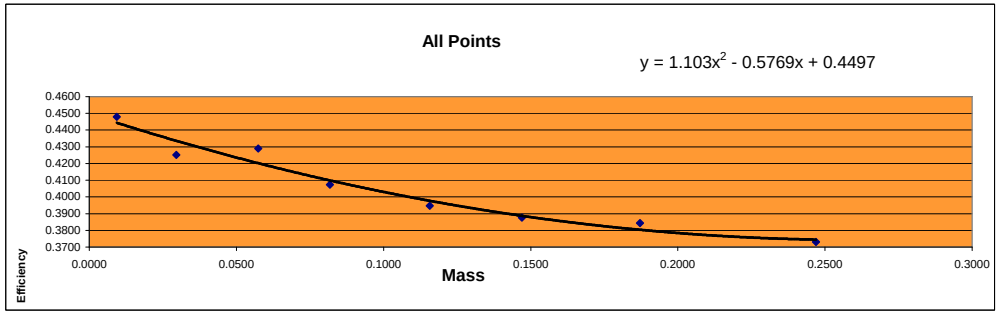
*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Curve is for Gross Beta
Strontium 90
and
Total Strontium

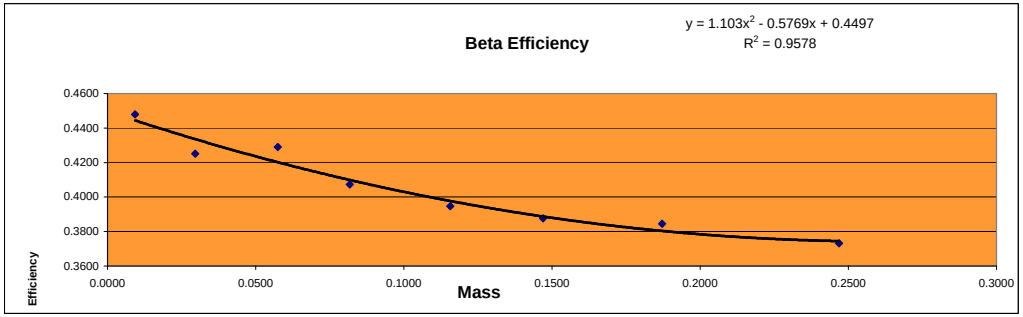
Orange 11

Detector ID	Std ID	Count Date	Sample Wt	Count Time	Beta Counts	DPM 41588.469 CPM	Sr-90 Eff	Standard Aliquot
11	B1	1/23/2013 16:58	0.0093	5	93137	18627.400	0.4479	1mL
11	B2	1/23/2013 16:46	0.0296	5	88398	17679.600	0.4251	1mL
11	B3	1/23/2013 14:36	0.0574	5	89220	17844.000	0.4291	1mL
11	B4	1/23/2013 14:27	0.0818	5	84701	16940.200	0.4073	1mL
11	B5	1/23/2013 17:27	0.1157	5	82088	16417.600	0.3948	1mL
11	B6	1/23/2013 17:19	0.1470	5	80590	16118.000	0.3876	1mL
11	B7	1/23/2013 17:12	0.1871	5	79937	15987.400	0.3844	1mL
11	B8	1/23/2013 17:05	0.2469	5	77581	15516.200	0.3731	1mL

Mass	Measured Efficiency	Theoretical Efficiency	Percent Δ Efficiency
0.0093	0.4479	0.4444	0.78%
0.0296	0.4251	0.4336	-1.96%
0.0574	0.4291	0.4202	2.10%
0.0818	0.4073	0.4099	-0.62%
0.1157	0.3948	0.3977	-0.74%
0.1470	0.3876	0.3887	-0.30%
0.1871	0.3844	0.3804	1.06%
0.2469	0.3731	0.3745	-0.38%



Mass	Efficiency
0.0093	0.4479
0.0296	0.4251
0.0574	0.4291
0.0818	0.4073
0.1157	0.3948
0.1470	0.3876
0.1871	0.3844
0.2469	0.3731



Standard ID
Strontium 90
Sr-90_00004 #6322
Cert# 80573-334 Ref. date 9/172009

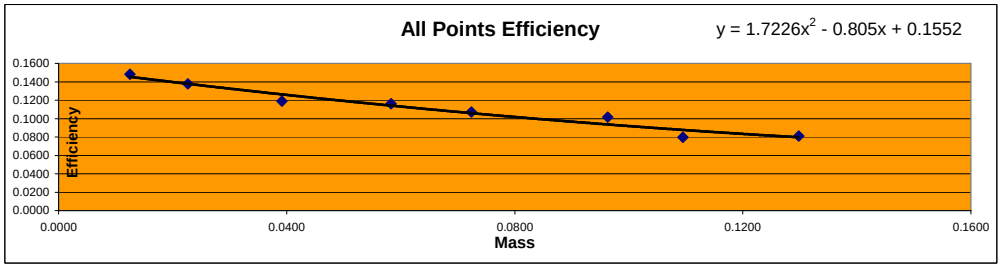
Initial Activity:	22560 dpm/mL
Reference Date:	9/17/2009
Count Date:	1/23/2013
Elapsed Time:	1224.000 days
Half Life:	10409.625 days
Exponential Term:	0.921730256
Corrected Activity:	20794.23458 dpm/mL
Decay Activity (Sr/Y-90)	41588.46916 dpm

Curve is for Gross Alpha

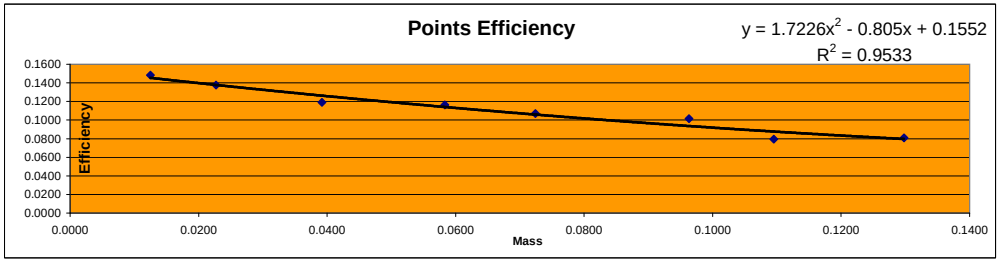
Orange 11

Detector ID	Sample ID	Count Date	Mass	Count Time	Alpha Counts	Net CPM	DPM	Th-230 Efficiency	Standard Aliquot
11	A1	7/24/2013 11:45	0.0125	50	17594	351.880	2374.5	0.1482	1mL
11	A2	7/24/2013 10:45	0.0227	50	16358	327.160	2374.5	0.1378	1mL
11	A3	7/24/2013 9:53	0.0392	50	14139	282.780	2374.5	0.1191	1mL
11	A4	7/24/2013 8:47	0.0583	50	13803	276.060	2374.5	0.1163	1mL
11	A5	7/24/2013 18:32	0.0724	50	25403	508.060	4749.0	0.1070	2mL
11	A6	7/24/2013 17:29	0.0963	50	24130	482.600	4749.0	0.1016	2mL
11	A7	7/24/2013 16:37	0.1095	50	18906	378.120	4749.0	0.0796	2mL
11	A8	7/24/2013 15:14	0.1298	50	19207	384.140	4749.0	0.0809	2mL

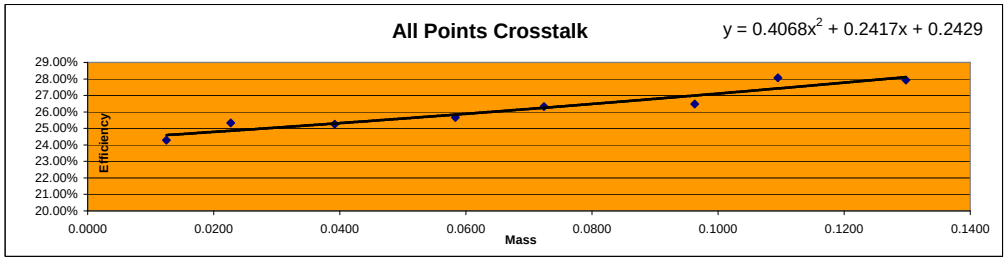
Mass	Measured Efficiency	Theoretical Efficiency	Percent Δ Efficiency
0.0125	0.1482	0.1454	1.92%
0.0227	0.1378	0.1378	-0.02%
0.0392	0.1191	0.1263	-5.70%
0.0583	0.1163	0.1141	1.87%
0.0724	0.1070	0.1059	0.98%
0.0963	0.1016	0.0937	8.51%
0.1095	0.0796	0.0877	-9.22%
0.1298	0.0809	0.0797	1.45%



Mass	Efficiency
0.0125	0.1482
0.0227	0.1378
0.0392	0.1191
0.0583	0.1163
0.0724	0.1070
0.0963	0.1016
0.1095	0.0796
0.1298	0.0809



Detector ID	Sample ID	Mass	Count Time	Alpha Counts	Beta Counts	Alpha CPM	Beta CPM	% α into β	
11	A1	0.0125	40.00	17594	5644	439.85	141.10	24.29%	Min
11	A2	0.0227	40.00	16358	5551	408.95	138.78	25.34%	24.29%
11	A3	0.0392	40.00	14139	4778	353.48	119.45	25.26%	
11	A4	0.0583	40.00	13803	4767	345.08	119.18	25.67%	Max
11	A5	0.0724	40.00	25403	9080	635.08	227.00	26.33%	28.08%
11	A6	0.0963	40.00	24130	8690	603.25	217.25	26.48%	
11	A7	0.1095	40.00	18906	7381	472.65	184.53	28.08%	Mean
11	A8	0.1298	40.00	19207	7443	480.18	186.08	27.93%	26.17%



Standard ID
Thorium-230
Th-230_00016 #51465
Cert # 92523 Ref. date 11/29/2012
Activity 2374.5 dpm/mL

Alpha/Beta Count Results

Sample Activity Report

Orange 8-11 - D

Addr: 11

Sample ID ICABT-6322;B4 **Repeat** 38

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 1/23/2013 2:27:52 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 1/23/2013 2:33:01 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.044	17	3.400	3.356
sd	0.000			0.007	4.123	0.825	0.825
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.487	84,701	16,940.200	16,939.713
sd	0.000			0.022	291.034	58.207	58.207

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 8-11 - D

Addr: 11

Sample ID ICABT-6322;B3

Repeat 39

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 1/23/2013 2:36:49 PM

Count Ended 1/23/2013 2:41:58 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 *days*

Decay Factor 1.000

Sample Count Time 5.00 *mins*

Background Count Time 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.044	22	4.400	4.356
sd	0.000			0.007	4.690	0.938	0.938
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.487	89,220	17,844.000	17,843.513
sd	0.000			0.022	298.697	59.739	59.739

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 8-11 - D

Addr: 11

Sample ID ICABT-6322;B2

Repeat 48

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/23/2013 4:46:56 PM

Count Ended 1/23/2013 4:52:05 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 5.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.044	20	4.000	3.956
sd	0.000			0.007	4.472	0.894	0.894
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.487	88,398	17,679.600	17,679.113
sd	0.000			0.022	297.318	59.464	59.464

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 8-11 - D

Addr: 11

Sample ID ICABT-6322;B1

Repeat 49

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/23/2013 4:58:13 PM

Count Ended 1/23/2013 5:03:23 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 5.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.044	19	3.800	3.756
sd	0.000			0.007	4.359	0.872	0.872
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.487	93,137	18,627.400	18,626.913
sd	0.000			0.022	305.184	61.037	61.037

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 8-11 - D

Addr: 11

Sample ID ICABT-6322;B8

Repeat 49

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/23/2013 5:05:57 PM

Count Ended 1/23/2013 5:11:06 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 5.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.044	16	3.200	3.156
sd	0.000			0.007	4.000	0.800	0.800
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.487	77,581	15,516.200	15,515.713
sd	0.000			0.022	278.534	55.707	55.707

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 8-11 - D

Addr: 11

Sample ID ICABT-6322;B7

Repeat 50

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/23/2013 5:12:45 PM

Count Ended 1/23/2013 5:17:55 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 5.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.044	19	3.800	3.756
sd	0.000			0.007	4.359	0.872	0.872
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.487	79,937	15,987.400	15,986.913
sd	0.000			0.022	282.731	56.546	56.546

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 8-11 - D

Addr: 11

Sample ID ICABT-6322;B6

Repeat 51

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 1/23/2013 5:19:28 PM

Count Ended 1/23/2013 5:24:37 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 *days*

Decay Factor 1.000

Sample Count Time 5.00 *mins*

Background Count Time 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.044	17	3.400	3.356
sd	0.000			0.007	4.123	0.825	0.825
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.487	80,590	16,118.000	16,117.513
sd	0.000			0.022	283.884	56.777	56.777

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 8-11 - D

Addr: 11

Sample ID ICABT-6322;B5

Repeat 52

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 1/23/2013 5:27:59 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 1/23/2013 5:33:09 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.044	21	4.200	4.156
sd	0.000			0.007	4.583	0.917	0.917
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.487	82,088	16,417.600	16,417.113
sd	0.000			0.022	286.510	57.302	57.302

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 8-11 - D

Addr: 11

Sample ID ICABT-51465;A4

Repeat 21

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/24/2013 8:47:08 AM

Count Ended 7/24/2013 9:37:14 AM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 50.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	13,803	276.060	275.992
sd	0.000			0.008	117.486	2.350	2.350
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.497	4,767	95.340	94.843
sd	0.000			0.022	69.043	1.381	1.381

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 8-11 - D

Addr: 11

Sample ID ICABT-51465;A3

Repeat 21

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 7/24/2013 9:53:29 AM

Count Ended 7/24/2013 10:43:35 AM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 *days*

Decay Factor 1.000

Sample Count Time 50.00 *mins*

Background Count Time 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	14,139	282.780	282.712
sd	0.000			0.008	118.908	2.378	2.378
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.497	4,778	95.560	95.063
sd	0.000			0.022	69.123	1.382	1.383

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 8-11 - D

Addr: 11

Sample ID ICABT-51465;A2

Repeat 19

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/24/2013 10:45:35 AM

Collection Date 1 1/1/1900

Half Life 0.00 ***days***

Count Ended 7/24/2013 11:35:40 AM

Collection Date 2 1/1/1900

Decay Factor 1.000

Sample Count Time 50.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	16,358	327.160	327.092
sd	0.000			0.008	127.898	2.558	2.558
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.497	5,551	111.020	110.523
sd	0.000			0.022	74.505	1.490	1.490

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 8-11 - D

Addr: 11

Sample ID ICABT-51465;A1

Repeat 20

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 7/24/2013 11:45:33 AM

Count Ended 7/24/2013 12:35:38 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 *days*

Decay Factor 1.000

Sample Count Time 50.00 *mins*

Background Count Time 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	17,594	351.880	351.812
sd	0.000			0.008	132.642	2.653	2.653
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.497	5,644	112.880	112.383
sd	0.000			0.022	75.127	1.503	1.503

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 8-11 - D

Addr: 11

Sample ID ICABT-51465;A8

Repeat 21

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/24/2013 3:14:28 PM

Count Ended 7/24/2013 4:04:34 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 50.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	19,207	384.140	384.072
sd	0.000			0.008	138.589	2.772	2.772
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.497	7,443	148.860	148.363
sd	0.000			0.022	86.273	1.725	1.726

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 8-11 - D

Addr: 11

Sample ID ICABT-51465;A7

Repeat 22

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/24/2013 4:37:10 PM

Count Ended 7/24/2013 5:27:15 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 50.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	18,906	378.120	378.052
sd	0.000			0.008	137.499	2.750	2.750
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.497	7,381	147.620	147.123
sd	0.000			0.022	85.913	1.718	1.718

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 8-11 - D

Addr: 11

Sample ID ICABT-51465;A6

Repeat 23

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 7/24/2013 5:29:52 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 7/24/2013 6:19:58 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 50.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	24,130	482.600	482.532
sd	0.000			0.008	155.338	3.107	3.107
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.497	8,690	173.800	173.303
sd	0.000			0.022	93.220	1.864	1.865

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 8-11 - D

Addr: 11

Sample ID ICABT-51465;A5 **Repeat** 24

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/24/2013 6:32:00 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 7/24/2013 7:22:06 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 50.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	25,403	508.060	507.992
sd	0.000			0.008	159.383	3.188	3.188
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.497	9,080	181.600	181.103
sd	0.000			0.022	95.289	1.906	1.906

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

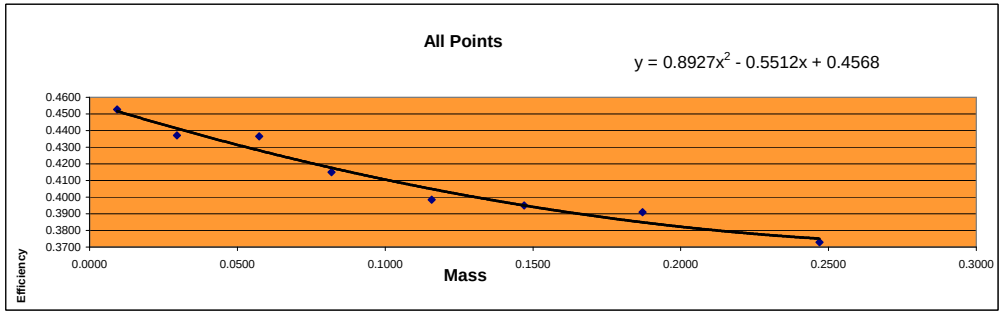
*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Curve is for Gross Beta
Strontium 90
and
Total Strontium

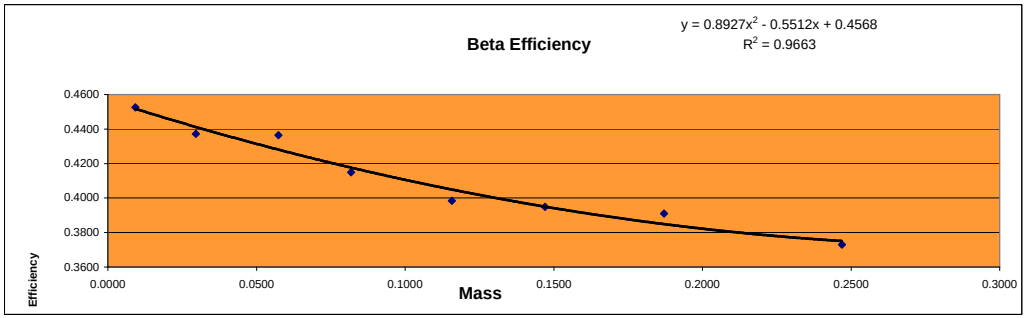
Orange 16

Detector ID	Std ID	Count Date	Sample Wt	Count Time	Beta Counts	DPM 41588.469 CPM	Sr-90 Eff	Standard Aliquot
16	B1	1/23/2013 12:20	0.0093	5	94119	18823.800	0.4526	1mL
16	B2	1/23/2013 13:14	0.0296	5	90912	18182.400	0.4372	1mL
16	B3	1/23/2013 13:07	0.0574	5	90759	18151.800	0.4365	1mL
16	B4	1/23/2013 13:00	0.0818	5	86294	17258.800	0.4150	1mL
16	B5	1/23/2013 12:53	0.1157	5	82841	16568.200	0.3984	1mL
16	B6	1/23/2013 12:46	0.1470	5	82129	16425.800	0.3950	1mL
16	B7	1/23/2013 12:38	0.1871	5	81307	16261.400	0.3910	1mL
16	B8	1/23/2013 12:29	0.2469	5	77547	15509.400	0.3729	1mL

Mass	Measured Efficiency	Theoretical Efficiency	Percent Δ Efficiency
0.0093	0.4526	0.4518	0.19%
0.0296	0.4372	0.4413	-0.92%
0.0574	0.4365	0.4281	1.95%
0.0818	0.4150	0.4177	-0.65%
0.1157	0.3984	0.4050	-1.63%
0.1470	0.3950	0.3951	-0.03%
0.1871	0.3910	0.3849	1.58%
0.2469	0.3729	0.3751	-0.59%



Mass	Efficiency
0.0093	0.4526
0.0296	0.4372
0.0574	0.4365
0.0818	0.4150
0.1157	0.3984
0.1470	0.3950
0.1871	0.3910
0.2469	0.3729



Standard ID
Strontium 90
Sr-90_00004 #6322
Cert# 80573-334 Ref. date 9/172009

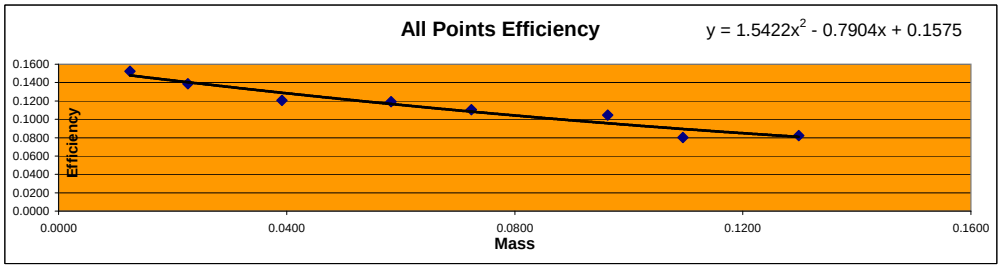
Initial Activity:	22560 dpm/mL
Reference Date:	9/17/2009
Count Date:	1/23/2013
Elapsed Time:	1224.000 days
Half Life:	10409.625 days
Exponential Term:	0.921730256
Corrected Activity:	20794.23458 dpm/mL
Decay Activity (Sr/Y-90)	41588.46916 dpm

Curve is for Gross Alpha

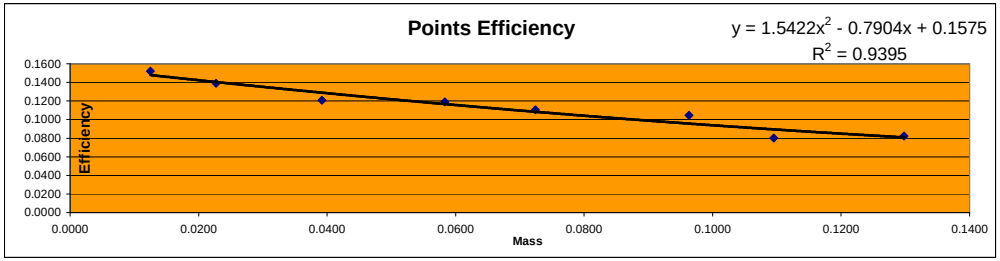
Orange 16

Detector ID	Sample ID	Count Date	Mass	Count Time	Alpha Counts	Net CPM	DPM	Th-230 Efficiency	Standard Aliquot
16	A1	7/24/2013 19:26	0.0125	50	18071	361.420	2374.5	0.1522	1mL
16	A2	7/25/2013 9:50	0.0227	50	16487	329.740	2374.5	0.1389	1mL
16	A3	7/25/2013 8:55	0.0392	50	14331	286.620	2374.5	0.1207	1mL
16	A4	7/25/2013 7:04	0.0583	50	14137	282.740	2374.5	0.1191	1mL
16	A5	7/24/2013 23:29	0.0724	50	26253	525.060	4749.0	0.1106	2mL
16	A6	7/24/2013 22:35	0.0963	50	24819	496.380	4749.0	0.1045	2mL
16	A7	7/24/2013 21:31	0.1095	50	19016	380.320	4749.0	0.0801	2mL
16	A8	7/24/2013 20:19	0.1298	50	19554	391.080	4749.0	0.0823	2mL

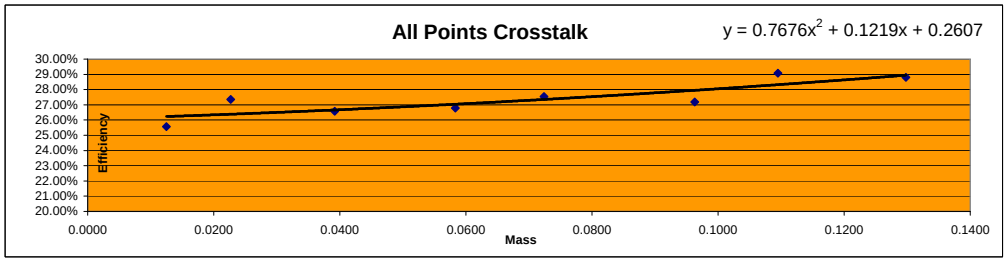
Mass	Measured Efficiency	Theoretical Efficiency	Percent Δ Efficiency
0.0125	0.1522	0.1479	2.94%
0.0227	0.1389	0.1404	-1.06%
0.0392	0.1207	0.1289	-6.35%
0.0583	0.1191	0.1167	2.07%
0.0724	0.1106	0.1084	2.03%
0.0963	0.1045	0.0957	9.24%
0.1095	0.0801	0.0894	-10.46%
0.1298	0.0823	0.0809	1.81%



Mass	Efficiency
0.0125	0.1522
0.0227	0.1389
0.0392	0.1207
0.0583	0.1191
0.0724	0.1106
0.0963	0.1045
0.1095	0.0801
0.1298	0.0823



Detector ID	Sample ID	Mass	Count Time	Alpha Counts	Beta Counts	Alpha CPM	Beta CPM	% α into β	
16	A1	0.0125	40.00	18071	6205	451.78	155.13	25.56%	Min
16	A2	0.0227	40.00	16487	6209	412.18	155.23	27.36%	25.56%
16	A3	0.0392	40.00	14331	5188	358.28	129.70	26.58%	
16	A4	0.0583	40.00	14137	5171	353.43	129.28	26.78%	Max
16	A5	0.0724	40.00	26253	9975	656.33	249.38	27.53%	29.08%
16	A6	0.0963	40.00	24819	9268	620.48	231.70	27.19%	
16	A7	0.1095	40.00	19016	7798	475.40	194.95	29.08%	Mean
16	A8	0.1298	40.00	19554	7910	488.85	197.75	28.80%	27.36%



Standard ID
Thorium-230
Th-230_00016 #51465
Cert # 92523 Ref. date 11/29/2012
Activity 2374.5 dpm/mL

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - A

Addr: 16

Sample ID ICABT-6322;B1

Repeat 30

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/23/2013 12:20:05 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 1/23/2013 12:25:26 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.073	89	17.800	17.727
sd	0.000			0.009	9.434	1.887	1.887
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.368	94,119	18,823.800	18,823.432
sd	0.000			0.019	306.788	61.358	61.358

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - A

Addr: 16

Sample ID ICABT-6322;B8

Repeat 30

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 1/23/2013 12:29:43 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 1/23/2013 12:34:52 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.073	57	11.400	11.327
sd	0.000			0.009	7.550	1.510	1.510
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.368	77,547	15,509.400	15,509.032
sd	0.000			0.019	278.473	55.695	55.695

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - A

Addr: 16

Sample ID ICABT-6322;B7

Repeat 31

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/23/2013 12:38:07 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 1/23/2013 12:43:17 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.073	52	10.400	10.327
sd	0.000			0.009	7.211	1.442	1.442
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.368	81,307	16,261.400	16,261.032
sd	0.000			0.019	285.144	57.029	57.029

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - A

Addr: 16

Sample ID ICABT-6322;B6

Repeat 32

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/23/2013 12:46:05 PM

Count Ended 1/23/2013 12:51:14 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 5.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.073	57	11.400	11.327
sd	0.000			0.009	7.550	1.510	1.510
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.368	82,129	16,425.800	16,425.432
sd	0.000			0.019	286.582	57.316	57.316

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - A

Addr: 16

Sample ID ICABT-6322;B5

Repeat 33

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/23/2013 12:53:35 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 1/23/2013 12:58:45 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.073	67	13.400	13.327
sd	0.000			0.009	8.185	1.637	1.637
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.368	82,841	16,568.200	16,567.832
sd	0.000			0.019	287.821	57.564	57.564

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - A

Addr: 16

Sample ID ICABT-6322;B4 **Repeat** 35

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/23/2013 1:00:25 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 1/23/2013 1:05:34 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.073	78	15.600	15.527
sd	0.000			0.009	8.832	1.766	1.766
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.368	86,294	17,258.800	17,258.432
sd	0.000			0.019	293.758	58.752	58.752

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - A

Addr: 16

Sample ID ICABT-6322;B3

Repeat 36

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/23/2013 1:07:38 PM

Count Ended 1/23/2013 1:12:49 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 5.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.073	44	8.800	8.727
sd	0.000			0.009	6.633	1.327	1.327
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.368	90,759	18,151.800	18,151.432
sd	0.000			0.019	301.262	60.252	60.252

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - A

Addr: 16

Sample ID ICABT-6322;B2 **Repeat** 37

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/23/2013 1:14:50 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 1/23/2013 1:20:01 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.073	82	16.400	16.327
sd	0.000			0.009	9.055	1.811	1.811
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.368	90,912	18,182.400	18,182.032
sd	0.000			0.019	301.516	60.303	60.303

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - A

Addr: 16

Sample ID ICABT-51465;A1

Repeat 25

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/24/2013 7:26:47 PM

Count Ended 7/24/2013 8:16:53 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 50.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.082	18,071	361.420	361.338
sd	0.000			0.009	134.428	2.689	2.689
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	1.397	6,205	124.100	122.703
sd	0.000			0.037	78.772	1.575	1.576

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - A

Addr: 16

Sample ID ICABT-51465;A8

Repeat 26

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/24/2013 8:19:44 PM

Count Ended 7/24/2013 9:09:51 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 50.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.082	19,554	391.080	390.998
sd	0.000			0.009	139.836	2.797	2.797
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	1.397	7,910	158.200	156.803
sd	0.000			0.037	88.938	1.779	1.779

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - A

Addr: 16

Sample ID ICABT-51465;A7

Repeat 27

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/24/2013 9:31:37 PM

Count Ended 7/24/2013 10:21:44 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 50.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.082	19,016	380.320	380.238
sd	0.000			0.009	137.899	2.758	2.758
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	1.397	7,798	155.960	154.563
sd	0.000			0.037	88.306	1.766	1.767

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - A

Addr: 16

Sample ID ICABT-51465;A6

Repeat 28

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/24/2013 10:35:04 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 7/24/2013 11:25:12 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 50.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.082	24,819	496.380	496.298
sd	0.000			0.009	157.540	3.151	3.151
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	1.397	9,268	185.360	183.963
sd	0.000			0.037	96.270	1.925	1.926

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - A

Addr: 16

Sample ID ICABT-51465;A5

Repeat 29

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/24/2013 11:29:32 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 7/25/2013 12:19:40 AM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 50.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.082	26,253	525.060	524.978
sd	0.000			0.009	162.028	3.241	3.241
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	1.397	9,975	199.500	198.103
sd	0.000			0.037	99.875	1.997	1.998

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - A

Addr: 16

Sample ID ICABT-51465;A4

Repeat 35

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/25/2013 7:04:53 AM

Count Ended 7/25/2013 7:54:58 AM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 50.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.082	14,137	282.740	282.658
sd	0.000			0.009	118.899	2.378	2.378
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	1.397	5,171	103.420	102.023
sd	0.000			0.037	71.910	1.438	1.439

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - A

Addr: 16

Sample ID ICABT-51465;A3

Repeat 34

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/25/2013 8:55:20 AM

Count Ended 7/25/2013 9:45:26 AM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 50.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.082	14,331	286.620	286.538
sd	0.000			0.009	119.712	2.394	2.394
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	1.397	5,188	103.760	102.363
sd	0.000			0.037	72.028	1.441	1.441

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - A

Addr: 16

Sample ID ICABT-51465;A2

Repeat 32

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/25/2013 9:50:27 AM

Collection Date 1 1/1/1900

Half Life 0.00 ***days***

Count Ended 7/25/2013 10:40:33 AM

Collection Date 2 1/1/1900

Decay Factor 1.000

Sample Count Time 50.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.082	16,487	329.740	329.658
sd	0.000			0.009	128.402	2.568	2.568
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	1.397	6,209	124.180	122.783
sd	0.000			0.037	78.797	1.576	1.576

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

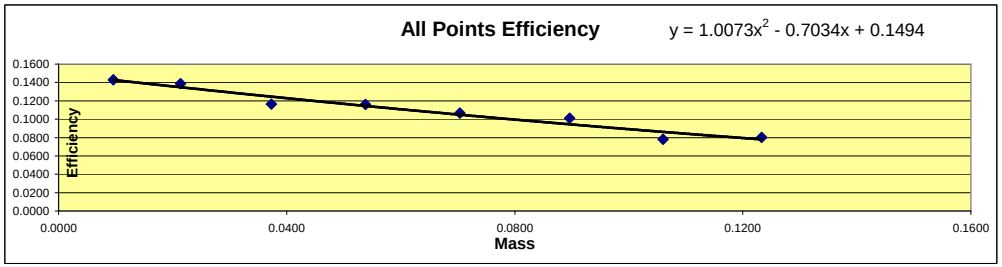
Error = .00 **x sd**

Curve is for Gross Alpha

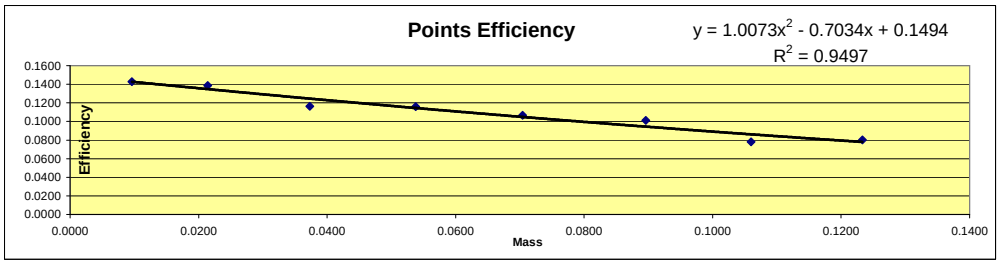
Protean 15

Detector ID	Sample ID	Count Date	Mass	Count Time	Alpha Counts	Net CPM	DPM	Th-230 Efficiency	Standard Aliquot
15	A1	8/9/2013 15:42	0.0096	50	16971	339.420	2374.5	0.1429	1mL
15	A2	8/9/2013 17:27	0.0214	50	16459	329.180	2374.5	0.1386	1mL
15	A3	8/9/2013 18:33	0.0373	50	13826	276.520	2374.5	0.1165	1mL
15	A4	8/12/2013 18:44	0.0538	50	13778	275.560	2374.5	0.1160	1mL
15	A5	8/12/2013 11:36	0.0704	50	25324	506.480	4749.0	0.1066	2mL
15	A6	8/12/2013 0:00	0.0896	50	23987	479.740	4749.0	0.1010	2mL
15	A7	8/11/2013 23:08	0.1060	50	18532	370.640	4749.0	0.0780	2mL
15	A8	8/11/2013 21:12	0.1233	50	19058	381.160	4749.0	0.0803	2mL

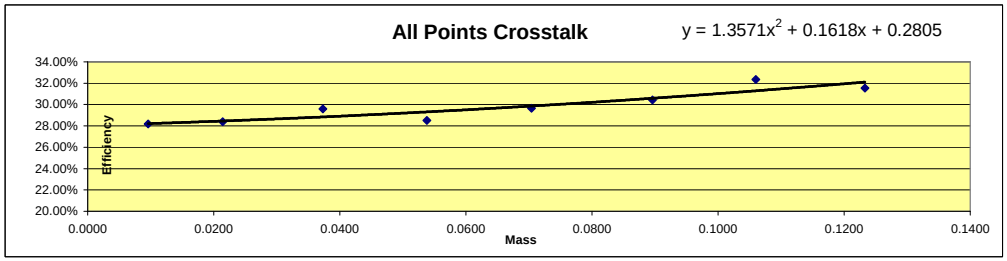
Mass	Measured Efficiency	Theoretical Efficiency	Percent Δ Efficiency
0.0096	0.1429	0.1427	0.14%
0.0214	0.1386	0.1348	2.84%
0.0373	0.1165	0.1246	-6.51%
0.0538	0.1160	0.1145	1.38%
0.0704	0.1066	0.1049	1.69%
0.0896	0.1010	0.0945	6.94%
0.1060	0.0780	0.0862	-9.41%
0.1233	0.0803	0.0780	2.92%



Mass	Efficiency
0.0096	0.1429
0.0214	0.1386
0.0373	0.1165
0.0538	0.1160
0.0704	0.1066
0.0896	0.1010
0.1060	0.0780
0.1233	0.0803



Detector ID	Sample ID	Mass	Count Time	Alpha Counts	Beta Counts	Alpha CPM	Beta CPM	% α into β	
15	A1	0.0096	40.00	16971	6658	424.28	166.45	28.18%	Min
15	A2	0.0214	40.00	16459	6522	411.48	163.05	28.38%	28.18%
15	A3	0.0373	40.00	13826	5812	345.65	145.30	29.60%	
15	A4	0.0538	40.00	13778	5499	344.45	137.48	28.53%	Max
15	A5	0.0704	40.00	25324	10673	633.10	266.83	29.65%	32.36%
15	A6	0.0896	40.00	23987	10499	599.68	262.48	30.44%	
15	A7	0.1060	40.00	18532	8867	463.30	221.68	32.36%	Mean
15	A8	0.1233	40.00	19058	8782	476.45	219.55	31.54%	29.84%



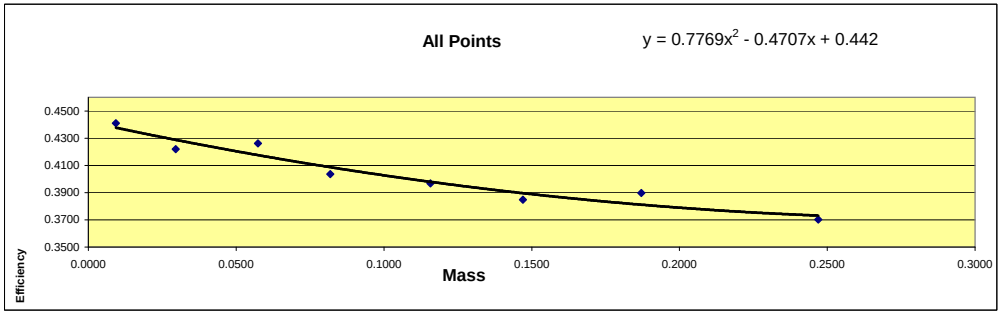
Standard ID
Thorium-230
Th-230_00016 #51465
Cert # 92523 Ref. date 11/29/2012
Activity 2374.5 dpm/mL

Curve is for Gross Beta
Strontium 90
and
Total Strontium

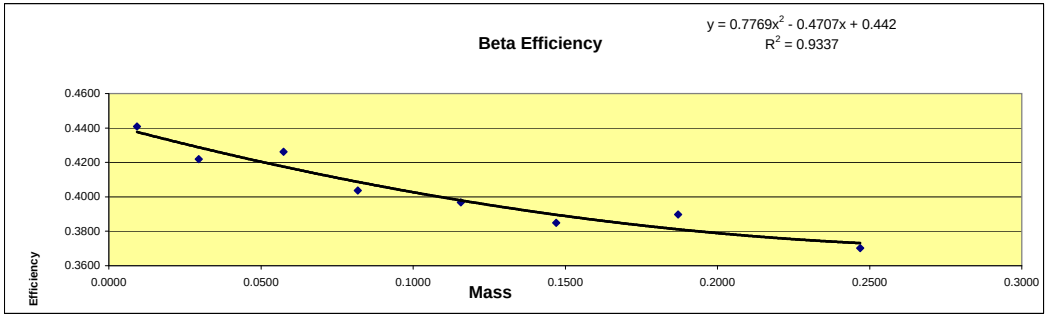
Protean 15

Detector ID	Std ID	Count Date	Sample Wt	Count Time	Beta Counts	DPM 41414.371 CPM	Sr-90 Eff	Standard Aliquot
15	B1	3/27/2013 10:28:44 AM	0.0093	1.01	18443	18260.396	0.4409	1mL
15	B2	3/27/2013 10:22:04 AM	0.0296	1.01	17651	17476.238	0.4220	1mL
15	B3	3/27/2013 10:14:38 AM	0.0574	1.01	17823	17646.535	0.4261	1mL
15	B4	3/27/2013 10:06:16 AM	0.0818	1.01	16883	16715.842	0.4036	1mL
15	B5	3/27/2013 9:57:09 AM	0.1157	1.01	16601	16436.634	0.3969	1mL
15	B6	3/27/2013 9:49:29 AM	0.1470	1.01	16099	15939.604	0.3849	1mL
15	B7	3/27/2013 9:36:15 AM	0.1871	1.01	16302	16140.594	0.3897	1mL
15	B8	3/27/2013 9:28:01 AM	0.2469	1.01	15488	15334.653	0.3703	1mL

Mass	Measured Efficiency	Theoretical Efficiency	Percent Δ Efficiency
0.0093	0.4409	0.4377	0.74%
0.0296	0.4220	0.4287	-1.58%
0.0574	0.4261	0.4175	2.05%
0.0818	0.4036	0.4087	-1.24%
0.1157	0.3969	0.3979	-0.27%
0.1470	0.3849	0.3896	-1.21%
0.1871	0.3897	0.3811	2.26%
0.2469	0.3703	0.3731	-0.77%



Mass	Efficiency
0.0093	0.4409
0.0296	0.4220
0.0574	0.4261
0.0818	0.4036
0.1157	0.3969
0.1470	0.3849
0.1871	0.3897
0.2469	0.3703



Standard ID
Strontium 90
Sr-90_00004 #6322
Cert# 80573-334 Ref. date 9/172009

Initial Activity:	22560	dpm/mL
Reference Date:	9/17/2009	
Count Date:	3/27/2013	
Elapsed Time:	1287.000	days
Half Life:	10409.625	days
Exponential Term:	0.917871706	
Corrected Activity:	20707.18568	dpm/mL
Decay Activity (Sr/Y-90)	41414.37137	dpm

Low Level Alpha/Beta Count Results
Sample Activity Report

Protean 12-15 - D **Address:** ***15***

Sample ID ***ICABT-6322;B8*** **Repeat** ***10***

Batch ID ***122627***

Count Routine ***Gross Alpha Beta*** **Detector Volts** ***1,515.0***

Sample Qty 0.000 **sd** 0.000

Residual Wt 0.000 ***mg*** **sd** 0.000 ***mg***

Count Date 3/27/2013 09:26 **Collection Date 1** **Half Life** 0.00 ***days***
Collection Date 2 **Decay Factor** 1.000

Sample Count Time 1.01 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.047	2	1.980	1.933
sd	0.000			0.007	1.414	1.400	1.400
Alpha to Beta	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.480	15,488	15,334.653	15,334.173
sd	0.000			0.022	124.451	123.219	123.219

	Net Activity dpm	LLD dpm	Net Concentration *	MDC	Limits	% of Limits
Alpha	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			
Beta	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			

*** Note: Decay Corrected MDC Method -** **Tb = Ts < 10**
Error = 0.00 **x sd**

Low Level Alpha/Beta Count Results
Sample Activity Report

Protean 12-15 - D **Address:** ***15***

Sample ID ***ICABT-6322;B7*** **Repeat** ***11***

Batch ID ***122627***

Count Routine ***Gross Alpha Beta*** **Detector Volts** ***1,515.0***

Sample Qty 0.000 **sd** 0.000

Residual Wt 0.000 ***mg*** **sd** 0.000 ***mg***

Count Date 3/27/2013 09:35 **Collection Date 1** **Half Life** 0.00 ***days***
Collection Date 2 **Decay Factor** 1.000

Sample Count Time 1.01 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.047	0	0.000	-0.047
sd	0.000			0.007	0.000	0.000	0.305
Alpha to Beta	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.480	16,302	16,140.594	16,140.114
sd	0.000			0.022	127.679	126.415	126.415

	Net Activity dpm	LLD dpm	Net Concentration *	MDC	Limits	% of Limits
Alpha	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			
Beta	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			

*** Note: Decay Corrected MDC Method -** **Tb = Ts < 10**
Error = 0.00 **x sd**

Low Level Alpha/Beta Count Results
Sample Activity Report

Protean 12-15 - D **Address:** ***15***

Sample ID ***ICABT-6322;B6*** **Repeat** ***12***

Batch ID ***122627***

Count Routine ***Gross Alpha Beta*** **Detector Volts** ***1,515.0***

Sample Qty 0.000 **sd** 0.000

Residual Wt 0.000 ***mg*** **sd** 0.000 ***mg***

Count Date 3/27/2013 09:48 **Collection Date 1** **Half Life** 0.00 ***days***
Collection Date 2 **Decay Factor** 1.000

Sample Count Time 1.01 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.047	1	0.990	0.943
sd	0.000			0.007	1.000	0.990	0.990
Alpha to Beta	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.480	16,099	15,939.604	15,939.124
sd	0.000			0.022	126.882	125.626	125.626

	Net Activity dpm	LLD dpm	Net Concentration *	MDC	Limits	% of Limits
Alpha	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			
Beta	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			

*** Note: Decay Corrected MDC Method -** **Tb = Ts < 10**
Error = 0.00 **x sd**

Low Level Alpha/Beta Count Results
Sample Activity Report

Protean 12-15 - D **Address:** ***15***

Sample ID ***ICABT-6322;B5*** **Repeat** ***13***

Batch ID ***122627***

Count Routine ***Gross Alpha Beta*** **Detector Volts** ***1,515.0***

Sample Qty 0.000 **sd** 0.000

Residual Wt 0.000 ***mg*** **sd** 0.000 ***mg***

Count Date 3/27/2013 09:55 **Collection Date 1** **Half Life** 0.00 ***days***
Collection Date 2 **Decay Factor** 1.000

Sample Count Time 1.01 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.047	1	0.990	0.943
sd	0.000			0.007	1.000	0.990	0.990
Alpha to Beta	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.480	16,601	16,436.634	16,436.154
sd	0.000			0.022	128.845	127.569	127.569

	Net Activity dpm	LLD dpm	Net Concentration *	MDC	Limits	% of Limits
Alpha	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			
Beta	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			

*** Note: Decay Corrected MDC Method -** **Tb = Ts < 10**
Error = 0.00 **x sd**

Low Level Alpha/Beta Count Results
Sample Activity Report

Protean 12-15 - D **Address:** ***15***

Sample ID ***ICABT-6322;B4*** **Repeat** ***14***

Batch ID ***122627***

Count Routine ***Gross Alpha Beta*** **Detector Volts** ***1,515.0***

Sample Qty 0.000 **sd** 0.000

Residual Wt 0.000 ***mg*** **sd** 0.000 ***mg***

Count Date 3/27/2013 10:05 **Collection Date 1** **Half Life** 0.00 ***days***
Collection Date 2 **Decay Factor** 1.000

Sample Count Time 1.01 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.047	0	0.000	-0.047
sd	0.000			0.007	0.000	0.000	0.305
Alpha to Beta	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.480	16,883	16,715.842	16,715.362
sd	0.000			0.022	129.935	128.648	128.648

	Net Activity dpm	LLD dpm	Net Concentration *	MDC	Limits	% of Limits
Alpha	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			
Beta	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			

*** Note: Decay Corrected MDC Method -** **Tb = Ts < 10**
Error = 0.00 **x sd**

Low Level Alpha/Beta Count Results
Sample Activity Report

Protean 12-15 - D **Address:** ***15***

Sample ID ***ICABT-6322;B3*** **Repeat** ***15***

Batch ID ***122627***

Count Routine ***Gross Alpha Beta*** **Detector Volts** ***1,515.0***

Sample Qty 0.000 **sd** 0.000

Residual Wt 0.000 ***mg*** **sd** 0.000 ***mg***

Count Date 3/27/2013 10:13 **Collection Date 1** **Half Life** 0.00 ***days***
Collection Date 2 **Decay Factor** 1.000

Sample Count Time 1.01 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.047	1	0.990	0.943
sd	0.000			0.007	1.000	0.990	0.990
Alpha to Beta	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.480	17,823	17,646.535	17,646.055
sd	0.000			0.022	133.503	132.181	132.181

	Net Activity dpm	LLD dpm	Net Concentration *	MDC	Limits	% of Limits
Alpha	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			
Beta	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			

*** Note: Decay Corrected MDC Method -** **Tb = Ts < 10**
Error = 0.00 **x sd**

Low Level Alpha/Beta Count Results
Sample Activity Report

Protean 12-15 - D **Address:** ***15***

Sample ID ***ICABT-6322;B2*** **Repeat** ***16***

Batch ID ***122627***

Count Routine ***Gross Alpha Beta*** **Detector Volts** ***1,515.0***

Sample Qty 0.000 **sd** 0.000

Residual Wt 0.000 ***mg*** **sd** 0.000 ***mg***

Count Date 3/27/2013 10:20 **Collection Date 1** **Half Life** 0.00 ***days***
Collection Date 2 **Decay Factor** 1.000

Sample Count Time 1.01 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.047	2	1.980	1.933
sd	0.000			0.007	1.414	1.400	1.400
Alpha to Beta	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.480	17,651	17,476.238	17,475.758
sd	0.000			0.022	132.857	131.542	131.542

	Net Activity dpm	LLD dpm	Net Concentration *	MDC	Limits	% of Limits
Alpha	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			
Beta	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			

*** Note: Decay Corrected MDC Method -** **Tb = Ts < 10**
Error = 0.00 **x sd**

Low Level Alpha/Beta Count Results
Sample Activity Report

Protean 12-15 - D **Address:** ***15***

Sample ID ***ICABT-6322;B1*** **Repeat** ***17***

Batch ID ***122627***

Count Routine ***Gross Alpha Beta*** **Detector Volts** ***1,515.0***

Sample Qty 0.000 **sd** 0.000

Residual Wt 0.000 ***mg*** **sd** 0.000 ***mg***

Count Date 3/27/2013 10:27 **Collection Date 1** **Half Life** 0.00 ***days***
Collection Date 2 **Decay Factor** 1.000

Sample Count Time 1.01 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.047	0	0.000	-0.047
sd	0.000			0.007	0.000	0.000	0.305
Alpha to Beta	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.480	18,443	18,260.396	18,259.916
sd	0.000			0.022	135.805	134.460	134.460

	Net Activity dpm	LLD dpm	Net Concentration *	MDC	Limits	% of Limits
Alpha	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			
Beta	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			

*** Note: Decay Corrected MDC Method -** **Tb = Ts < 10**
Error = 0.00 **x sd**

Low Level Alpha/Beta Count Results
Sample Activity Report

Protean 12-15 - D **Address:** ***15***

Sample ID ***ICABT-51465l;A1*** **Repeat** ***2***

Batch ID ***M132731***

Count Routine ***Gross Alpha Beta*** **Detector Volts** ***1,515.0***

Sample Qty 0.000 **sd** 0.000

Residual Wt 0.000 ***mg*** **sd** 0.000 ***mg***

Count Date 8/9/2013 14:52 **Collection Date 1** **Half Life** 0.00 ***days***
Collection Date 2 **Decay Factor** 1.000

Sample Count Time 50.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.043	16,971	339.420	339.377
sd	0.000			0.007	130.273	2.605	2.605
Alpha to Beta	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.521	6,658	133.160	132.639
sd	0.000			0.023	81.597	1.632	1.632

	Net Activity dpm	LLD dpm	Net Concentration *	MDC	Limits	% of Limits
Alpha	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			
Beta	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			

*** Note: Decay Corrected MDC Method -** **Tb = Ts < 10**
Error = 0.00 **x sd**

Low Level Alpha/Beta Count Results
Sample Activity Report

Protean 12-15 - D **Address:** ***15***

Sample ID ***ICABT-51465l;A2*** **Repeat** ***3***

Batch ID ***M132731***

Count Routine ***Gross Alpha Beta*** **Detector Volts** ***1,515.0***

Sample Qty 0.000 **sd** 0.000

Residual Wt 0.000 ***mg*** **sd** 0.000 ***mg***

Count Date 8/9/2013 16:37 **Collection Date 1** **Half Life** 0.00 ***days***
Collection Date 2 **Decay Factor** 1.000

Sample Count Time 50.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.043	16,459	329.180	329.137
sd	0.000			0.007	128.293	2.566	2.566
Alpha to Beta	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.521	6,522	130.440	129.919
sd	0.000			0.023	80.759	1.615	1.615

	Net Activity dpm	LLD dpm	Net Concentration *	MDC	Limits	% of Limits
Alpha	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			
Beta	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			

*** Note: Decay Corrected MDC Method -** **Tb = Ts < 10**
Error = 0.00 **x sd**

Low Level Alpha/Beta Count Results
Sample Activity Report

Protean 12-15 - D **Address:** ***15***

Sample ID ***ICABT-51465l;A3*** **Repeat** ***4***

Batch ID ***M132731***

Count Routine ***Gross Alpha Beta*** **Detector Volts** ***1,515.0***

Sample Qty 0.000 **sd** 0.000

Residual Wt 0.000 ***mg*** **sd** 0.000 ***mg***

Count Date 8/9/2013 17:43 **Collection Date 1** **Half Life** 0.00 ***days***
Collection Date 2 **Decay Factor** 1.000

Sample Count Time 50.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.043	13,826	276.520	276.477
sd	0.000			0.007	117.584	2.352	2.352
Alpha to Beta	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.521	5,812	116.240	115.719
sd	0.000			0.023	76.236	1.525	1.525

	Net Activity dpm	LLD dpm	Net Concentration *	MDC	Limits	% of Limits
Alpha	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			
Beta	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			

*** Note: Decay Corrected MDC Method -** **Tb = Ts < 10**
Error = 0.00 **x sd**

Low Level Alpha/Beta Count Results
Sample Activity Report

Protean 12-15 - D **Address:** ***15***

Sample ID ***ICABT-51465l;A8*** **Repeat** ***5***

Batch ID ***M132731***

Count Routine ***Gross Alpha Beta*** **Detector Volts** ***1,515.0***

Sample Qty 0.000 **sd** 0.000

Residual Wt 0.000 ***mg*** **sd** 0.000 ***mg***

Count Date 8/11/2013 20:22 **Collection Date 1** **Half Life** 0.00 ***days***
Collection Date 2 **Decay Factor** 1.000

Sample Count Time 50.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.043	19,058	381.160	381.117
sd	0.000			0.007	138.051	2.761	2.761
Alpha to Beta	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.521	8,782	175.640	175.119
sd	0.000			0.023	93.712	1.874	1.874

	Net Activity dpm	LLD dpm	Net Concentration *	MDC	Limits	% of Limits
Alpha	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			
Beta	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			

*** Note: Decay Corrected MDC Method -** **Tb = Ts < 10**
Error = 0.00 **x sd**

Low Level Alpha/Beta Count Results
Sample Activity Report

Protean 12-15 - D **Address:** ***15***

Sample ID ***ICABT-51465l;A7*** **Repeat** ***6***

Batch ID ***M132731***

Count Routine ***Gross Alpha Beta*** **Detector Volts** ***1,515.0***

Sample Qty 0.000 **sd** 0.000

Residual Wt 0.000 ***mg*** **sd** 0.000 ***mg***

Count Date 8/11/2013 22:18 **Collection Date 1** **Half Life** 0.00 ***days***
Collection Date 2 **Decay Factor** 1.000

Sample Count Time 50.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.043	18,532	370.640	370.597
sd	0.000			0.007	136.132	2.723	2.723
Alpha to Beta	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.521	8,867	177.340	176.819
sd	0.000			0.023	94.165	1.883	1.883

	Net Activity dpm	LLD dpm	Net Concentration *	MDC	Limits	% of Limits
Alpha	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			
Beta	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			

*** Note: Decay Corrected MDC Method -** **Tb = Ts < 10**
Error = 0.00 **x sd**

Low Level Alpha/Beta Count Results
Sample Activity Report

Protean 12-15 - D **Address:** ***15***

Sample ID ***ICABT-51465l;A6*** **Repeat** ***7***

Batch ID ***M132731***

Count Routine ***Gross Alpha Beta*** **Detector Volts** ***1,515.0***

Sample Qty 0.000 **sd** 0.000

Residual Wt 0.000 ***mg*** **sd** 0.000 ***mg***

Count Date 8/11/2013 23:10 **Collection Date 1** **Half Life** 0.00 ***days***
Collection Date 2 **Decay Factor** 1.000

Sample Count Time 50.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.043	23,987	479.740	479.697
sd	0.000			0.007	154.877	3.098	3.098
Alpha to Beta	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.521	10,499	209.980	209.459
sd	0.000			0.023	102.465	2.049	2.049

	Net Activity dpm	LLD dpm	Net Concentration *	MDC	Limits	% of Limits
Alpha	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			
Beta	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			

*** Note: Decay Corrected MDC Method -** **Tb = Ts < 10**
Error = 0.00 **x sd**

Low Level Alpha/Beta Count Results
Sample Activity Report

Protean 12-15 - D **Address:** ***15***

Sample ID ***ICABT-51465l;A5*** **Repeat** ***8***

Batch ID ***M132731***

Count Routine ***Gross Alpha Beta*** **Detector Volts** ***1,515.0***

Sample Qty 0.000 **sd** 0.000

Residual Wt 0.000 ***mg*** **sd** 0.000 ***mg***

Count Date 8/12/2013 10:46 **Collection Date 1** **Half Life** 0.00 ***days***
Collection Date 2 **Decay Factor** 1.000

Sample Count Time 50.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.043	25,324	506.480	506.437
sd	0.000			0.007	159.135	3.183	3.183
Alpha to Beta	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.521	10,673	213.460	212.939
sd	0.000			0.023	103.310	2.066	2.066

	Net Activity dpm	LLD dpm	Net Concentration *	MDC	Limits	% of Limits
Alpha	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			
Beta	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			

*** Note: Decay Corrected MDC Method -** **Tb = Ts < 10**
Error = 0.00 **x sd**

Low Level Alpha/Beta Count Results
Sample Activity Report

Protean 12-15 - D **Address:** ***15***

Sample ID ***ICABT-51465l;A4*** **Repeat** ***9***

Batch ID ***M132731***

Count Routine ***Gross Alpha Beta*** **Detector Volts** ***1,515.0***

Sample Qty 0.000 **sd** 0.000

Residual Wt 0.000 ***mg*** **sd** 0.000 ***mg***

Count Date 8/12/2013 17:54 **Collection Date 1** **Half Life** 0.00 ***days***
Collection Date 2 **Decay Factor** 1.000

Sample Count Time 50.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.043	13,778	275.560	275.517
sd	0.000			0.007	117.380	2.348	2.348
Alpha to Beta	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.521	5,499	109.980	109.459
sd	0.000			0.023	74.155	1.483	1.483

	Net Activity dpm	LLD dpm	Net Concentration *	MDC	Limits	% of Limits
Alpha	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			
Beta	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			

*** Note: Decay Corrected MDC Method -** **Tb = Ts < 10**
Error = 0.00 **x sd**

Alpha Beta Calibration Verifications

ICV is for Gross Beta
Strontium 90
and
Total Strontium

Orange Beta ICV 2013						
Detector	Low Mass Recovery	Medium Mass Recovery	High Mass Recovery	Mean Recovery	Beta Activity	2009.34 pCi
4	99.78%	99.98%	101.63%	100.46%		

Standard ID

Strontium 90
Sr-90_00018 #51512 (Rad12-0043)
Cert# 92352 Ref. date 11/29/12

Initial Activity:	2238.7	dpm	
Reference Date:	11/29/2012		
Current Date:	1/24/2013		(or date at which you wish to determine activity)
Elapsed Time:	56.000	days	
Half Life:	10409.625	days	
Exponential Term:	0.996278064		
Corrected Activity:	2230.367701	dpm	
Decay Activity (Sr/Y-90)	4460.735402	dpm	2009.34 pCi

ICV is for Gross Alpha

Orange Alpha ICV 2013				
	Low	Medium	High	Mean
	Mass	Mass	Mass	Recovery
Detector	Recovery	Recovery	Recovery	
4	120.12%	102.53%	87.34%	103.33%

Standard ID

Thorium-230
Th-230_00003 #6340
Cert # 84460-334 Ref. date 4/11/11
Activity 1079.73 pCi/mL

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - A

Addr: 4

Sample ID ICV-51512;Beta 1 **Repeat** 1

Carrier No. 0

Batch ID m122640

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/24/2013 6:10:26 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 1/24/2013 6:15:29 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.049	4	0.800	0.751
sd	0.000			0.007	2.000	0.400	0.400
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.380	9,525	1,905.000	1,904.620
sd	0.000			0.019	97.596	19.519	19.519

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - A

Addr: 4

Sample ID ICV-51512;Beta 3 **Repeat** 3

Carrier No. 0

Batch ID m122640

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/24/2013 6:25:15 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 1/24/2013 6:30:18 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.049	2	0.400	0.351
sd	0.000			0.007	1.414	0.283	0.283
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.380	8,745	1,749.000	1,748.620
sd	0.000			0.019	93.515	18.703	18.703

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - A

Addr: 4

Sample ID ICV-51512;Beta 2

Repeat 4

Carrier No. 0

Batch ID m122640

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 1/24/2013 6:33:12 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 1/24/2013 6:38:15 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.049	1	0.200	0.151
sd	0.000			0.007	1.000	0.200	0.200
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.380	9,009	1,801.800	1,801.420
sd	0.000			0.019	94.916	18.983	18.983

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - A

Addr: 4

Sample ID ICVABT-6340;A2 **Repeat** 9

Carrier No. 0

Batch ID m132736

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/24/2013 8:56:57 AM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 7/24/2013 9:27:00 AM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 30.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	7,806	260.200	260.132
sd	0.000			0.008	88.352	2.945	2.945
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.386	3,455	115.167	114.781
sd	0.000			0.020	58.779	1.959	1.959

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - A

Addr: 4

Sample ID ICVABT-6340;A1 **Repeat** 10

Carrier No. 0

Batch ID m132736

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/24/2013 9:49:41 AM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 7/24/2013 10:19:46 AM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 30.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	11,505	383.500	383.432
sd	0.000			0.008	107.261	3.575	3.575
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.386	4,581	152.700	152.314
sd	0.000			0.020	67.683	2.256	2.256

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - A

Addr: 4

Sample ID ICVABT-6340;A3 **Repeat** 11

Carrier No. 0

Batch ID m132736

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/24/2013 10:43:44 AM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 7/24/2013 11:13:47 AM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 30.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	5,825	194.167	194.099
sd	0.000			0.008	76.322	2.544	2.544
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.386	2,933	97.767	97.381
sd	0.000			0.020	54.157	1.805	1.805

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

ICV is for Gross Beta
Strontium 90
and
Total Strontium

Orange Beta ICV 2013						
Detector	Low Mass Recovery	Medium Mass Recovery	High Mass Recovery	Mean Recovery	Beta Activity	2009.34 pCi
6	97.99%	98.74%	99.88%	98.87%		

Standard ID

Strontium 90
Sr-90_00018 #51512 (Rad12-0043)
Cert# 92352 Ref. date 11/29/12

Initial Activity:	2238.7	dpm	
Reference Date:	11/29/2012		
Current Date:	1/24/2013		(or date at which you wish to determine activity)
Elapsed Time:	56.000	days	
Half Life:	10409.625	days	
Exponential Term:	0.996278064		
Corrected Activity:	2230.367701	dpm	
Decay Activity (Sr/Y-90)	4460.735402	dpm	2009.34 pCi

ICV is for Gross Alpha

Orange Alpha ICV 2013				
	Low	Medium	High	Mean
	Mass	Mass	Mass	Recovery
Detector	Recovery	Recovery	Recovery	
6	118.18%	101.41%	84.66%	101.42%

Standard ID

Thorium-230
Th-230_00003 #6340
Cert # 84460-334 Ref. date 4/11/11
Activity 1079.73 pCi/mL

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - C

Addr: 6

Sample ID ICV-51512;Beta 3 **Repeat** 1

Carrier No. 0

Batch ID m122640

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/24/2013 6:10:34 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 1/24/2013 6:15:36 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.073	1	0.200	0.127
sd	0.000			0.009	1.000	0.200	0.200
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.346	8,560	1,712.000	1,711.654
sd	0.000			0.019	92.520	18.504	18.504

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - C

Addr: 6

Sample ID ICV-51512;Beta 2 **Repeat** 2

Carrier No. 0

Batch ID m122640

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/24/2013 6:16:59 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 1/24/2013 6:22:02 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.073	0	0.000	-0.073
sd	0.000			0.009	0.000	0.000	0.171
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.346	8,863	1,772.600	1,772.254
sd	0.000			0.019	94.144	18.829	18.829

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - C

Addr: 6

Sample ID ICV-51512;Beta 1 **Repeat** 3

Carrier No. 0

Batch ID m122640

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 1/24/2013 6:25:24 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 1/24/2013 6:30:26 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.073	1	0.200	0.127
sd	0.000			0.009	1.000	0.200	0.200
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.346	9,330	1,866.000	1,865.654
sd	0.000			0.019	96.592	19.318	19.318

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - C

Addr: 6

Sample ID ICVABT-6340;A1 **Repeat** 12

Carrier No. 0

Batch ID m132736

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 7/24/2013 11:45:14 AM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 7/24/2013 12:15:19 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 30.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.081	11,162	372.067	371.986
sd	0.000			0.009	105.650	3.522	3.522
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.461	4,391	146.367	145.906
sd	0.000			0.021	66.265	2.209	2.209

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - C

Addr: 6

Sample ID ICVABT-6340;A2 **Repeat** 12

Carrier No. 0

Batch ID m132736

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 7/24/2013 3:13:39 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 7/24/2013 3:43:42 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 30.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.081	7,577	252.567	252.486
sd	0.000			0.009	87.046	2.902	2.902
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.461	3,454	115.133	114.672
sd	0.000			0.021	58.771	1.959	1.959

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - C

Addr: 6

Sample ID ICVABT-6340;A3 **Repeat** 13

Carrier No. 0

Batch ID m132736

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 7/24/2013 3:46:36 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 7/24/2013 4:16:39 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 30.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.081	5,528	184.267	184.186
sd	0.000			0.009	74.351	2.478	2.478
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.461	2,829	94.300	93.839
sd	0.000			0.021	53.188	1.773	1.773

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

ICV is for Gross Beta
Strontium 90
and
Total Strontium

Orange Beta ICV 2013				
Detector	Low Mass Recovery	Medium Mass Recovery	High Mass Recovery	Mean Recovery
11	98.24%	99.68%	98.09%	98.67%

Beta Activity 2009.34 pCi

Standard ID

Strontium 90
Sr-90_00018 #51512 (Rad12-0043)
Cert# 92352 Ref. date 11/29/12

Initial Activity:	2238.7	dpm	
Reference Date:	11/29/2012		
Current Date:	1/24/2013		(or date at which you wish to determine activity)
Elapsed Time:	56.000	days	
Half Life:	10409.625	days	
Exponential Term:	0.996278064		
Corrected Activity:	2230.367701	dpm	
Decay Activity (Sr/Y-90)	4460.735402	dpm	2009.34 pCi

ICV is for Gross Alpha

Orange Alpha ICV 2013				
	Low	Medium	High	Mean
	Mass	Mass	Mass	Recovery
Detector	Recovery	Recovery	Recovery	
11	117.81%	96.88%	81.59%	98.76%

Standard ID

Thorium-230
Th-230_00003 #6340
Cert # 84460-334 Ref. date 4/11/11
Activity 1079.73 pCi/mL

Alpha/Beta Count Results

Sample Activity Report

Orange 8-11 - D

Addr: 11

Sample ID ICV-51512;Beta 3 **Repeat** 10

Carrier No. 0

Batch ID m122640

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/24/2013 7:32:07 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 1/24/2013 7:37:09 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.044	0	0.000	-0.044
sd	0.000			0.007	0.000	0.000	0.133
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.487	8,344	1,668.800	1,668.313
sd	0.000			0.022	91.345	18.269	18.269

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 8-11 - D

Addr: 11

Sample ID ICV-51512;Beta 2

Repeat 11

Carrier No. 0

Batch ID m122640

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/24/2013 7:38:39 PM

Count Ended 1/24/2013 7:43:42 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 5.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.044	3	0.600	0.556
sd	0.000			0.007	1.732	0.346	0.346
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.487	8,877	1,775.400	1,774.913
sd	0.000			0.022	94.218	18.844	18.844

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 8-11 - D

Addr: 11

Sample ID ICV-51512;Beta 1 **Repeat** 12

Carrier No. 0

Batch ID m122640

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/24/2013 7:50:18 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 1/24/2013 7:55:20 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.044	2	0.400	0.356
sd	0.000			0.007	1.414	0.283	0.283
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.487	9,272	1,854.400	1,853.913
sd	0.000			0.022	96.291	19.258	19.258

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 8-11 - D

Addr: 11

Sample ID ICVABT-6340;A3

Repeat 15

Carrier No. 0

Batch ID m132736

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/24/2013 8:19:22 PM

Count Ended 7/24/2013 8:49:25 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 30.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	6,238	207.933	207.865
sd	0.000			0.008	78.981	2.633	2.633
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.497	2,446	81.533	81.036
sd	0.000			0.022	49.457	1.649	1.649

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 8-11 - D

Addr: 11

Sample ID ICVABT-6340;A2 **Repeat** 16

Carrier No. 0

Batch ID m132736

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/24/2013 8:51:14 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 7/24/2013 9:21:17 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 30.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	8,127	270.900	270.832
sd	0.000			0.008	90.150	3.005	3.005
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.497	2,836	94.533	94.036
sd	0.000			0.022	53.254	1.775	1.775

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 8-11 - D

Addr: 11

Sample ID ICVABT-6340;A1 **Repeat** 17

Carrier No. 0

Batch ID m132736

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 7/24/2013 9:31:19 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 7/24/2013 10:01:23 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 30.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	11,723	390.767	390.699
sd	0.000			0.008	108.273	3.609	3.609
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.497	3,828	127.600	127.103
sd	0.000			0.022	61.871	2.062	2.062

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

ICV is for Gross Beta
Strontium 90
and
Total Strontium

Orange Beta ICV 2013				
Detector	Low Mass Recovery	Medium Mass Recovery	High Mass Recovery	Mean Recovery
16	97.44%	99.44%	99.63%	98.84%

Beta Activity 2009.34 pCi

Standard ID

Strontium 90
Sr-90_00018 #51512 (Rad12-0043)
Cert# 92352 Ref. date 11/29/12

Initial Activity:	2238.7	dpm	
Reference Date:	11/29/2012		
Current Date:	1/24/2013		(or date at which you wish to determine activity)
Elapsed Time:	56.000	days	
Half Life:	10409.625	days	
Exponential Term:	0.996278064		
Corrected Activity:	2230.367701	dpm	
Decay Activity (Sr/Y-90)	4460.735402	dpm	2009.34 pCi

ICV is for Gross Alpha

Orange Alpha ICV 2013				
	Low	Medium	High	Mean
	Mass	Mass	Mass	Recovery
Detector	Recovery	Recovery	Recovery	
16	118.09%	96.32%	82.10%	98.84%

Standard ID

Thorium-230
Th-230_00003 #6340
Cert # 84460-334 Ref. date 4/11/11
Activity 1079.73 pCi/mL

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - A

Addr: 16

Sample ID ICV-51512;Beta 1 **Repeat** 17

Carrier No. 0

Batch ID m122640

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/24/2013 9:41:31 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 1/24/2013 9:46:33 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.073	11	2.200	2.127
sd	0.000			0.009	3.317	0.663	0.663
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.368	9,365	1,873.000	1,872.632
sd	0.000			0.019	96.773	19.355	19.355

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - A

Addr: 16

Sample ID ICV-51512;Beta 3 **Repeat** 19

Carrier No. 0

Batch ID m122640

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/24/2013 9:54:50 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 1/24/2013 9:59:52 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.073	7	1.400	1.327
sd	0.000			0.009	2.646	0.529	0.529
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.368	8,585	1,717.000	1,716.632
sd	0.000			0.019	92.655	18.531	18.531

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - A

Addr: 16

Sample ID ICV-51512;Beta 2

Repeat 20

Carrier No. 0

Batch ID m122640

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/24/2013 10:01:47 PM

Collection Date 1 1/1/1900

Half Life 0.00 ***days***

Count Ended 1/24/2013 10:06:49 PM

Collection Date 2 1/1/1900

Decay Factor 1.000

Sample Count Time 5.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.073	4	0.800	0.727
sd	0.000			0.009	2.000	0.400	0.400
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.368	9,016	1,803.200	1,802.832
sd	0.000			0.019	94.953	18.991	18.991

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - A

Addr: 16

Sample ID ICVABT-6340;A1 **Repeat** 22

Carrier No. 0

Batch ID m132736

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 7/25/2013 10:59:28 AM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 7/25/2013 11:29:32 AM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 30.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.082	11,962	398.733	398.651
sd	0.000			0.009	109.371	3.646	3.646
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	1.397	4,044	134.800	133.403
sd	0.000			0.037	63.592	2.120	2.120

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - A

Addr: 16

Sample ID ICVABT-6340;A3 **Repeat** 24

Carrier No. 0

Batch ID m132736

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/25/2013 12:06:30 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 7/25/2013 12:36:33 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 30.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.082	6,420	214.000	213.918
sd	0.000			0.009	80.125	2.671	2.671
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	1.397	2,685	89.500	88.103
sd	0.000			0.037	51.817	1.727	1.728

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - A

Addr: 16

Sample ID ICVABT-6340;A2 **Repeat** 25

Carrier No. 0

Batch ID m132736

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/25/2013 12:39:33 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 7/25/2013 1:09:37 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 30.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.082	8,259	275.300	275.218
sd	0.000			0.009	90.879	3.029	3.029
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	1.397	3,138	104.600	103.203
sd	0.000			0.037	56.018	1.867	1.868

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

ICV is for Gross Alpha

Protean Alpha ICV - 2013				
	Low	Medium	High	Mean
	Mass	Mass	Mass	Recovery
Detector	Recovery	Recovery	Recovery	
15	122.25%	103.82%	87.14%	104.41%

Standard ID

Thorium-230
Th-230_00003 #6340
Cert # 84460-334 Ref. date 4/11/11

Activity 1079.73 pCi/mL

ICV is for Gross Beta
Strontium 90
and
Total Strontium

Protean Beta ICV - 2013				
Detector	Low Mass Recovery	Medium Mass Recovery	High Mass Recovery	Mean Recovery
15	97.91%	97.45%	99.00%	98.12%

Beta Activity 2000.929 pCi

Beta Activity 2000.796 pCi

Standard ID

Strontium 90
Sr-90_00018 #51512
Cert# 92352 Ref. date 11/29/12

Initial Activity:	2238.7	dpm	
Reference Date:	11/29/2012		
Current Date:	3/28/2013		(or date at which you wish to determine activity)
Elapsed Time:	119.000	days	
Half Life:	10409.625	days	
Exponential Term:	0.992107441		
Corrected Activity:	2221.030929	dpm	
Decay Activity (Sr/Y-90)	4442.061857	dpm	2000.929 pCi

Initial Activity:	2238.7	dpm	
Reference Date:	11/29/2012		
Current Date:	3/29/2013		(or date at which you wish to determine activity)
Elapsed Time:	120.000	days	
Half Life:	10409.625	days	
Exponential Term:	0.992041382		
Corrected Activity:	2220.883041	dpm	
Decay Activity (Sr/Y-90)	4441.766083	dpm	2000.796 pCi

Low Level Alpha/Beta Count Results
Sample Activity Report

Protean 12-15 - D **Address:** ***15***

Sample ID ***ICVABT-51512;Beta 3*** **Repeat** ***17***

Batch ID ***122640***

Count Routine ***Gross Alpha Beta*** **Detector Volts** ***1,515.0***

Sample Qty 0.000 **sd** 0.000

Residual Wt 0.000 ***mg*** **sd** 0.000 ***mg***

Count Date 3/28/2013 23:53 **Collection Date 1** **Half Life** 0.00 ***days***
Collection Date 2 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.047	0	0.000	-0.047
sd	0.000			0.007	0.000	0.000	0.137
Alpha to Beta	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.480	8,408	1,681.600	1,681.120
sd	0.000			0.022	91.695	18.339	18.339

	Net Activity dpm	LLD dpm	Net Concentration *	MDC	Limits	% of Limits
Alpha	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			
Beta	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			

*** Note: Decay Corrected MDC Method -** **Tb = Ts < 10**
Error = 0.00 **x sd**

Low Level Alpha/Beta Count Results
Sample Activity Report

Protean 12-15 - D **Address:** ***15***

Sample ID ***ICVABT-51512;Beta 2*** **Repeat** ***18***

Batch ID ***122640***

Count Routine ***Gross Alpha Beta*** **Detector Volts** ***1,515.0***

Sample Qty 0.000 **sd** 0.000

Residual Wt 0.000 ***mg*** **sd** 0.000 ***mg***

Count Date 3/28/2013 23:59 **Collection Date 1** **Half Life** 0.00 ***days***
Collection Date 2 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.047	5	1.000	0.953
sd	0.000			0.007	2.236	0.447	0.447
Alpha to Beta	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.480	8,642	1,728.400	1,727.920
sd	0.000			0.022	92.962	18.592	18.592

	Net Activity dpm	LLD dpm	Net Concentration *	MDC	Limits	% of Limits
Alpha	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			
Beta	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			

*** Note: Decay Corrected MDC Method -** **Tb = Ts < 10**
Error = 0.00 **x sd**

Low Level Alpha/Beta Count Results
Sample Activity Report

Protean 12-15 - D **Address:** ***15***

Sample ID ***ICVABT-51512;Beta 1*** **Repeat** ***19***

Batch ID ***122640***

Count Routine ***Gross Alpha Beta*** **Detector Volts** ***1,515.0***

Sample Qty 0.000 **sd** 0.000

Residual Wt 0.000 ***mg*** **sd** 0.000 ***mg***

Count Date 3/29/2013 00:05 **Collection Date 1** **Half Life** 0.00 ***days***
Collection Date 2 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.047	2	0.400	0.353
sd	0.000			0.007	1.414	0.283	0.283
Alpha to Beta	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.480	9,131	1,826.200	1,825.720
sd	0.000			0.022	95.556	19.111	19.111

	Net Activity dpm	LLD dpm	Net Concentration *	MDC	Limits	% of Limits
Alpha	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			
Beta	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			

*** Note: Decay Corrected MDC Method -** **Tb = Ts < 10**
Error = 0.00 **x sd**

Low Level Alpha/Beta Count Results
Sample Activity Report

Protean 12-15 - D **Address:** ***15***

Sample ID ***ICVABT-6340;A3*** **Repeat** ***6***

Batch ID ***M132736***

Count Routine ***Gross Alpha Beta*** **Detector Volts** ***1,515.0***

Sample Qty 0.000 **sd** 0.000

Residual Wt 0.000 ***mg*** **sd** 0.000 ***mg***

Count Date 8/18/2013 17:31 **Collection Date 1** **Half Life** 0.00 ***days***
Collection Date 2 **Decay Factor** 1.000

Sample Count Time 30.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.043	6,524	217.467	217.424
sd	0.000			0.007	80.771	2.692	2.692
Alpha to Beta	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.521	3,087	102.900	102.379
sd	0.000			0.023	55.561	1.852	1.852

	Net Activity dpm	LLD dpm	Net Concentration *	MDC	Limits	% of Limits
Alpha	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			
Beta	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			

*** Note: Decay Corrected MDC Method -** **Tb = Ts < 10**
Error = 0.00 **x sd**

Low Level Alpha/Beta Count Results
Sample Activity Report

Protean 12-15 - D **Address:** ***15***

Sample ID ***ICVABT-6340;A2*** **Repeat** ***7***

Batch ID ***M132736***

Count Routine ***Gross Alpha Beta*** **Detector Volts** ***1,515.0***

Sample Qty 0.000 **sd** 0.000

Residual Wt 0.000 ***mg*** **sd** 0.000 ***mg***

Count Date 8/18/2013 18:08 **Collection Date 1** **Half Life** 0.00 ***days***
Collection Date 2 **Decay Factor** 1.000

Sample Count Time 30.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.043	8,530	284.333	284.290
sd	0.000			0.007	92.358	3.079	3.079
Alpha to Beta	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.521	3,555	118.500	117.979
sd	0.000			0.023	59.624	1.987	1.988

	Net Activity dpm	LLD dpm	Net Concentration *	MDC	Limits	% of Limits
Alpha	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			
Beta	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			

*** Note: Decay Corrected MDC Method -** **Tb = Ts < 10**
Error = 0.00 **x sd**

Low Level Alpha/Beta Count Results
Sample Activity Report

Protean 12-15 - D **Address:** ***15***

Sample ID ***ICVABT-6340;A1*** **Repeat** ***8***

Batch ID ***M132736***

Count Routine ***Gross Alpha Beta*** **Detector Volts** ***1,515.0***

Sample Qty 0.000 **sd** 0.000

Residual Wt 0.000 ***mg*** **sd** 0.000 ***mg***

Count Date 8/18/2013 18:45 **Collection Date 1** **Half Life** 0.00 ***days***
Collection Date 2 **Decay Factor** 1.000

Sample Count Time 30.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.043	11,818	393.933	393.890
sd	0.000			0.007	108.711	3.624	3.624
Alpha to Beta	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.521	4,564	152.133	151.612
sd	0.000			0.023	67.557	2.252	2.252

	Net Activity dpm	LLD dpm	Net Concentration *	MDC	Limits	% of Limits
Alpha	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			
Beta	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			

*** Note: Decay Corrected MDC Method -** **Tb = Ts < 10**
Error = 0.00 **x sd**

Alpha Beta Annual Calibration Verifications

Orange Alpha ACV 2014				
	Low	Medium	High	Mean
	Mass	Mass	Mass	Recovery
Detector	Recovery	Recovery	Recovery	
4	122.44%	107.34%	94.84%	108.21%

Standard ID

Thorium-230

Th-230_00003 #6340

Cert # 84460-334 Ref. date 4/11/11

Activity 1079.73 pCi/mL

Orange Beta ACV 2014						
Detector	Low Mass Recovery	Medium Mass Recovery	High Mass Recovery	Mean Recovery	Beta Activity	1958.744 pCi
4	96.85%	99.40%	97.66%	97.97%		

Standard ID

Strontium 90
Sr-90_00018 #51512
Cert# 92352 Ref. date 11/29/12

Initial Activity:	2238.7	dpm	
Reference Date:	11/29/2012		
Current Date:	2/11/2014		(or date at which you wish to determine activity)
Elapsed Time:	439.000	days	
Half Life:	10409.625	days	
Exponential Term:	0.971191359		
Corrected Activity:	2174.206097	dpm	
Decay Activity (Sr/Y-90)	4348.412193	dpm	1958.744 pCi

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - A

Addr: 4

Sample ID ACVABT-51512;B3 **Repeat** 3

Carrier No. 0

Batch ID M142810

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 2/11/2014 5:41:21 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 2/11/2014 5:46:24 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.067	0	0.000	-0.067
sd	0.000			0.008	0.000	0.000	0.164
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.357	8,191	1,638.200	1,637.843
sd	0.000			0.019	90.504	18.101	18.101

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - A

Addr: 4

Sample ID ACVABT-51512;B2

Repeat 4

Carrier No. 0

Batch ID M142810

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 2/11/2014 5:47:26 PM

Count Ended 2/11/2014 5:52:27 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 5.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.067	0	0.000	-0.067
sd	0.000			0.008	0.000	0.000	0.164
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.357	8,730	1,746.000	1,745.643
sd	0.000			0.019	93.434	18.687	18.687

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - A

Addr: 4

Sample ID ACVABT-51512;B1

Repeat 5

Carrier No. 0

Batch ID M142810

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 2/11/2014 5:54:45 PM

Count Ended 2/11/2014 5:59:47 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 5.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.067	0	0.000	-0.067
sd	0.000			0.008	0.000	0.000	0.164
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.357	9,013	1,802.600	1,802.243
sd	0.000			0.019	94.937	18.987	18.987

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - A

Addr: 4

Sample ID ACVABT-6340;A3

Repeat 3

Carrier No. 0

Batch ID M142808

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 2/11/2014 7:39:44 PM

Count Ended 2/11/2014 8:09:47 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 30.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.067	6,326	210.867	210.800
sd	0.000			0.008	79.536	2.651	2.651
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.357	3,274	109.133	108.776
sd	0.000			0.019	57.219	1.907	1.907

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - A

Addr: 4

Sample ID ACVABT-6340;A2 **Repeat** 4

Carrier No. 0

Batch ID M142808

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 2/11/2014 8:19:19 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 2/11/2014 8:49:22 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 30.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.067	8,171	272.367	272.300
sd	0.000			0.008	90.394	3.013	3.013
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.357	3,801	126.700	126.343
sd	0.000			0.019	61.652	2.055	2.055

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - A

Addr: 4

Sample ID ACVABT-6340;A1

Repeat 5

Carrier No. 0

Batch ID M142808

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 2/11/2014 8:51:32 PM

Count Ended 2/11/2014 9:21:36 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 30.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.067	11,727	390.900	390.833
sd	0.000			0.008	108.291	3.610	3.610
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.357	4,709	156.967	156.610
sd	0.000			0.019	68.622	2.287	2.287

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Orange Alpha ACV 2014				
	Low	Medium	High	Mean
	Mass	Mass	Mass	Recovery
Detector	Recovery	Recovery	Recovery	
6	121.88%	107.43%	95.02%	108.11%

Standard ID

Thorium-230

Th-230_00003 #6340

Cert # 84460-334 Ref. date 4/11/11

Activity 1079.73 pCi/mL

Orange Beta ACV 2014

Detector	Low Mass Recovery	Medium Mass Recovery	High Mass Recovery	Mean Recovery
6	97.66%	95.01%	96.64%	96.44%

Beta Activity 1958.744 pCi

Standard ID

Strontium 90
Sr-90_00018 #51512
Cert# 92352 Ref. date 11/29/12

Initial Activity:	2238.7	dpm	
Reference Date:	11/29/2012		
Current Date:	2/11/2014		(or date at which you wish to determine activity)
Elapsed Time:	439.000	days	
Half Life:	10409.625	days	
Exponential Term:	0.971191359		
Corrected Activity:	2174.206097	dpm	
Decay Activity (Sr/Y-90)	4348.412193	dpm	1958.744 pCi

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - C

Addr: 6

Sample ID ACVABT-51512;B3

Repeat 5

Carrier No. 0

Batch ID M142810

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 2/11/2014 5:54:54 PM

Count Ended 2/11/2014 5:59:57 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 *days*

Decay Factor 1.000

Sample Count Time 5.00 *mins*

Background Count Time 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.095	1	0.200	0.105
sd	0.000			0.010	1.000	0.200	0.200
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.466	8,073	1,614.600	1,614.134
sd	0.000			0.022	89.850	17.970	17.970

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - C

Addr: 6

Sample ID ACVABT-51512;B2

Repeat 6

Carrier No. 0

Batch ID M142810

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 2/11/2014 6:01:08 PM

Count Ended 2/11/2014 6:06:09 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 5.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.095	0	0.000	-0.095
sd	0.000			0.010	0.000	0.000	0.195
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.466	8,316	1,663.200	1,662.734
sd	0.000			0.022	91.192	18.238	18.238

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - C

Addr: 6

Sample ID ACVABT-51512;B1 **Repeat** 7

Carrier No. 0

Batch ID M142810

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 2/11/2014 6:09:32 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 2/11/2014 6:14:35 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.095	1	0.200	0.105
sd	0.000			0.010	1.000	0.200	0.200
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.466	9,069	1,813.800	1,813.334
sd	0.000			0.022	95.231	19.046	19.046

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - C

Addr: 6

Sample ID ACVABT-6340;A3

Repeat 5

Carrier No. 0

Batch ID M142808

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 2/11/2014 8:51:42 PM

Count Ended 2/11/2014 9:21:45 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 30.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.095	6,203	206.767	206.672
sd	0.000			0.010	78.759	2.625	2.625
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.466	3,126	104.200	103.734
sd	0.000			0.022	55.911	1.864	1.864

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - C

Addr: 6

Sample ID ACVABT-6340;A2

Repeat 6

Carrier No. 0

Batch ID M142808

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 2/11/2014 9:24:12 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 2/11/2014 9:54:16 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 30.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.095	8,026	267.533	267.438
sd	0.000			0.010	89.588	2.986	2.986
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.466	3,737	124.567	124.101
sd	0.000			0.022	61.131	2.038	2.038

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - C

Addr: 6

Sample ID ACVABT-6340;A1 **Repeat** 7

Carrier No. 0

Batch ID M142808

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 2/11/2014 9:55:17 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 2/11/2014 10:25:21 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 30.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.095	11,513	383.767	383.672
sd	0.000			0.010	107.299	3.577	3.577
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.466	4,587	152.900	152.434
sd	0.000			0.022	67.727	2.258	2.258

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Orange Alpha ACV 2014				
	Low	Medium	High	Mean
	Mass	Mass	Mass	Recovery
Detector	Recovery	Recovery	Recovery	
11	128.09%	107.43%	90.46%	108.66%

Standard ID

Thorium-230

Th-230_00003 #6340

Cert # 84460-334 Ref. date 4/11/11

Activity 1079.73 pCi/mL

Orange Beta ACV 2014

Detector	Low Mass Recovery	Medium Mass Recovery	High Mass Recovery	Mean Recovery
11	99.71%	97.05%	97.15%	97.97%

Beta Activity 1958.744 pCi

Standard ID

Strontium 90
Sr-90_00018 #51512
Cert# 92352 Ref. date 11/29/12

Initial Activity:	2238.7	dpm	
Reference Date:	11/29/2012		
Current Date:	2/11/2014		(or date at which you wish to determine activity)
Elapsed Time:	439.000	days	
Half Life:	10409.625	days	
Exponential Term:	0.971191359		
Corrected Activity:	2174.206097	dpm	
Decay Activity (Sr/Y-90)	4348.412193	dpm	1958.744 pCi

Alpha/Beta Count Results

Sample Activity Report

Orange 8-11 - D

Addr: 11

Sample ID ACVABT-51512;B3

Repeat 10

Carrier No. 0

Batch ID M142810

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 2/11/2014 6:35:40 PM

Count Ended 2/11/2014 6:40:42 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 5.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.062	3	0.600	0.538
sd	0.000			0.008	1.732	0.346	0.346
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.489	8,059	1,611.800	1,611.311
sd	0.000			0.022	89.772	17.954	17.954

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 8-11 - D

Addr: 11

Sample ID ACVABT-51512;B2

Repeat 11

Carrier No. 0

Batch ID M142810

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 2/11/2014 7:04:52 PM

Count Ended 2/11/2014 7:09:53 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 *days*

Decay Factor 1.000

Sample Count Time 5.00 *mins*

Background Count Time 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.062	2	0.400	0.338
sd	0.000			0.008	1.414	0.283	0.283
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.489	8,424	1,684.800	1,684.311
sd	0.000			0.022	91.782	18.356	18.356

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 8-11 - D

Addr: 11

Sample ID ACVABT-51512;B1

Repeat 12

Carrier No. 0

Batch ID M142810

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 2/11/2014 7:11:35 PM

Count Ended 2/11/2014 7:16:37 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 5.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.062	2	0.400	0.338
sd	0.000			0.008	1.414	0.283	0.283
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.489	9,174	1,834.800	1,834.311
sd	0.000			0.022	95.781	19.156	19.156

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 8-11 - D

Addr: 11

Sample ID ACVABT-6340;A3

Repeat 10

Carrier No. 0

Batch ID M142808

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 2/11/2014 11:30:07 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 2/12/2014 12:00:10 AM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 30.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.062	6,915	230.500	230.438
sd	0.000			0.008	83.156	2.772	2.772
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.489	2,804	93.467	92.978
sd	0.000			0.022	52.953	1.765	1.765

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 8-11 - D

Addr: 11

Sample ID ACVABT-6340;A2

Repeat 12

Carrier No. 0

Batch ID M142808

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 2/12/2014 12:24:23 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 2/12/2014 12:54:27 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 30.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.062	9,011	300.367	300.305
sd	0.000			0.008	94.926	3.164	3.164
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.489	3,256	108.533	108.044
sd	0.000			0.022	57.061	1.902	1.902

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 8-11 - D

Addr: 11

Sample ID ACVABT-6340;A1

Repeat 25

Carrier No. 0

Batch ID M142808

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 2/19/2014 11:49:01 AM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 2/19/2014 12:19:05 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 30.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.062	12,746	424.867	424.805
sd	0.000			0.008	112.898	3.763	3.763
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.489	4,222	140.733	140.244
sd	0.000			0.022	64.977	2.166	2.166

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Orange Alpha ACV 2014				
	Low	Medium	High	Mean
	Mass	Mass	Mass	Recovery
Detector	Recovery	Recovery	Recovery	
16	122.25%	101.23%	87.52%	103.67%

Standard ID

Thorium-230

Th-230_00003 #6340

Cert # 84460-334 Ref. date 4/11/11

Activity 1079.73 pCi/mL

Orange Beta ACV 2014

Detector	Low Mass Recovery	Medium Mass Recovery	High Mass Recovery	Mean Recovery
16	96.54%	96.80%	97.61%	96.98%

Beta Activity 1958.744 pCi

Standard ID

Strontium 90
Sr-90_00018 #51512
Cert# 92352 Ref. date 11/29/12

Initial Activity:	2238.7	dpm	
Reference Date:	11/29/2012		
Current Date:	2/11/2014		(or date at which you wish to determine activity)
Elapsed Time:	439.000	days	
Half Life:	10409.625	days	
Exponential Term:	0.971191359		
Corrected Activity:	2174.206097	dpm	
Decay Activity (Sr/Y-90)	4348.412193	dpm	1958.744 pCi

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - A

Addr: 16

Sample ID ACVABT-51512;B1 **Repeat** 17

Carrier No. 0

Batch ID M142810

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 2/11/2014 7:54:28 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 2/11/2014 7:59:31 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.088	10	2.000	1.912
sd	0.000			0.009	3.162	0.632	0.633
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.452	9,047	1,809.400	1,808.948
sd	0.000			0.021	95.116	19.023	19.023

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - A

Addr: 16

Sample ID ACVABT-51512;B3

Repeat 23

Carrier No. 0

Batch ID M142810

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 2/11/2014 8:44:18 PM

Count Ended 2/11/2014 8:49:20 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 5.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.088	6	1.200	1.112
sd	0.000			0.009	2.449	0.490	0.490
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.452	8,201	1,640.200	1,639.748
sd	0.000			0.021	90.559	18.112	18.112

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - A

Addr: 16

Sample ID ACVABT-51512;B2

Repeat 24

Carrier No. 0

Batch ID M142810

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 2/11/2014 8:51:52 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 2/11/2014 8:56:54 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.088	8	1.600	1.512
sd	0.000			0.009	2.828	0.566	0.566
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.452	8,557	1,711.400	1,710.948
sd	0.000			0.021	92.504	18.501	18.501

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - A

Addr: 16

Sample ID ACVABT-6340;A1 **Repeat** 17

Carrier No. 0

Batch ID M142808

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 2/12/2014 7:29:27 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 2/12/2014 7:59:31 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 30.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.088	12,389	412.967	412.879
sd	0.000			0.009	111.306	3.710	3.710
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.452	4,309	143.633	143.181
sd	0.000			0.021	65.643	2.188	2.188

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - A

Addr: 16

Sample ID ACVABT-6340;A3

Repeat 23

Carrier No. 0

Batch ID M142808

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 2/12/2014 10:45:29 PM

Count Ended 2/12/2014 11:15:33 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 30.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.088	6,844	228.133	228.045
sd	0.000			0.009	82.728	2.758	2.758
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.452	2,816	93.867	93.415
sd	0.000			0.021	53.066	1.769	1.769

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - A

Addr: 16

Sample ID ACVABT-6340;A2

Repeat 24

Carrier No. 0

Batch ID M142808

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 2/12/2014 11:16:37 PM

Collection Date 1 1/1/1900

Half Life 0.00 ***days***

Count Ended 2/12/2014 11:46:41 PM

Collection Date 2 1/1/1900

Decay Factor 1.000

Sample Count Time 30.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.088	8,678	289.267	289.179
sd	0.000			0.009	93.156	3.105	3.105
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.452	3,390	113.000	112.548
sd	0.000			0.021	58.224	1.941	1.941

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

ICV is for Gross Alpha

Protean Alpha ACV - 2014				
	Low	Medium	High	Mean
	Mass	Mass	Mass	Recovery
Detector	Recovery	Recovery	Recovery	
15	126.05%	105.95%	93.08%	108.36%

Standard ID

Thorium-230
Th-230_00003 #6340
Cert # 84460-334 Ref. date 4/11/11

Activity 1079.73 pCi/mL

ICV is for Gross Beta
Strontium 90
and
Total Strontium

Protean Beta ACV - 2014				
Detector	Low Mass Recovery	Medium Mass Recovery	High Mass Recovery	Mean Recovery
15	97.45%	94.63%	95.81%	95.96%

Beta Activity 1952.884 pCi

Standard ID

Strontium 90
Sr-90_00018 #51512
Cert# 92352 Ref. date 11/29/12

Initial Activity:	2238.7	dpm	
Reference Date:	11/29/2012		
Current Date:	3/28/2014		(or date at which you wish to determine activity)
Elapsed Time:	484.000	days	
Half Life:	10409.625	days	
Exponential Term:	0.968285617		
Corrected Activity:	2167.70101	dpm	
Decay Activity (Sr/Y-90)	4335.402019	dpm	1952.884 pCi

Low Level Alpha/Beta Count Results
Sample Activity Report

Protean 12-15 - D **Address:** ***15***

Sample ID ***ACVABT-51512;B3*** **Repeat** ***14***

Batch ID ***M142810***

Count Routine ***Gross Alpha Beta*** **Detector Volts** ***1,515.0***

Sample Qty 0.000 **sd** 0.000

Residual Wt 0.000 ***mg*** **sd** 0.000 ***mg***

Count Date 3/28/2014 10:45 **Collection Date 1** **Half Life** 0.00 ***days***
Collection Date 2 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	4	0.800	0.732
sd	0.000			0.008	2.000	0.400	0.400
Alpha to Beta	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.507	7,942	1,588.400	1,587.893
sd	0.000			0.023	89.118	17.824	17.824

	Net Activity dpm	LLD dpm	Net Concentration *	MDC	Limits	% of Limits
Alpha	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			
Beta	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			

*** Note: Decay Corrected MDC Method -** **Tb = Ts < 10**
Error = 0.00 **x sd**

Low Level Alpha/Beta Count Results
Sample Activity Report

Protean 12-15 - D **Address:** ***15***

Sample ID ***ACVABT-51512;B2*** **Repeat** ***15***

Batch ID ***M142810***

Count Routine ***Gross Alpha Beta*** **Detector Volts** ***1,515.0***

Sample Qty 0.000 **sd** 0.000

Residual Wt 0.000 ***mg*** **sd** 0.000 ***mg***

Count Date 3/28/2014 10:55 **Collection Date 1** **Half Life** 0.00 ***days***
Collection Date 2 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	0	0.000	-0.068
sd	0.000			0.008	0.000	0.000	0.165
Alpha to Beta	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.507	8,191	1,638.200	1,637.693
sd	0.000			0.023	90.504	18.101	18.101

	Net Activity dpm	LLD dpm	Net Concentration *	MDC	Limits	% of Limits
Alpha	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			
Beta	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			

*** Note: Decay Corrected MDC Method -** **Tb = Ts < 10**
Error = 0.00 **x sd**

Low Level Alpha/Beta Count Results
Sample Activity Report

Protean 12-15 - D **Address:** ***15***

Sample ID ***ACVABT-51512;B1*** **Repeat** ***16***

Batch ID ***M142810***

Count Routine ***Gross Alpha Beta*** **Detector Volts** ***1,515.0***

Sample Qty 0.000 **sd** 0.000

Residual Wt 0.000 ***mg*** **sd** 0.000 ***mg***

Count Date 3/28/2014 11:14 **Collection Date 1** **Half Life** 0.00 ***days***
Collection Date 2 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	3	0.600	0.532
sd	0.000			0.008	1.732	0.346	0.347
Alpha to Beta	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.507	8,871	1,774.200	1,773.693
sd	0.000			0.023	94.186	18.837	18.837

	Net Activity dpm	LLD dpm	Net Concentration *	MDC	Limits	% of Limits
Alpha	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			
Beta	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			

*** Note: Decay Corrected MDC Method -** **Tb = Ts < 10**
Error = 0.00 **x sd**

Low Level Alpha/Beta Count Results
Sample Activity Report

Protean 12-15 - D **Address:** ***15***

Sample ID ***ACVABT-6340;A3*** **Repeat** ***14***

Batch ID ***M142808***

Count Routine ***Gross Alpha Beta*** **Detector Volts** ***1,515.0***

Sample Qty 0.000 **sd** 0.000

Residual Wt 0.000 ***mg*** **sd** 0.000 ***mg***

Count Date 3/31/2014 22:41 **Collection Date 1** **Half Life** 0.00 ***days***
Collection Date 2 **Decay Factor** 1.000

Sample Count Time 30.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	6,968	232.267	232.199
sd	0.000			0.008	83.475	2.782	2.782
Alpha to Beta	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.507	3,169	105.633	105.126
sd	0.000			0.023	56.294	1.876	1.877

	Net Activity dpm	LLD dpm	Net Concentration *	MDC	Limits	% of Limits
Alpha	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			
Beta	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			

*** Note: Decay Corrected MDC Method -** **Tb = Ts < 10**
Error = 0.00 **x sd**

Low Level Alpha/Beta Count Results
Sample Activity Report

Protean 12-15 - D **Address:** ***15***

Sample ID ***ACVABT-6340;A2*** **Repeat** ***15***

Batch ID ***M142808***

Count Routine ***Gross Alpha Beta*** **Detector Volts** ***1,515.0***

Sample Qty 0.000 **sd** 0.000

Residual Wt 0.000 ***mg*** **sd** 0.000 ***mg***

Count Date 3/31/2014 23:13 **Collection Date 1** **Half Life** 0.00 ***days***
Collection Date 2 **Decay Factor** 1.000

Sample Count Time 30.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	8,709	290.300	290.232
sd	0.000			0.008	93.322	3.111	3.111
Alpha to Beta	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.507	3,521	117.367	116.860
sd	0.000			0.023	59.338	1.978	1.978

	Net Activity dpm	LLD dpm	Net Concentration *	MDC	Limits	% of Limits
Alpha	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			
Beta	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			

*** Note: Decay Corrected MDC Method -** **Tb = Ts < 10**
Error = 0.00 **x sd**

Low Level Alpha/Beta Count Results
Sample Activity Report

Protean 12-15 - D **Address:** ***15***

Sample ID ***ACVABT-6340;A1*** **Repeat** ***16***

Batch ID ***M142808***

Count Routine ***Gross Alpha Beta*** **Detector Volts** ***1,515.0***

Sample Qty 0.000 **sd** 0.000

Residual Wt 0.000 ***mg*** **sd** 0.000 ***mg***

Count Date 3/31/2014 23:55 **Collection Date 1** **Half Life** 0.00 ***days***
Collection Date 2 **Decay Factor** 1.000

Sample Count Time 30.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	12,187	406.233	406.165
sd	0.000			0.008	110.395	3.680	3.680
Alpha to Beta	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.507	4,593	153.100	152.593
sd	0.000			0.023	67.772	2.259	2.259

	Net Activity dpm	LLD dpm	Net Concentration *	MDC	Limits	% of Limits
Alpha	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			
Beta	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			

*** Note: Decay Corrected MDC Method -** **Tb = Ts < 10**
Error = 0.00 **x sd**

Monthly Backgrounds

Alpha/Beta Count Results

Source Count Report

Orange 4-7 - A

Addr: 4

Sample ID ICB
ICB;Monthly Background Check

Repeat 765
Carrier No. 0

Batch ID ICB;Monthly Background

Detector Volts 1515

Residual Wt 0 ***mg***
Half Life 0.00 ***Years***
Count Began 11/8/2014 12:53:44 PM
Calibration Date 8/4/2012 9:20:16 AM
Decay Factor 1.000
Count Ended 11/9/2014 5:34:40 AM
Backgrounds From

Sample Count Time 1,000.00 ***mins***
Background Count Time 0.00

	Gross counts	Gross cpm	Background cpm	Net cpm
Alpha	102	0.102	0.000	0.102
sd	10.100	0.010	0.000	0.010
Beta	413	0.413	0.000	0.413
sd	20.322	0.020	0.000	0.020

	Uncorrected DPM	Corrected DPM	Corrected dpm	Efficiency %
Alpha	0.000	0.000	0.000	0.000
sd	0.000	0.000	0.000	0.000
Alpha to Beta				0.000
sd				0.000
Beta	0.000	0.000	0.000	0.000
sd	0.000	0.000	0.000	0.000

Alpha/Beta Count Results

Source Count Report

Orange 4-7 - C

Addr: 6

Sample ID ICB
ICB;Monthly Background Check

Repeat 767

Carrier No. 0

Batch ID ICB;Monthly Background

Detector Volts 1515

Residual Wt 0 ***mg***

Half Life 0.00 ***Years***

Count Began 11/8/2014 12:53:55 PM

Calibration Date 8/4/2012 9:20:16 AM

Decay Factor 1.000

Count Ended 11/9/2014 5:34:52 AM

Backgrounds From

Sample Count Time 1,000.00 ***mins***

Background Count Time 0.00

	Gross counts	Gross cpm	Background cpm	Net cpm
Alpha	154	0.154	0.000	0.154
sd	12.410	0.012	0.000	0.012
Beta	490	0.490	0.000	0.490
sd	22.136	0.022	0.000	0.022

	Uncorrected DPM	Corrected DPM	Corrected dpm	Efficiency %
Alpha	0.000	0.000	0.000	0.000
sd	0.000	0.000	0.000	0.000
Alpha to Beta				0.000
sd				0.000
Beta	0.000	0.000	0.000	0.000
sd	0.000	0.000	0.000	0.000

Alpha/Beta Count Results

Source Count Report

Orange 8-11 - D

Addr: 11

Sample ID ICB
ICB;Monthly Background Check

Repeat 772

Carrier No. 0

Batch ID ICB;Monthly Background

Detector Volts 1515

Residual Wt 0 ***mg***

Half Life 0.00 ***Years***

Count Began 11/8/2014 12:54:28 PM

Calibration Date 8/4/2012 9:20:16 AM

Decay Factor 1.000

Count Ended 11/9/2014 5:35:22 AM

Backgrounds From

Sample Count Time 1,000.00 ***mins***

Background Count Time 0.00

	Gross counts	Gross cpm	Background cpm	Net cpm
Alpha	94	0.094	0.000	0.094
sd	9.695	0.010	0.000	0.010
Beta	571	0.571	0.000	0.571
sd	23.896	0.024	0.000	0.024

	Uncorrected DPM	Corrected DPM	Corrected dpm	Efficiency %
Alpha	0.000	0.000	0.000	0.000
sd	0.000	0.000	0.000	0.000
Alpha to Beta				0.000
sd				0.000
Beta	0.000	0.000	0.000	0.000
sd	0.000	0.000	0.000	0.000

Alpha/Beta Count Results

Source Count Report

Orange 16-19 - A

Addr: 16

Sample ID ICB
ICB;Monthly Background Check

Repeat 777

Carrier No. 0

Batch ID ICB;Monthly Background

Detector Volts 1515

Residual Wt 0 ***mg***

Half Life 0.00 ***Years***

Count Began 11/8/2014 12:55:14 PM

Calibration Date 8/4/2012 9:20:16 AM

Decay Factor 1.000

Count Ended 11/9/2014 5:36:11 AM

Backgrounds From

Sample Count Time 1,000.00 ***mins***

Background Count Time 0.00

	Gross counts	Gross cpm	Background cpm	Net cpm
Alpha	128	0.128	0.000	0.128
sd	11.314	0.011	0.000	0.011
Beta	468	0.468	0.000	0.468
sd	21.633	0.022	0.000	0.022

	Uncorrected DPM	Corrected DPM	Corrected dpm	Efficiency %
Alpha	0.000	0.000	0.000	0.000
sd	0.000	0.000	0.000	0.000
Alpha to Beta				0.000
sd				0.000
Beta	0.000	0.000	0.000	0.000
sd	0.000	0.000	0.000	0.000

Low Level Alpha/Beta Count Results
Sample Activity Report

Protean 12-15 - D **Address:** ***15***

Sample ID ***ICB; 15*** **Repeat** ***9***

Batch ID ***99140039***

Count Routine ***Gross Alpha Beta*** **Detector Volts** ***1,515.0***

Sample Qty 0.000 **sd** 0.000

Residual Wt 0.000 ***mg*** **sd** 0.000 ***mg***

Count Date 11/8/2014 12:24 **Collection Date 1** **Half Life** 0.00 ***days***
Collection Date 2 **Decay Factor** 1.000

Sample Count Time 1,000.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.074	88	0.088	0.014
sd	0.000			0.009	9.381	0.009	0.013
Alpha to Beta	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.452	490	0.490	0.038
sd	0.000			0.021	22.136	0.022	0.031

	Net Activity dpm	LLD dpm	Net Concentration *	MDC	Limits	% of Limits
Alpha	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			
Beta	0.000	0.000	0.000 ± 0.000	0.000	1.000	0.000
sd	0.000		0.000			

*** Note: Decay Corrected MDC Method -** **Tb = Ts < 10**
Error = 0.00 **x sd**

Run Logs

Gas Flow Proportional Counter Run Log

Detector: Orange4

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
01/23/13 14:45	5	ICABT 160-63209/15		63209			JLW
01/23/13 14:53	5	ICABT 160-63209/16		63209			JLW
01/23/13 15:00	5	ICABT 160-63209/17		63209			JLW
01/23/13 15:09	5	ICABT 160-63209/18		63209			JLW
01/23/13 15:18	5	ICABT 160-63209/19		63209			JLW
01/23/13 15:27	5	ICABT 160-63209/20		63209			JLW
01/23/13 15:37	5	ICABT 160-63209/21		63209			JLW
01/23/13 15:46	5	ICABT 160-63209/22		63209			JLW
01/24/13 18:10	5	ICVABT 160-63209/23		63209			JLW
01/24/13 18:25	5	ICVABT 160-63209/24		63209			JLW
01/24/13 18:33	5	ICVABT 160-63209/25		63209			JLW
07/18/13 07:30	40	ZZZZZ		63209			
07/18/13 09:23	40	ZZZZZ		63209			
07/18/13 15:43	40	ICABT 160-63209/3		63209			JLW
07/18/13 16:37	40	ZZZZZ		63209			
07/18/13 17:29	40	ICABT 160-63209/5		63209			JLW
07/18/13 18:30	40	ICABT 160-63209/6		63209			JLW
07/18/13 19:58	40	ICABT 160-63209/7		63209			JLW
07/18/13 21:01	40	ICABT 160-63209/8		63209			JLW
07/18/13 21:52	40	ICABT 160-63209/9		63209			JLW
07/18/13 22:47	40	ICABT 160-63209/10		63209			JLW
07/23/13 16:41	50	ICABT 160-63209/11		63209			JLW
07/24/13 08:56	30	ICVABT 160-63209/12		63209			JLW
07/24/13 09:49	30	ICVABT 160-63209/13		63209			JLW
07/24/13 10:43	30	ICVABT 160-63209/14		63209			JLW
02/11/14 17:41	5	ACVABT 160-106019/1		106019			LES
02/11/14 17:47	5	ACVABT 160-106019/2		106019			LES
02/11/14 17:54	5	ACVABT 160-106019/3		106019			LES
02/11/14 19:39	30	ACVABT 160-106019/4		106019			LES
02/11/14 20:19	30	ACVABT 160-106019/5		106019			LES
02/11/14 20:51	30	ACVABT 160-106019/6		106019			LES
11/08/14 12:53	1000	ICB 160-155149/5		155149			PS
11/23/14 14:01	200	CCB 160-159374/5		159374			AS1
11/23/14 19:10	2	CCVA 160-159374/28		159374			AS1
11/23/14 19:14	2	CCVB 160-159374/52		159374			AS1
11/23/14 19:35	200	MB 160-158146/1-A		159374	158146	9310	AS1

Detector: Orange6

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
01/23/13 14:45	5	ICABT 160-63211/16		63211			JLW
01/23/13 14:53	5	ICABT 160-63211/17		63211			JLW
01/23/13 15:01	5	ICABT 160-63211/18		63211			JLW
01/23/13 15:09	5	ICABT 160-63211/19		63211			JLW
01/23/13 15:19	5	ICABT 160-63211/20		63211			JLW
01/23/13 15:26	5	ICABT 160-63211/21		63211			JLW
01/23/13 15:37	5	ICABT 160-63211/22		63211			JLW
01/23/13 15:46	5	ICABT 160-63211/23		63211			JLW
01/24/13 18:10	5	ICVABT 160-63211/24		63211			JLW
01/24/13 18:16	5	ICVABT 160-63211/25		63211			JLW
01/24/13 18:25	5	ICVABT 160-63211/26		63211			JLW
07/18/13 07:30	40	ZZZZZ		63211			
07/18/13 09:23	40	ZZZZZ		63211			

Gas Flow Proportional Counter Run Log

Detector: Orange6 (Continued)

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
07/18/13 15:44	40	ICABT 160-63211/3		63211			JLW
07/18/13 16:37	40	ICABT 160-63211/4		63211			JLW
07/18/13 17:29	40	ICABT 160-63211/5		63211			JLW
07/18/13 18:31	40	ZZZZZ		63211			
07/18/13 19:58	40	ZZZZZ		63211			
07/18/13 21:01	40	ICABT 160-63211/8		63211			JLW
07/18/13 21:52	40	ICABT 160-63211/9		63211			JLW
07/18/13 22:47	40	ICABT 160-63211/10		63211			JLW
07/23/13 16:41	50	ICABT 160-63211/11		63211			JLW
07/23/13 18:58	50	ICABT 160-63211/12		63211			JLW
07/24/13 11:45	30	ICVABT 160-63211/13		63211			JLW
07/24/13 15:13	30	ICVABT 160-63211/14		63211			JLW
07/24/13 15:46	30	ICVABT 160-63211/15		63211			JLW
02/11/14 17:54	5	ACVABT 160-106021/1		106021			LES
02/11/14 18:01	5	ACVABT 160-106021/2		106021			LES
02/11/14 18:09	5	ACVABT 160-106021/3		106021			LES
02/11/14 20:51	30	ACVABT 160-106021/4		106021			LES
02/11/14 21:24	30	ACVABT 160-106021/5		106021			LES
02/11/14 21:55	30	ACVABT 160-106021/6		106021			LES
11/08/14 12:53	1000	ICB 160-155149/7		155149			PS
11/23/14 14:01	200	CCB 160-159374/7		159374			AS1
11/23/14 19:10	2	CCVA 160-159374/30		159374			AS1
11/23/14 19:15	2	CCVB 160-159374/54		159374			AS1
11/23/14 19:35	200	LCS 160-158146/2-A		159374	158146	9310	AS1

Detector: Orange8

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
01/23/13 14:27	5	ICABT 160-63213/12		63213			JLW
01/23/13 14:37	5	ICABT 160-63213/13		63213			JLW
01/23/13 16:47	5	ICABT 160-63213/14		63213			JLW
01/23/13 16:58	5	ICABT 160-63213/15		63213			JLW
01/23/13 17:05	5	ICABT 160-63213/16		63213			JLW
01/23/13 17:12	5	ICABT 160-63213/17		63213			JLW
01/23/13 17:19	5	ICABT 160-63213/18		63213			JLW
01/23/13 17:27	5	ICABT 160-63213/19		63213			JLW
01/24/13 19:31	5	ICVABT 160-63213/20		63213			JLW
01/24/13 19:38	5	ICVABT 160-63213/21		63213			JLW
01/24/13 19:49	5	ICVABT 160-63213/22		63213			JLW
07/24/13 08:46	50	ICABT 160-63213/1		63213			JLW
07/24/13 09:53	50	ICABT 160-63213/2		63213			JLW
07/24/13 10:46	50	ICABT 160-63213/3		63213			JLW
07/24/13 11:45	50	ICABT 160-63213/4		63213			JLW
07/24/13 15:14	50	ICABT 160-63213/5		63213			JLW
07/24/13 16:36	50	ICABT 160-63213/6		63213			JLW
07/24/13 17:29	50	ICABT 160-63213/7		63213			JLW
07/24/13 18:31	50	ICABT 160-63213/8		63213			JLW
07/24/13 19:26	30	ICVABT 160-63213/9		63213			JLW
07/24/13 23:21	30	ICVABT 160-63213/10		63213			JLW
07/24/13 23:54	30	ICVABT 160-63213/11		63213			JLW
02/11/14 18:29	5	ACVABT 160-106023/1		106023			LES
02/11/14 19:38	5	ACVABT 160-106023/2		106023			LES
02/11/14 19:46	5	ACVABT 160-106023/3		106023			LES

Gas Flow Proportional Counter Run Log

Detector: Orange8 (Continued)

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
02/11/14 22:58	30	ACVABT 160-106023/4		106023			LES
02/12/14 09:26	30	ACVABT 160-106023/5		106023			LES
02/12/14 11:36	30	ACVABT 160-106023/6		106023			LES
11/08/14 12:54	1000	ICB 160-155149/9		155149			PS

Detector: Orange10

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
01/23/13 14:27	5	ICABT 160-63215/12		63215			JLW
01/23/13 14:36	5	ICABT 160-63215/13		63215			JLW
01/23/13 16:46	5	ICABT 160-63215/14		63215			JLW
01/23/13 16:58	5	ICABT 160-63215/15		63215			JLW
01/23/13 17:05	5	ICABT 160-63215/16		63215			JLW
01/23/13 17:12	5	ICABT 160-63215/17		63215			JLW
01/23/13 17:19	5	ICABT 160-63215/18		63215			JLW
01/23/13 17:27	5	ICABT 160-63215/19		63215			JLW
01/24/13 18:41	5	ICVABT 160-63215/20		63215			JLW
01/24/13 18:47	5	ICVABT 160-63215/21		63215			JLW
01/24/13 18:56	5	ICVABT 160-63215/22		63215			JLW
07/24/13 08:47	50	ICABT 160-63215/1		63215			JLW
07/24/13 09:53	50	ICABT 160-63215/2		63215			JLW
07/24/13 10:45	50	ICABT 160-63215/3		63215			JLW
07/24/13 11:46	50	ICABT 160-63215/4		63215			JLW
07/24/13 15:14	50	ICABT 160-63215/5		63215			JLW
07/24/13 16:37	50	ICABT 160-63215/6		63215			JLW
07/24/13 17:29	50	ICABT 160-63215/7		63215			JLW
07/24/13 18:31	50	ICABT 160-63215/8		63215			JLW
07/24/13 19:26	30	ICVABT 160-63215/9		63215			JLW
07/24/13 20:19	30	ICVABT 160-63215/10		63215			JLW
07/24/13 20:51	30	ICVABT 160-63215/11		63215			JLW
02/11/14 18:29	5	ACVABT 160-106024/1		106024			LES
02/11/14 18:35	5	ACVABT 160-106024/2		106024			LES
02/11/14 19:04	5	ACVABT 160-106024/3		106024			LES
02/11/14 22:59	30	ACVABT 160-106024/4		106024			LES
02/11/14 23:30	30	ACVABT 160-106024/5		106024			LES
02/12/14 09:27	30	ACVABT 160-106024/6		106024			LES
11/08/14 12:54	1000	ICB 160-155149/11		155149			PS

Detector: Orange11

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
01/23/13 14:27	5	ICABT 160-63216/12		63216			JLW
01/23/13 14:36	5	ICABT 160-63216/13		63216			JLW
01/23/13 16:46	5	ICABT 160-63216/14		63216			JLW
01/23/13 16:58	5	ICABT 160-63216/15		63216			JLW
01/23/13 17:05	5	ICABT 160-63216/16		63216			JLW
01/23/13 17:12	5	ICABT 160-63216/17		63216			JLW
01/23/13 17:19	5	ICABT 160-63216/18		63216			JLW
01/23/13 17:27	5	ICABT 160-63216/19		63216			JLW
01/24/13 19:32	5	ICVABT 160-63216/20		63216			JLW
01/24/13 19:38	5	ICVABT 160-63216/21		63216			JLW
01/24/13 19:50	5	ICVABT 160-63216/22		63216			JLW
07/24/13 08:47	50	ICABT 160-63216/1		63216			JLW

Gas Flow Proportional Counter Run Log

Detector: Orange11 (Continued)

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
07/24/13 09:53	50	ICABT 160-63216/2		63216			JLW
07/24/13 10:45	50	ICABT 160-63216/3		63216			JLW
07/24/13 11:45	50	ICABT 160-63216/4		63216			JLW
07/24/13 15:14	50	ICABT 160-63216/5		63216			JLW
07/24/13 16:37	50	ICABT 160-63216/6		63216			JLW
07/24/13 17:29	50	ICABT 160-63216/7		63216			JLW
07/24/13 18:32	50	ICABT 160-63216/8		63216			JLW
07/24/13 20:19	30	ICVABT 160-63216/9		63216			JLW
07/24/13 20:51	30	ICVABT 160-63216/10		63216			JLW
07/24/13 21:31	30	ICVABT 160-63216/11		63216			JLW
02/11/14 18:35	5	ACVABT 160-106026/1		106026			LES
02/11/14 19:04	5	ACVABT 160-106026/2		106026			LES
02/11/14 19:11	5	ACVABT 160-106026/3		106026			LES
02/11/14 23:30	30	ACVABT 160-106026/4		106026			LES
02/12/14 11:36	30	ZZZZZ		106026			
02/12/14 12:24	30	ACVABT 160-106026/6		106026			LES
02/19/14 11:49	30	ACVABT 160-106026/7		106026			LES
11/08/14 12:54	1000	ICB 160-155149/12		155149			PS
11/23/14 14:02	200	CCB 160-159374/12		159374			AS1
11/23/14 19:10	2	CCVB 160-159374/35		159374			AS1
11/23/14 19:14	2	CCVA 160-159374/43		159374			AS1
11/23/14 19:35	200	LCSB 160-158146/3-A		159374	158146	9310	AS1

Detector: Orange16

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
01/23/13 12:20	5	ICABT 160-63221/12		63221			JLW
01/23/13 12:29	5	ICABT 160-63221/13		63221			JLW
01/23/13 12:38	5	ICABT 160-63221/14		63221			JLW
01/23/13 12:46	5	ICABT 160-63221/15		63221			JLW
01/23/13 12:53	5	ICABT 160-63221/16		63221			JLW
01/23/13 13:00	5	ICABT 160-63221/17		63221			JLW
01/23/13 13:07	5	ICABT 160-63221/18		63221			JLW
01/23/13 13:14	5	ICABT 160-63221/19		63221			JLW
01/24/13 21:41	5	ICVABT 160-63221/20		63221			JLW
01/24/13 21:54	5	ICVABT 160-63221/21		63221			JLW
01/24/13 22:01	5	ICVABT 160-63221/22		63221			JLW
07/24/13 19:26	50	ICABT 160-63221/1		63221			JLW
07/24/13 20:19	50	ICABT 160-63221/2		63221			JLW
07/24/13 21:31	50	ICABT 160-63221/3		63221			JLW
07/24/13 22:35	50	ICABT 160-63221/4		63221			JLW
07/24/13 23:29	50	ICABT 160-63221/5		63221			JLW
07/25/13 07:04	50	ICABT 160-63221/6		63221			JLW
07/25/13 08:55	50	ICABT 160-63221/7		63221			JLW
07/25/13 09:50	50	ICABT 160-63221/8		63221			JLW
07/25/13 10:59	30	ICVABT 160-63221/9		63221			JLW
07/25/13 12:06	30	ICVABT 160-63221/10		63221			JLW
07/25/13 12:39	30	ICVABT 160-63221/11		63221			JLW
02/11/14 19:54	5	ACVABT 160-106031/1		106031			LES
02/11/14 20:44	5	ACVABT 160-106031/2		106031			LES
02/11/14 20:51	5	ACVABT 160-106031/3		106031			LES
02/12/14 19:29	30	ACVABT 160-106031/4		106031			LES
02/12/14 22:45	30	ACVABT 160-106031/5		106031			LES

Gas Flow Proportional Counter Run Log

Detector: Orange16 (Continued)

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
02/12/14 23:16	30	ACVABT 160-106031/6		106031			LES
11/08/14 12:55	1000	ICB 160-155149/17		155149			PS
11/23/14 14:02	200	CCB 160-159374/16		159374			AS1
11/23/14 19:17	2	CCVA 160-159374/56		159374			AS1
11/23/14 19:21	2	CCVB 160-159374/64		159374			AS1
11/23/14 19:36	200	160-9438-2	MW359-20141113-21	159374	158146	9310	AS1

Detector: Protean15

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
03/27/13 09:26	1.01	ICABT 160-80803/13		80803			LES
03/27/13 09:35	1.01	ICABT 160-80803/14		80803			LES
03/27/13 09:48	1.01	ICABT 160-80803/15		80803			LES
03/27/13 09:55	1.01	ICABT 160-80803/16		80803			LES
03/27/13 10:05	1.01	ICABT 160-80803/17		80803			LES
03/27/13 10:13	1.01	ICABT 160-80803/18		80803			LES
03/27/13 10:20	1.01	ICABT 160-80803/19		80803			LES
03/27/13 10:27	1.01	ICABT 160-80803/20		80803			LES
03/28/13 23:53	5	ICVABT 160-80803/21		80803			LES
03/28/13 23:59	5	ICVABT 160-80803/22		80803			LES
03/29/13 00:05	5	ICVABT 160-80803/23		80803			LES
08/09/13 13:35	50	ZZZZZ		80803			
08/09/13 14:52	50	ICABT 160-80803/2		80803			LES
08/09/13 16:37	50	ICABT 160-80803/3		80803			LES
08/09/13 17:43	50	ICABT 160-80803/4		80803			LES
08/11/13 20:22	50	ICABT 160-80803/5		80803			LES
08/11/13 22:18	50	ICABT 160-80803/6		80803			LES
08/11/13 23:10	50	ICABT 160-80803/7		80803			LES
08/12/13 10:46	50	ICABT 160-80803/8		80803			LES
08/12/13 17:54	50	ICABT 160-80803/9		80803			LES
08/18/13 17:31	30	ICVABT 160-80803/10		80803			LES
08/18/13 18:08	30	ICVABT 160-80803/11		80803			LES
08/18/13 18:45	30	ICVABT 160-80803/12		80803			LES
03/28/14 10:45	5	ACVABT 160-114325/1		114325			PS
03/28/14 10:55	5	ACVABT 160-114325/2		114325			PS
03/28/14 11:14	5	ACVABT 160-114325/3		114325			PS
03/31/14 22:41	30	ACVABT 160-114325/4		114325			PS
03/31/14 23:13	30	ACVABT 160-114325/5		114325			PS
03/31/14 23:55	30	ACVABT 160-114325/6		114325			PS
11/08/14 12:24	1000	ICB 160-155151/16		155151			PS
11/25/14 00:01	2	CCVB 160-159787/59		159787			
11/25/14 00:07	2	CCVA 160-159787/43		159787			
11/25/14 00:16	200	CCB 160-159787/24		159787			
11/25/14 07:52	200	160-9438-1	MW358-20141113-21	159787	158146	9310	AS1
11/25/14 15:07	200	ZZZZZ		159787			

Shipping and Receiving Documents

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
Phone (314) 298-8566 Fax (314) 298-8757

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: S. Boesch	Lab PM: Gish, Erika K	Carrier Tracking No(s):	COC No: 160-1932-952.1
Client Contact: Mrs. Kristie Warr	Phone: (512) 633-9522	E-Mail: erika.gish@testamericainc.com		Page: Page 1 of 1
Company: Weston Solutions, Inc.				Job #:
Address: 5599 San Felipe Suite 700	Due Date Requested:			
City: Houston	TAT Requested (days):			
State, Zip: TX, 77056				
Phone: 713-985-6636(Tel) 713-985-6703(Fax)	PO #: Purchase Order Requested			
Email: k.warr@westonsolutions.com	WO #: 20406.012.035.0846.03			
Project Name: START Site in New Mexico	Project #: 16003713			
Site: Grants, NM	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2SO3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - ph 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	TAL Metals/Hg	Total Uranium	Anions/Alkalinity/TDS/plt	Alpha Spec Uranium Isotopes	Alpha Spec Thorium Isotopes	RA-226	Ra-228	Gross Alpha/Beta	Dissolved TAL Metals/Hg	Total Uranium	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	D	N	D	D	D	D	D	N			
MW358-20141113-21	11/13/14	1205	G	W	N	N	X	X	X	X	X	X	X	X	X		8	
MW359-20141113-21	11/13/14	1345	G	W	N	N	X	X	X	X	X	X	X	X	X		8	

160-9438 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
S. Boesch	11/13/14 1430	WESTON		11/14/14 0920	TA STL
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

Login Sample Receipt Checklist

Client: Weston Solutions, Inc.

Job Number: 160-9438-1

Login Number: 9438

List Source: TestAmerica St. Louis

List Number: 1

Creator: Clarke, Jill C

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 160-9451-1

Job Description: START Site in New Mexico

For:
Weston Solutions, Inc.
5599 San Felipe
Suite 700
Houston, TX 77056

Attention: Mrs. Kristie Warr

Approved for release.
Erika K Gish
Project Manager II
2/18/2015 12:31 PM

Erika K Gish, Project Manager II
13715 Rider Trail North, Earth City, MO, 63045
(314)298-8566
erika.gish@testamericainc.com
02/18/2015
Revision: 1

The test results in this report meet NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted. Results pertain only to samples listed in this report. Pursuant to NELAP, this report shall not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of TestAmerica and its client. All questions regarding this report should be directed to the TestAmerica Project Manager.

Louisiana Lab Certification ID (Non-Potable, Solid/Haz. Material): 106151
Florida Lab Certification ID (Drinking Water): E87689.

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Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.
F1	MS and/or MSD Recovery exceeds the control limits
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F2	MS/MSD RPD exceeds control limits
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC exceeds the control limits.

General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
F1	MS and/or MSD Recovery exceeds the control limits

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.
G	The Sample MDC is greater than the requested RL.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

CASE NARRATIVE

Client: Weston Solutions, Inc.

Project: START Site in New Mexico

Report Number: 160-9451-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

TestAmerica St. Louis attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

Revision 1: Report was revised to correct wording in the narrative statement for CCV 160-161515/85.

RECEIPT

The samples were received on 11/15/2014 8:45 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.6º C.

DISSOLVED METALS (ICP)

Samples BG03-20141114-21 (160-9451-1), BG04-20141114-21 (160-9451-2), BG05-20141114-21 (160-9451-3) and N1-20141114-21 (160-9451-4) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 12/02/2014 and analyzed on 12/05/2014.

Analytical Batch 161515

The following sample(s) was diluted to bring the concentration of target analytes within the calibration range: (160-9451-1 MS), (160-9451-1 MSD), (160-9451-1 SD), BG03-20141114-21 (160-9451-1), BG04-20141114-21 (160-9451-2), BG05-20141114-21 (160-9451-3). Elevated reporting limits (RLs) are provided.

Lead was detected in method blank LB 160-157827/1-B at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged.

The matrix spike duplicate (MSD) recovery for aluminum were outside control limits. Sample matrix interference are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Due to the high concentration of calcium and silicon the matrix spike / matrix spike duplicate (MS/MSD) could not be evaluated for accuracy and precision. The presence of the '4' qualifier in the data indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount. The associated laboratory control sample (LCS) met acceptance criteria.

The continuing calibration verification (CCV) associated recovered above the upper control limit for calcium, nickel, phosphorus, lead, tin, and thallium. The samples associated with this CCV were either non-detect or below the reporting limit for the affected analytes; therefore, the data have been reported: (CCV 160-161515/85).

The sample results for aluminum (sample 1) and iron (sample 4) were observed outside the dissolved verses total criteria. All other elements were within QC limits, indicating that this is an anomaly due to matrix interference.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL METALS (ICP)

Samples BG03-20141114-21 (160-9451-1), BG04-20141114-21 (160-9451-2), BG05-20141114-21 (160-9451-3) and N1-20141114-21 (160-9451-4) were analyzed for total metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 11/24/2014 and analyzed on 11/26/2014.

Analytical Batch 160013

The following sample(s) was diluted to bring the concentration of target analytes within the calibration range: (160-9451-1 MS), (160-9451-1 MSD), (160-9451-1 SD), BG03-20141114-21 (160-9451-1), BG04-20141114-21 (160-9451-2), BG05-20141114-21 (160-9451-3). Elevated reporting limits (RLs) are provided.

Thallium, Uranium and Zinc were detected in method blank MB 160-159156/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged.

The matrix spike duplicate (MSD) recovery for uranium were outside control limits. Sample matrix interference are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Due to the high concentration of calcium and silicon the matrix spike / matrix spike duplicate (MS/MSD) could not be evaluated for accuracy and precision. The presence of the '4' qualifier in the data indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount. The associated laboratory control sample (LCS) met acceptance criteria.

The matrix spike and/or matrix spike duplicate (MS/MSD) percent recovery and precision for aluminum, iron, and potassium was outside control limits. Sample matrix interference are suspected because the MS\MSD precision for all other target elements was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

DISSOLVED MERCURY (CVAA)

Samples BG03-20141114-21 (160-9451-1), BG04-20141114-21 (160-9451-2), BG05-20141114-21 (160-9451-3) and N1-20141114-21 (160-9451-4) were analyzed for dissolved mercury (CVAA) in accordance with EPA SW-846 Methods 7470A. The samples were prepared on 12/05/2014 and analyzed on 12/06/2014.

No additional analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

TOTAL MERCURY

Samples BG03-20141114-21 (160-9451-1), BG04-20141114-21 (160-9451-2), BG05-20141114-21 (160-9451-3) and N1-20141114-21 (160-9451-4) were analyzed for total mercury in accordance with EPA SW-846 Methods 7470A. The samples were prepared on 12/03/2014 and analyzed on 12/04/2014.

No additional analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

PH

Samples BG03-20141114-21 (160-9451-1), BG04-20141114-21 (160-9451-2), BG05-20141114-21 (160-9451-3) and N1-20141114-21 (160-9451-4) were analyzed for pH in accordance with EPA Method 150.1. The samples were analyzed on 12/01/2014.

The following samples in pH batch 160158 are flagged with an "HF" flag, to indicate that the hold time for pH is immediate and expired in the field: BG03-20141114-21 (160-9451-1), BG04-20141114-21 (160-9451-2), BG05-20141114-21 (160-9451-3), N1-20141114-21 (160-9451-4).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL DISSOLVED SOLIDS

Samples BG03-20141114-21 (160-9451-1), BG04-20141114-21 (160-9451-2), BG05-20141114-21 (160-9451-3) and N1-20141114-21 (160-9451-4) were analyzed for total dissolved solids in accordance with EPA Method 160.1. The samples were analyzed on 11/20/2014.

No additional analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

ANIONS

Samples BG03-20141114-21 (160-9451-1), BG04-20141114-21 (160-9451-2), BG05-20141114-21 (160-9451-3) and N1-20141114-21 (160-9451-4) were analyzed for anions in accordance with EPA Method 300.0. The samples were analyzed on 11/15/2014 and 11/18/2014.

Analytical Batch 157774

The following samples were diluted to bring the concentration of target analytes within the calibration range: (280-61815-4),

943-20141117-22 (160-9490-4), BG04-20141114-21 (160-9451-2). Elevated reporting limits (RLs) are provided.

Analytical Batch 158759
The following samples were diluted to bring the concentration of target analytes within the calibration range: B2Y9H2 (160-9453-1), BG03-20141114-21 (160-9451-1), BG04-20141114-21 (160-9451-2). Elevated reporting limits (RLs) are provided.

The matrix spike (MS) recovery for Nitrite was outside the upper control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ALKALINITY
Samples BG03-20141114-21 (160-9451-1), BG04-20141114-21 (160-9451-2), BG05-20141114-21 (160-9451-3) and N1-20141114-21 (160-9451-4) were analyzed for alkalinity in accordance with EPA Method 310.1. The samples were analyzed on 11/21/2014.

Alkalinity and Bicarbonate Alkalinity as CaCO3 were detected in method blank MB 160-158800/1 at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GROSS ALPHA AND GROSS BETA RADIOACTIVITY
Samples BG03-20141114-21 (160-9451-1), BG04-20141114-21 (160-9451-2), BG05-20141114-21 (160-9451-3) and N1-20141114-21 (160-9451-4) were analyzed for Gross Alpha and Gross Beta Radioactivity in accordance with SW-846 Method 9310. The samples were prepared on 11/19/2014 and analyzed on 11/23/2014.

The gross alpha and beta detection goal was not met for the following samples due to a reduction of the sample size attiributed to high residual mass:BG03-20141114-21 (160-9451-1), BG04-20141114-21 (160-9451-2), BG05-20141114-21 (160-9451-3). Analytical results are reported with the detection limit achieved.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ISOTOPIC THORIUM (ALPHA SPECTROMETRY)
Samples BG03-20141114-21 (160-9451-1), BG04-20141114-21 (160-9451-2), BG05-20141114-21 (160-9451-3) and N1-20141114-21 (160-9451-4) were analyzed for Isotopic Thorium (Alpha Spectrometry) in accordance with DOE. The samples were prepared on 11/19/2014 and analyzed on 11/23/2014.

Samples BG03-20141114-21 (160-9451-1), BG04-20141114-21 (160-9451-2), BG05-20141114-21 (160-9451-3) were reduced due to the samples containing a large amount of sediment.

The follwing thorium samples did not meet the detection goal due to the reduced sample volume; BG03-20141114-21 (160-9451-1), BG04-20141114-21 (160-9451-2). The data have been qualified and reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ISOTOPIC URANIUM (ALPHA SPECTROMETRY)
Samples BG03-20141114-21 (160-9451-1), BG04-20141114-21 (160-9451-2), BG05-20141114-21 (160-9451-3) and N1-20141114-21 (160-9451-4) were analyzed for Isotopic Uranium (Alpha Spectrometry) in accordance with DOE. The samples were prepared on 11/19/2014 and analyzed on 11/21/2014.

Samples BG03-20141114-21 (160-9451-1), BG04-20141114-21 (160-9451-2), BG05-20141114-21 (160-9451-3) were reduced due to the samples containing a large amount of sediment.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Weston Solutions, Inc.
Project/Site: START Site in New Mexico

TestAmerica Job ID: 160-9451-1

Client Sample ID: BG03-20141114-21 — Lab Sample ID: 160-9451-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	3700		2000	220	ug/L	10		6010C	Total/NA
Barium	640		500	21	ug/L	10		6010C	Total/NA
Calcium	64000		10000	540	ug/L	10		6010C	Total/NA
Copper	25	J	250	21	ug/L	10		6010C	Total/NA
Iron	5100		1000	130	ug/L	10		6010C	Total/NA
Lead	15	J	100	6.0	ug/L	10		6010C	Total/NA
Magnesium	8800	J	10000	510	ug/L	10		6010C	Total/NA
Manganese	580		150	10	ug/L	10		6010C	Total/NA
Phosphorus	210	J	2500	140	ug/L	10		6010C	Total/NA
Sodium	22000		10000	1100	ug/L	10		6010C	Total/NA
Thallium	27	J B	200	24	ug/L	10		6010C	Total/NA
Zinc	94	J B	200	83	ug/L	10		6010C	Total/NA
Silicon	27000		4000	200	ug/L	10		6010C	Total/NA
Uranium	500	J B	5000	260	ug/L	10		6010C	Total/NA
Aluminum	5100		2000	220	ug/L	10		6010C	Dissolved
Barium	320	J	500	21	ug/L	10		6010C	Dissolved
Boron	83	J	500	72	ug/L	10		6010C	Dissolved
Calcium	58000		10000	540	ug/L	10		6010C	Dissolved
Copper	29	J	250	21	ug/L	10		6010C	Dissolved
Iron	4500		1000	130	ug/L	10		6010C	Dissolved
Lead	17	J B	100	6.0	ug/L	10		6010C	Dissolved
Magnesium	8000	J	10000	510	ug/L	10		6010C	Dissolved
Manganese	170		150	10	ug/L	10		6010C	Dissolved
Potassium	4900	J	50000	4600	ug/L	10		6010C	Dissolved
Silicon	29000		4000	200	ug/L	10		6010C	Dissolved
Sodium	21000		10000	1100	ug/L	10		6010C	Dissolved
Titanium	59	J	200	13	ug/L	10		6010C	Dissolved
Mercury	0.26		0.20	0.060	ug/L	1		7470A	Total/NA
pH	7.54	HF	0.100	0.100	SU	1		150.1	Total/NA
Total Dissolved Solids (TDS)	620		5.0	3.5	mg/L	1		160.1	Total/NA
Nitrate as N	0.059		0.020	0.0040	mg/L	1		300.0	Total/NA
Fluoride	0.97		0.10	0.010	mg/L	1		300.0	Total/NA
Bromide	0.13	J	0.25	0.025	mg/L	1		300.0	Total/NA
Alkalinity	380	B	5.0	0.54	mg/L	1		310.1	Total/NA
Bicarbonate Alkalinity as CaCO3	380	B	5.0	0.54	mg/L	1		310.1	Total/NA
Chloride - DL	13		10	1.0	mg/L	50		300.0	Total/NA
Sulfate - DL	76		25	2.5	mg/L	50		300.0	Total/NA

Client Sample ID: BG04-20141114-21 — Lab Sample ID: 160-9451-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	2500		2000	220	ug/L	10		6010C	Total/NA
Barium	400	J	500	21	ug/L	10		6010C	Total/NA
Calcium	73000		10000	540	ug/L	10		6010C	Total/NA
Copper	36	J	250	21	ug/L	10		6010C	Total/NA
Iron	3900		1000	130	ug/L	10		6010C	Total/NA
Lead	8.0	J	100	6.0	ug/L	10		6010C	Total/NA
Magnesium	10000		10000	510	ug/L	10		6010C	Total/NA
Manganese	480		150	10	ug/L	10		6010C	Total/NA
Selenium	23	J	150	21	ug/L	10		6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: BG04-20141114-21 (Continued) — Lab Sample ID: 160-9451-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Phosphorus	280	J	2500	140	ug/L	10		6010C	Total/NA
Sodium	31000		10000	1100	ug/L	10		6010C	Total/NA
Thallium	30	J B	200	24	ug/L	10		6010C	Total/NA
Silicon	28000		4000	200	ug/L	10		6010C	Total/NA
Titanium	32	J	200	13	ug/L	10		6010C	Total/NA
Uranium	280	J B	5000	260	ug/L	10		6010C	Total/NA
Aluminum	370	J	2000	220	ug/L	10		6010C	Dissolved
Barium	170	J	500	21	ug/L	10		6010C	Dissolved
Calcium	59000		10000	540	ug/L	10		6010C	Dissolved
Iron	400	J	1000	130	ug/L	10		6010C	Dissolved
Lead	17	J B	100	6.0	ug/L	10		6010C	Dissolved
Magnesium	6900	J	10000	510	ug/L	10		6010C	Dissolved
Manganese	45	J	150	10	ug/L	10		6010C	Dissolved
Silicon	17000		4000	200	ug/L	10		6010C	Dissolved
Sodium	22000		10000	1100	ug/L	10		6010C	Dissolved
Mercury	0.33		0.20	0.060	ug/L	1		7470A	Total/NA
pH	7.22	HF	0.100	0.100	SU	1		150.1	Total/NA
Total Dissolved Solids (TDS)	350		5.0	3.5	mg/L	1		160.1	Total/NA
Nitrate as N	0.028		0.020	0.0040	mg/L	1		300.0	Total/NA
Fluoride	0.34		0.10	0.010	mg/L	1		300.0	Total/NA
Bromide	0.047	J	0.25	0.025	mg/L	1		300.0	Total/NA
Alkalinity	230	B	5.0	0.54	mg/L	1		310.1	Total/NA
Bicarbonate Alkalinity as CaCO3	230	B	5.0	0.54	mg/L	1		310.1	Total/NA
Chloride - DL	11		10	1.0	mg/L	50		300.0	Total/NA
Sulfate - DL	22		5.0	0.50	mg/L	10		300.0	Total/NA

Client Sample ID: BG05-20141114-21 — Lab Sample ID: 160-9451-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	1200	J	2000	220	ug/L	10		6010C	Total/NA
Barium	120	J	500	21	ug/L	10		6010C	Total/NA
Boron	100	J	500	72	ug/L	10		6010C	Total/NA
Calcium	56000		10000	540	ug/L	10		6010C	Total/NA
Iron	1500		1000	130	ug/L	10		6010C	Total/NA
Magnesium	11000		10000	510	ug/L	10		6010C	Total/NA
Manganese	160		150	10	ug/L	10		6010C	Total/NA
Sodium	120000		10000	1100	ug/L	10		6010C	Total/NA
Silicon	17000		4000	200	ug/L	10		6010C	Total/NA
Aluminum	700	J	2000	220	ug/L	10		6010C	Dissolved
Barium	83	J	500	21	ug/L	10		6010C	Dissolved
Boron	120	J	500	72	ug/L	10		6010C	Dissolved
Calcium	56000		10000	540	ug/L	10		6010C	Dissolved
Iron	650	J	1000	130	ug/L	10		6010C	Dissolved
Lead	15	J B	100	6.0	ug/L	10		6010C	Dissolved
Magnesium	11000		10000	510	ug/L	10		6010C	Dissolved
Manganese	99	J	150	10	ug/L	10		6010C	Dissolved
Silicon	14000		4000	200	ug/L	10		6010C	Dissolved
Sodium	110000		10000	1100	ug/L	10		6010C	Dissolved
Titanium	13	J	200	13	ug/L	10		6010C	Dissolved
Mercury	0.35		0.20	0.060	ug/L	1		7470A	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: BG05-20141114-21 (Continued)

Lab Sample ID: 160-9451-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
pH	7.41	HF	0.100	0.100	SU	1		150.1	Total/NA
Total Dissolved Solids (TDS)	310		5.0	3.5	mg/L	1		160.1	Total/NA
Nitrate as N	0.017	J	0.020	0.0040	mg/L	1		300.0	Total/NA
Fluoride	0.38		0.10	0.010	mg/L	1		300.0	Total/NA
Chloride	5.0		0.20	0.020	mg/L	1		300.0	Total/NA
Sulfate	13		0.50	0.050	mg/L	1		300.0	Total/NA
Alkalinity	140	B	5.0	0.54	mg/L	1		310.1	Total/NA
Bicarbonate Alkalinity as CaCO3	140	B	5.0	0.54	mg/L	1		310.1	Total/NA

Client Sample ID: N1-20141114-21

Lab Sample ID: 160-9451-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	150	J	1000	54	ug/L	1		6010C	Total/NA
Iron	61	J	100	13	ug/L	1		6010C	Total/NA
Manganese	1.1	J	15	1.0	ug/L	1		6010C	Total/NA
Vanadium	4.4	J	50	4.4	ug/L	1		6010C	Total/NA
Silicon	31	J	400	20	ug/L	1		6010C	Total/NA
Calcium	110	J ^	1000	54	ug/L	1		6010C	Dissolved
Iron	120		100	13	ug/L	1		6010C	Dissolved
Lead	0.90	J B ^	10	0.60	ug/L	1		6010C	Dissolved
Manganese	1.3	J	15	1.0	ug/L	1		6010C	Dissolved
Silicon	25	J	400	20	ug/L	1		6010C	Dissolved
Mercury	0.19	J	0.20	0.060	ug/L	1		7470A	Total/NA
pH	5.73	HF	0.100	0.100	SU	1		150.1	Total/NA
Chloride	0.098	J	0.20	0.020	mg/L	1		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: BG03-20141114-21

Date Collected: 11/14/14 10:30
Date Received: 11/15/14 08:45

Lab Sample ID: 160-9451-1

Matrix: Water

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**3700**		2000	220	ug/L		11/24/14 08:24	11/26/14 10:57	10
Antimony	ND		100	37	ug/L		11/24/14 08:24	11/26/14 10:57	10
Arsenic	ND		100	18	ug/L		11/24/14 08:24	11/26/14 10:57	10
Barium	**640**		500	21	ug/L		11/24/14 08:24	11/26/14 10:57	10
Boron	ND		500	72	ug/L		11/24/14 08:24	11/26/14 10:57	10
Beryllium	ND		50	2.8	ug/L		11/24/14 08:24	11/26/14 10:57	10
Cadmium	ND		50	3.4	ug/L		11/24/14 08:24	11/26/14 10:57	10
Calcium	**64000**		10000	540	ug/L		11/24/14 08:24	11/26/14 10:57	10
Chromium	ND		100	34	ug/L		11/24/14 08:24	11/26/14 10:57	10
Cobalt	ND		500	27	ug/L		11/24/14 08:24	11/26/14 10:57	10
Copper	**25**	**J**	250	21	ug/L		11/24/14 08:24	11/26/14 10:57	10
Iron	**5100**		1000	130	ug/L		11/24/14 08:24	11/26/14 10:57	10
Lead	**15**	**J**	100	6.0	ug/L		11/24/14 08:24	11/26/14 10:57	10
Magnesium	**8800**	**J**	10000	510	ug/L		11/24/14 08:24	11/26/14 10:57	10
Manganese	**580**		150	10	ug/L		11/24/14 08:24	11/26/14 10:57	10
Nickel	ND		400	26	ug/L		11/24/14 08:24	11/26/14 10:57	10
Molybdenum	ND		400	19	ug/L		11/24/14 08:24	11/26/14 10:57	10
Potassium	ND		50000	4600	ug/L		11/24/14 08:24	11/26/14 10:57	10
Selenium	ND		150	21	ug/L		11/24/14 08:24	11/26/14 10:57	10
Silver	ND		100	9.9	ug/L		11/24/14 08:24	11/26/14 10:57	10
Phosphorus	**210**	**J**	2500	140	ug/L		11/24/14 08:24	11/26/14 10:57	10
Sodium	**22000**		10000	1100	ug/L		11/24/14 08:24	11/26/14 10:57	10
Thallium	**27**	**J B**	200	24	ug/L		11/24/14 08:24	11/26/14 10:57	10
Vanadium	ND		500	44	ug/L		11/24/14 08:24	11/26/14 10:57	10
Zinc	**94**	**J B**	200	83	ug/L		11/24/14 08:24	11/26/14 10:57	10
Silicon	**27000**		4000	200	ug/L		11/24/14 08:24	11/26/14 10:57	10
Tin	ND		1000	50	ug/L		11/24/14 08:24	11/26/14 10:57	10
Titanium	ND		200	13	ug/L		11/24/14 08:24	11/26/14 10:57	10
Uranium	**500**	**J B**	5000	260	ug/L		11/24/14 08:24	11/26/14 10:57	10

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**5100**		2000	220	ug/L		12/02/14 13:02	12/05/14 16:45	10
Antimony	ND		100	37	ug/L		12/02/14 13:02	12/05/14 16:45	10
Arsenic	ND		100	18	ug/L		12/02/14 13:02	12/05/14 16:45	10
Barium	**320**	**J**	500	21	ug/L		12/02/14 13:02	12/05/14 16:45	10
Beryllium	ND		50	2.8	ug/L		12/02/14 13:02	12/05/14 16:45	10
Boron	**83**	**J**	500	72	ug/L		12/02/14 13:02	12/05/14 16:45	10
Cadmium	ND		50	3.4	ug/L		12/02/14 13:02	12/05/14 16:45	10
Calcium	**58000**		10000	540	ug/L		12/02/14 13:02	12/05/14 16:45	10
Chromium	ND		100	34	ug/L		12/02/14 13:02	12/05/14 16:45	10
Cobalt	ND		500	27	ug/L		12/02/14 13:02	12/05/14 16:45	10
Copper	**29**	**J**	250	21	ug/L		12/02/14 13:02	12/05/14 16:45	10
Iron	**4500**		1000	130	ug/L		12/02/14 13:02	12/05/14 16:45	10
Lead	**17**	**J B**	100	6.0	ug/L		12/02/14 13:02	12/05/14 16:45	10
Magnesium	**8000**	**J**	10000	510	ug/L		12/02/14 13:02	12/05/14 16:45	10
Manganese	**170**		150	10	ug/L		12/02/14 13:02	12/05/14 16:45	10
Molybdenum	ND		400	19	ug/L		12/02/14 13:02	12/05/14 16:45	10
Nickel	ND		400	26	ug/L		12/02/14 13:02	12/05/14 16:45	10

Client Sample ID: BG03-20141114-21

Date Collected: 11/14/14 10:30
Date Received: 11/15/14 08:45

Lab Sample ID: 160-9451-1

Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phosphorus	ND		2500	140	ug/L		12/02/14 13:02	12/05/14 16:45	10
Potassium	**4900**	**J**	50000	4600	ug/L		12/02/14 13:02	12/05/14 16:45	10
Selenium	ND		150	21	ug/L		12/02/14 13:02	12/05/14 16:45	10
Silicon	**29000**		4000	200	ug/L		12/02/14 13:02	12/05/14 16:45	10
Silver	ND		100	9.9	ug/L		12/02/14 13:02	12/05/14 16:45	10
Sodium	**21000**		10000	1100	ug/L		12/02/14 13:02	12/05/14 16:45	10
Thallium	ND		200	24	ug/L		12/02/14 13:02	12/05/14 16:45	10
Tin	ND		1000	50	ug/L		12/02/14 13:02	12/05/14 16:45	10
Titanium	**59**	**J**	200	13	ug/L		12/02/14 13:02	12/05/14 16:45	10
Uranium	ND		5000	260	ug/L		12/02/14 13:02	12/05/14 16:45	10
Vanadium	ND		500	44	ug/L		12/02/14 13:02	12/05/14 16:45	10
Zinc	ND		200	83	ug/L		12/02/14 13:02	12/05/14 16:45	10

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.26**		0.20	0.060	ug/L		12/03/14 15:51	12/04/14 10:35	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.060	ug/L		12/05/14 13:47	12/06/14 14:01	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.54**	**HF**	0.100	0.100	SU			12/01/14 12:33	1
Total Dissolved Solids (TDS)	**620**		5.0	3.5	mg/L			11/20/14 08:30	1
Nitrate as N	**0.059**		0.020	0.0040	mg/L			11/15/14 20:21	1
Nitrite as N	ND		0.020	0.0030	mg/L			11/15/14 20:21	1
Fluoride	**0.97**		0.10	0.010	mg/L			11/15/14 20:21	1
Bromide	**0.13**	**J**	0.25	0.025	mg/L			11/15/14 20:21	1
Orthophosphate	ND		0.50	0.078	mg/L			11/15/14 20:21	1
Alkalinity	**380**	**B**	5.0	0.54	mg/L			11/21/14 14:46	1
Bicarbonate Alkalinity as CaCO3	**380**	**B**	5.0	0.54	mg/L			11/21/14 14:46	1
Carbonate Alkalinity as CaCO3	ND		5.0	0.54	mg/L			11/21/14 14:46	1

General Chemistry - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**13**		10	1.0	mg/L			11/15/14 20:35	50
Sulfate	**76**		25	2.5	mg/L			11/15/14 20:35	50

Method: 9310 - Gross Alpha / Beta (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	**51.0**	**G**	13.6	14.8	3.00	14.4	pCi/L	11/19/14 12:09	11/23/14 19:36	1
Gross Beta	**41.5**	**G**	6.49	7.70	4.00	6.46	pCi/L	11/19/14 12:09	11/23/14 19:36	1

Method: A-01-R - Isotopic Thorium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Thorium-228	0.809	U G	0.932	0.934	1.00	1.51	pCi/L	11/19/14 11:12	11/23/14 22:34	1

Client Sample ID: BG03-20141114-21

Lab Sample ID: 160-9451-1

Date Collected: 11/14/14 10:30

Matrix: Water

Date Received: 11/15/14 08:45

Method: A-01-R - Isotopic Thorium (Alpha Spectrometry) (Continued)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Thorium-230	**1.35**		0.805	0.813	1.00	0.779	pCi/L	11/19/14 11:12	11/23/14 22:34	1
Thorium-232	**0.587**		0.522	0.525	1.00	0.581	pCi/L	11/19/14 11:12	11/23/14 22:34	1
Thorium-227	0.632	U G	0.762	0.764	1.00	1.24	pCi/L	11/19/14 11:12	11/23/14 22:34	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Thorium-229	*83.6*		*30 - 110*	*11/19/14 11:12*	*11/23/14 22:34*	*1*

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Uranium-233/234	**1.91**		0.953	0.966	1.00	0.635	pCi/L	11/19/14 11:12	11/21/14 16:13	1
Uranium-235/236	0.000	U	0.119	0.119	1.00	0.429	pCi/L	11/19/14 11:12	11/21/14 16:13	1
Uranium-238	**1.05**		0.738	0.743	1.00	0.754	pCi/L	11/19/14 11:12	11/21/14 16:13	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*72.3*		*30 - 110*	*11/19/14 11:12*	*11/21/14 16:13*	*1*

Client Sample ID: BG04-20141114-21

Lab Sample ID: 160-9451-2

Date Collected: 11/14/14 11:10

Matrix: Water

Date Received: 11/15/14 08:45

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**2500**		2000	220	ug/L		11/24/14 08:24	11/26/14 11:13	10
Antimony	ND		100	37	ug/L		11/24/14 08:24	11/26/14 11:13	10
Arsenic	ND		100	18	ug/L		11/24/14 08:24	11/26/14 11:13	10
Barium	**400**	**J**	500	21	ug/L		11/24/14 08:24	11/26/14 11:13	10
Boron	ND		500	72	ug/L		11/24/14 08:24	11/26/14 11:13	10
Beryllium	ND		50	2.8	ug/L		11/24/14 08:24	11/26/14 11:13	10
Cadmium	ND		50	3.4	ug/L		11/24/14 08:24	11/26/14 11:13	10
Calcium	**73000**		10000	540	ug/L		11/24/14 08:24	11/26/14 11:13	10
Chromium	ND		100	34	ug/L		11/24/14 08:24	11/26/14 11:13	10
Cobalt	ND		500	27	ug/L		11/24/14 08:24	11/26/14 11:13	10
Copper	**36**	**J**	250	21	ug/L		11/24/14 08:24	11/26/14 11:13	10
Iron	**3900**		1000	130	ug/L		11/24/14 08:24	11/26/14 11:13	10
Lead	**8.0**	**J**	100	6.0	ug/L		11/24/14 08:24	11/26/14 11:13	10
Magnesium	**10000**		10000	510	ug/L		11/24/14 08:24	11/26/14 11:13	10
Manganese	**480**		150	10	ug/L		11/24/14 08:24	11/26/14 11:13	10
Nickel	ND		400	26	ug/L		11/24/14 08:24	11/26/14 11:13	10
Molybdenum	ND		400	19	ug/L		11/24/14 08:24	11/26/14 11:13	10
Potassium	ND		50000	4600	ug/L		11/24/14 08:24	11/26/14 11:13	10
Selenium	**23**	**J**	150	21	ug/L		11/24/14 08:24	11/26/14 11:13	10
Silver	ND		100	9.9	ug/L		11/24/14 08:24	11/26/14 11:13	10
Phosphorus	**280**	**J**	2500	140	ug/L		11/24/14 08:24	11/26/14 11:13	10
Sodium	**31000**		10000	1100	ug/L		11/24/14 08:24	11/26/14 11:13	10
Thallium	**30**	**J B**	200	24	ug/L		11/24/14 08:24	11/26/14 11:13	10
Vanadium	ND		500	44	ug/L		11/24/14 08:24	11/26/14 11:13	10

Client Sample ID: BG04-20141114-21

Date Collected: 11/14/14 11:10
Date Received: 11/15/14 08:45

Lab Sample ID: 160-9451-2

Matrix: Water

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	ND		200	83	ug/L		11/24/14 08:24	11/26/14 11:13	10
Silicon	**28000**		4000	200	ug/L		11/24/14 08:24	11/26/14 11:13	10
Tin	ND		1000	50	ug/L		11/24/14 08:24	11/26/14 11:13	10
Titanium	**32**	**J**	200	13	ug/L		11/24/14 08:24	11/26/14 11:13	10
Uranium	**280**	**J B**	5000	260	ug/L		11/24/14 08:24	11/26/14 11:13	10

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**370**	**J**	2000	220	ug/L		12/02/14 13:02	12/05/14 17:00	10
Antimony	ND		100	37	ug/L		12/02/14 13:02	12/05/14 17:00	10
Arsenic	ND		100	18	ug/L		12/02/14 13:02	12/05/14 17:00	10
Barium	**170**	**J**	500	21	ug/L		12/02/14 13:02	12/05/14 17:00	10
Beryllium	ND		50	2.8	ug/L		12/02/14 13:02	12/05/14 17:00	10
Boron	ND		500	72	ug/L		12/02/14 13:02	12/05/14 17:00	10
Cadmium	ND		50	3.4	ug/L		12/02/14 13:02	12/05/14 17:00	10
Calcium	**59000**		10000	540	ug/L		12/02/14 13:02	12/05/14 17:00	10
Chromium	ND		100	34	ug/L		12/02/14 13:02	12/05/14 17:00	10
Cobalt	ND		500	27	ug/L		12/02/14 13:02	12/05/14 17:00	10
Copper	ND		250	21	ug/L		12/02/14 13:02	12/05/14 17:00	10
Iron	**400**	**J**	1000	130	ug/L		12/02/14 13:02	12/05/14 17:00	10
Lead	**17**	**J B**	100	6.0	ug/L		12/02/14 13:02	12/05/14 17:00	10
Magnesium	**6900**	**J**	10000	510	ug/L		12/02/14 13:02	12/05/14 17:00	10
Manganese	**45**	**J**	150	10	ug/L		12/02/14 13:02	12/05/14 17:00	10
Molybdenum	ND		400	19	ug/L		12/02/14 13:02	12/05/14 17:00	10
Nickel	ND		400	26	ug/L		12/02/14 13:02	12/05/14 17:00	10
Phosphorus	ND		2500	140	ug/L		12/02/14 13:02	12/05/14 17:00	10
Potassium	ND		50000	4600	ug/L		12/02/14 13:02	12/05/14 17:00	10
Selenium	ND		150	21	ug/L		12/02/14 13:02	12/05/14 17:00	10
Silicon	**17000**		4000	200	ug/L		12/02/14 13:02	12/05/14 17:00	10
Silver	ND		100	9.9	ug/L		12/02/14 13:02	12/05/14 17:00	10
Sodium	**22000**		10000	1100	ug/L		12/02/14 13:02	12/05/14 17:00	10
Thallium	ND		200	24	ug/L		12/02/14 13:02	12/05/14 17:00	10
Tin	ND		1000	50	ug/L		12/02/14 13:02	12/05/14 17:00	10
Titanium	ND		200	13	ug/L		12/02/14 13:02	12/05/14 17:00	10
Uranium	ND		5000	260	ug/L		12/02/14 13:02	12/05/14 17:00	10
Vanadium	ND		500	44	ug/L		12/02/14 13:02	12/05/14 17:00	10
Zinc	ND		200	83	ug/L		12/02/14 13:02	12/05/14 17:00	10

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.33**		0.20	0.060	ug/L		12/03/14 15:51	12/04/14 10:38	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.060	ug/L		12/05/14 13:47	12/06/14 14:04	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.22**	**HF**	0.100	0.100	SU			12/01/14 12:33	1
Total Dissolved Solids (TDS)	**350**		5.0	3.5	mg/L			11/20/14 08:30	1

Client Sample ID: BG04-20141114-21

Lab Sample ID: 160-9451-2

Date Collected: 11/14/14 11:10

Matrix: Water

Date Received: 11/15/14 08:45

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	**0.028**		0.020	0.0040	mg/L			11/15/14 21:17	1
Nitrite as N	ND		0.020	0.0030	mg/L			11/15/14 21:17	1
Fluoride	**0.34**		0.10	0.010	mg/L			11/15/14 21:17	1
Bromide	**0.047**	**J**	0.25	0.025	mg/L			11/15/14 21:17	1
Orthophosphate	ND		0.50	0.078	mg/L			11/15/14 21:17	1
Alkalinity	**230**	**B**	5.0	0.54	mg/L			11/21/14 14:46	1
Bicarbonate Alkalinity as CaCO3	**230**	**B**	5.0	0.54	mg/L			11/21/14 14:46	1
Carbonate Alkalinity as CaCO3	ND		5.0	0.54	mg/L			11/21/14 14:46	1

General Chemistry - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**11**		10	1.0	mg/L			11/15/14 21:31	50
Sulfate	**22**		5.0	0.50	mg/L			11/18/14 16:52	10

Method: 9310 - Gross Alpha / Beta (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	**18.2**	**G**	5.56	5.93	3.00	5.95	pCi/L	11/19/14 12:09	11/23/14 19:36	1
Gross Beta	**17.1**		2.85	3.33	4.00	2.86	pCi/L	11/19/14 12:09	11/23/14 19:36	1

Method: A-01-R - Isotopic Thorium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Thorium-228	**1.40**		0.841	0.849	1.00	0.969	pCi/L	11/19/14 11:12	11/23/14 22:34	1
Thorium-230	**2.01**		0.876	0.892	1.00	0.287	pCi/L	11/19/14 11:12	11/23/14 22:34	1
Thorium-232	0.111	U	0.291	0.292	1.00	0.625	pCi/L	11/19/14 11:12	11/23/14 22:34	1
Thorium-227	0.0953	U G	0.542	0.542	1.00	1.12	pCi/L	11/19/14 11:12	11/23/14 22:34	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Thorium-229	*88.5*		*30 - 110*	*11/19/14 11:12*	*11/23/14 22:34*	*1*

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Uranium-233/234	**2.57**		1.12	1.14	1.00	0.835	pCi/L	11/19/14 11:12	11/21/14 16:13	1
Uranium-235/236	0.141	U	0.282	0.282	1.00	0.422	pCi/L	11/19/14 11:12	11/21/14 16:13	1
Uranium-238	0.649	U	0.619	0.622	1.00	0.833	pCi/L	11/19/14 11:12	11/21/14 16:13	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*74.4*		*30 - 110*	*11/19/14 11:12*	*11/21/14 16:13*	*1*

Client Sample ID: BG05-20141114-21

Lab Sample ID: 160-9451-3

Date Collected: 11/14/14 11:45

Matrix: Water

Date Received: 11/15/14 08:45

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**1200**	**J**	2000	220	ug/L		11/24/14 08:24	11/26/14 11:17	10

Client Sample ID: BG05-20141114-21

Date Collected: 11/14/14 11:45
Date Received: 11/15/14 08:45

Lab Sample ID: 160-9451-3

Matrix: Water

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		100	37	ug/L		11/24/14 08:24	11/26/14 11:17	10
Arsenic	ND		100	18	ug/L		11/24/14 08:24	11/26/14 11:17	10
Barium	**120**	**J**	500	21	ug/L		11/24/14 08:24	11/26/14 11:17	10
Boron	**100**	**J**	500	72	ug/L		11/24/14 08:24	11/26/14 11:17	10
Beryllium	ND		50	2.8	ug/L		11/24/14 08:24	11/26/14 11:17	10
Cadmium	ND		50	3.4	ug/L		11/24/14 08:24	11/26/14 11:17	10
Calcium	**56000**		10000	540	ug/L		11/24/14 08:24	11/26/14 11:17	10
Chromium	ND		100	34	ug/L		11/24/14 08:24	11/26/14 11:17	10
Cobalt	ND		500	27	ug/L		11/24/14 08:24	11/26/14 11:17	10
Copper	ND		250	21	ug/L		11/24/14 08:24	11/26/14 11:17	10
Iron	**1500**		1000	130	ug/L		11/24/14 08:24	11/26/14 11:17	10
Lead	ND		100	6.0	ug/L		11/24/14 08:24	11/26/14 11:17	10
Magnesium	**11000**		10000	510	ug/L		11/24/14 08:24	11/26/14 11:17	10
Manganese	**160**		150	10	ug/L		11/24/14 08:24	11/26/14 11:17	10
Nickel	ND		400	26	ug/L		11/24/14 08:24	11/26/14 11:17	10
Molybdenum	ND		400	19	ug/L		11/24/14 08:24	11/26/14 11:17	10
Potassium	ND		50000	4600	ug/L		11/24/14 08:24	11/26/14 11:17	10
Selenium	ND		150	21	ug/L		11/24/14 08:24	11/26/14 11:17	10
Silver	ND		100	9.9	ug/L		11/24/14 08:24	11/26/14 11:17	10
Phosphorus	ND		2500	140	ug/L		11/24/14 08:24	11/26/14 11:17	10
Sodium	**120000**		10000	1100	ug/L		11/24/14 08:24	11/26/14 11:17	10
Thallium	ND		200	24	ug/L		11/24/14 08:24	11/26/14 11:17	10
Vanadium	ND		500	44	ug/L		11/24/14 08:24	11/26/14 11:17	10
Zinc	ND		200	83	ug/L		11/24/14 08:24	11/26/14 11:17	10
Silicon	**17000**		4000	200	ug/L		11/24/14 08:24	11/26/14 11:17	10
Tin	ND		1000	50	ug/L		11/24/14 08:24	11/26/14 11:17	10
Titanium	ND		200	13	ug/L		11/24/14 08:24	11/26/14 11:17	10
Uranium	ND		5000	260	ug/L		11/24/14 08:24	11/26/14 11:17	10

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**700**	**J**	2000	220	ug/L		12/02/14 13:04	12/05/14 17:04	10
Antimony	ND		100	37	ug/L		12/02/14 13:04	12/05/14 17:04	10
Arsenic	ND		100	18	ug/L		12/02/14 13:04	12/05/14 17:04	10
Barium	**83**	**J**	500	21	ug/L		12/02/14 13:04	12/05/14 17:04	10
Beryllium	ND		50	2.8	ug/L		12/02/14 13:04	12/05/14 17:04	10
Boron	**120**	**J**	500	72	ug/L		12/02/14 13:04	12/05/14 17:04	10
Cadmium	ND		50	3.4	ug/L		12/02/14 13:04	12/05/14 17:04	10
Calcium	**56000**		10000	540	ug/L		12/02/14 13:04	12/05/14 17:04	10
Chromium	ND		100	34	ug/L		12/02/14 13:04	12/05/14 17:04	10
Cobalt	ND		500	27	ug/L		12/02/14 13:04	12/05/14 17:04	10
Copper	ND		250	21	ug/L		12/02/14 13:04	12/05/14 17:04	10
Iron	**650**	**J**	1000	130	ug/L		12/02/14 13:04	12/05/14 17:04	10
Lead	**15**	**J B**	100	6.0	ug/L		12/02/14 13:04	12/05/14 17:04	10
Magnesium	**11000**		10000	510	ug/L		12/02/14 13:04	12/05/14 17:04	10
Manganese	**99**	**J**	150	10	ug/L		12/02/14 13:04	12/05/14 17:04	10
Molybdenum	ND		400	19	ug/L		12/02/14 13:04	12/05/14 17:04	10
Nickel	ND		400	26	ug/L		12/02/14 13:04	12/05/14 17:04	10
Phosphorus	ND		2500	140	ug/L		12/02/14 13:04	12/05/14 17:04	10
Potassium	ND		50000	4600	ug/L		12/02/14 13:04	12/05/14 17:04	10

Client Sample ID: BG05-20141114-21

Date Collected: 11/14/14 11:45
Date Received: 11/15/14 08:45

Lab Sample ID: 160-9451-3

Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	ND		150	21	ug/L		12/02/14 13:04	12/05/14 17:04	10
Silicon	**14000**		4000	200	ug/L		12/02/14 13:04	12/05/14 17:04	10
Silver	ND		100	9.9	ug/L		12/02/14 13:04	12/05/14 17:04	10
Sodium	**110000**		10000	1100	ug/L		12/02/14 13:04	12/05/14 17:04	10
Thallium	ND		200	24	ug/L		12/02/14 13:04	12/05/14 17:04	10
Tin	ND		1000	50	ug/L		12/02/14 13:04	12/05/14 17:04	10
Titanium	**13**	**J**	200	13	ug/L		12/02/14 13:04	12/05/14 17:04	10
Uranium	ND		5000	260	ug/L		12/02/14 13:04	12/05/14 17:04	10
Vanadium	ND		500	44	ug/L		12/02/14 13:04	12/05/14 17:04	10
Zinc	ND		200	83	ug/L		12/02/14 13:04	12/05/14 17:04	10

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.35**		0.20	0.060	ug/L		12/03/14 15:51	12/04/14 10:40	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.060	ug/L		12/05/14 13:47	12/06/14 14:06	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.41**	**HF**	0.100	0.100	SU			12/01/14 12:33	1
Total Dissolved Solids (TDS)	**310**		5.0	3.5	mg/L			11/20/14 08:30	1
Nitrate as N	**0.017**	**J**	0.020	0.0040	mg/L			11/15/14 21:45	1
Nitrite as N	ND		0.020	0.0030	mg/L			11/15/14 21:45	1
Fluoride	**0.38**		0.10	0.010	mg/L			11/15/14 21:45	1
Chloride	**5.0**		0.20	0.020	mg/L			11/15/14 21:45	1
Bromide	ND		0.25	0.025	mg/L			11/15/14 21:45	1
Sulfate	**13**		0.50	0.050	mg/L			11/15/14 21:45	1
Orthophosphate	ND		0.50	0.078	mg/L			11/15/14 21:45	1
Alkalinity	**140**	**B**	5.0	0.54	mg/L			11/21/14 14:46	1
Bicarbonate Alkalinity as CaCO3	**140**	**B**	5.0	0.54	mg/L			11/21/14 14:46	1
Carbonate Alkalinity as CaCO3	ND		5.0	0.54	mg/L			11/21/14 14:46	1

Method: 9310 - Gross Alpha / Beta (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	**13.5**	**G**	4.40	4.66	3.00	4.50	pCi/L	11/19/14 12:09	11/23/14 19:37	1
Gross Beta	**4.36**		1.92	1.97	4.00	2.62	pCi/L	11/19/14 12:09	11/23/14 19:37	1

Method: A-01-R - Isotopic Thorium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Thorium-228	0.429	U	0.473	0.474	1.00	0.759	pCi/L	11/19/14 11:12	11/23/14 22:34	1
Thorium-230	**1.85**		0.626	0.645	1.00	0.288	pCi/L	11/19/14 11:12	11/23/14 22:34	1
Thorium-232	**0.155**		0.179	0.180	1.00	0.155	pCi/L	11/19/14 11:12	11/23/14 22:34	1
Thorium-227	0.0605	U	0.319	0.319	1.00	0.646	pCi/L	11/19/14 11:12	11/23/14 22:34	1

Client Sample ID: BG05-20141114-21

Lab Sample ID: 160-9451-3

Date Collected: 11/14/14 11:45

Matrix: Water

Date Received: 11/15/14 08:45

Tracer	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Thorium-229	85.7		30 - 110	11/19/14 11:12	11/23/14 22:34	1

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Uranium-233/234	**6.71**		1.19	1.31	1.00	0.289	pCi/L	11/19/14 11:12	11/21/14 16:13	1
Uranium-235/236	**0.325**		0.290	0.292	1.00	0.195	pCi/L	11/19/14 11:12	11/21/14 16:13	1
Uranium-238	**4.51**		0.973	1.04	1.00	0.288	pCi/L	11/19/14 11:12	11/21/14 16:13	1

Tracer	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Uranium-232	83.6		30 - 110	11/19/14 11:12	11/21/14 16:13	1

Client Sample ID: N1-20141114-21

Lab Sample ID: 160-9451-4

Date Collected: 11/14/14 12:45

Matrix: Water

Date Received: 11/15/14 08:45

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		200	22	ug/L		11/24/14 08:24	11/26/14 11:55	1
Antimony	ND		10	3.7	ug/L		11/24/14 08:24	11/26/14 11:55	1
Arsenic	ND		10	1.8	ug/L		11/24/14 08:24	11/26/14 11:55	1
Barium	ND		50	2.1	ug/L		11/24/14 08:24	11/26/14 11:55	1
Boron	ND		50	7.2	ug/L		11/24/14 08:24	11/26/14 11:55	1
Beryllium	ND		5.0	0.28	ug/L		11/24/14 08:24	11/26/14 11:55	1
Cadmium	ND		5.0	0.34	ug/L		11/24/14 08:24	11/26/14 11:55	1
Calcium	**150**	**J**	1000	54	ug/L		11/24/14 08:24	11/26/14 11:55	1
Chromium	ND		10	3.4	ug/L		11/24/14 08:24	11/26/14 11:55	1
Cobalt	ND		50	2.7	ug/L		11/24/14 08:24	11/26/14 11:55	1
Copper	ND		25	2.1	ug/L		11/24/14 08:24	11/26/14 11:55	1
Iron	**61**	**J**	100	13	ug/L		11/24/14 08:24	11/26/14 11:55	1
Lead	ND		10	0.60	ug/L		11/24/14 08:24	11/26/14 11:55	1
Magnesium	ND		1000	51	ug/L		11/24/14 08:24	11/26/14 11:55	1
Manganese	**1.1**	**J**	15	1.0	ug/L		11/24/14 08:24	11/26/14 11:55	1
Nickel	ND		40	2.6	ug/L		11/24/14 08:24	11/26/14 11:55	1
Molybdenum	ND		40	1.9	ug/L		11/24/14 08:24	11/26/14 11:55	1
Potassium	ND		5000	460	ug/L		11/24/14 08:24	11/26/14 11:55	1
Selenium	ND		15	2.1	ug/L		11/24/14 08:24	11/26/14 11:55	1
Silver	ND		10	0.99	ug/L		11/24/14 08:24	11/26/14 11:55	1
Phosphorus	ND		250	14	ug/L		11/24/14 08:24	11/26/14 11:55	1
Sodium	ND		1000	110	ug/L		11/24/14 08:24	11/26/14 11:55	1
Thallium	ND		20	2.4	ug/L		11/24/14 08:24	11/26/14 11:55	1
Vanadium	**4.4**	**J**	50	4.4	ug/L		11/24/14 08:24	11/26/14 11:55	1
Zinc	ND		20	8.3	ug/L		11/24/14 08:24	11/26/14 11:55	1
Silicon	**31**	**J**	400	20	ug/L		11/24/14 08:24	11/26/14 11:55	1
Tin	ND		100	5.0	ug/L		11/24/14 08:24	11/26/14 11:55	1
Titanium	ND		20	1.3	ug/L		11/24/14 08:24	11/26/14 11:55	1
Uranium	ND		500	26	ug/L		11/24/14 08:24	11/26/14 11:55	1

Client Sample ID: N1-20141114-21

Date Collected: 11/14/14 12:45
Date Received: 11/15/14 08:45

Lab Sample ID: 160-9451-4

Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		200	22	ug/L		12/02/14 13:04	12/05/14 17:16	1
Antimony	ND		10	3.7	ug/L		12/02/14 13:04	12/05/14 17:16	1
Arsenic	ND		10	1.8	ug/L		12/02/14 13:04	12/05/14 17:16	1
Barium	ND		50	2.1	ug/L		12/02/14 13:04	12/05/14 17:16	1
Beryllium	ND		5.0	0.28	ug/L		12/02/14 13:04	12/05/14 17:16	1
Boron	ND		50	7.2	ug/L		12/02/14 13:04	12/05/14 17:16	1
Cadmium	ND		5.0	0.34	ug/L		12/02/14 13:04	12/05/14 17:16	1
Calcium	**110**	**J ^**	1000	54	ug/L		12/02/14 13:04	12/05/14 17:16	1
Chromium	ND		10	3.4	ug/L		12/02/14 13:04	12/05/14 17:16	1
Cobalt	ND		50	2.7	ug/L		12/02/14 13:04	12/05/14 17:16	1
Copper	ND		25	2.1	ug/L		12/02/14 13:04	12/05/14 17:16	1
Iron	**120**		100	13	ug/L		12/02/14 13:04	12/05/14 17:16	1
Lead	**0.90**	**J B ^**	10	0.60	ug/L		12/02/14 13:04	12/05/14 17:16	1
Magnesium	ND		1000	51	ug/L		12/02/14 13:04	12/05/14 17:16	1
Manganese	**1.3**	**J**	15	1.0	ug/L		12/02/14 13:04	12/05/14 17:16	1
Molybdenum	ND		40	1.9	ug/L		12/02/14 13:04	12/05/14 17:16	1
Nickel	ND	^	40	2.6	ug/L		12/02/14 13:04	12/05/14 17:16	1
Phosphorus	ND	^	250	14	ug/L		12/02/14 13:04	12/05/14 17:16	1
Potassium	ND		5000	460	ug/L		12/02/14 13:04	12/05/14 17:16	1
Selenium	ND		15	2.1	ug/L		12/02/14 13:04	12/05/14 17:16	1
Silicon	**25**	**J**	400	20	ug/L		12/02/14 13:04	12/05/14 17:16	1
Silver	ND		10	0.99	ug/L		12/02/14 13:04	12/05/14 17:16	1
Sodium	ND		1000	110	ug/L		12/02/14 13:04	12/05/14 17:16	1
Thallium	ND	^	20	2.4	ug/L		12/02/14 13:04	12/05/14 17:16	1
Tin	ND	^	100	5.0	ug/L		12/02/14 13:04	12/05/14 17:16	1
Titanium	ND		20	1.3	ug/L		12/02/14 13:04	12/05/14 17:16	1
Uranium	ND		500	26	ug/L		12/02/14 13:04	12/05/14 17:16	1
Vanadium	ND		50	4.4	ug/L		12/02/14 13:04	12/05/14 17:16	1
Zinc	ND		20	8.3	ug/L		12/02/14 13:04	12/05/14 17:16	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.19**	**J**	0.20	0.060	ug/L		12/03/14 15:51	12/04/14 10:42	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.060	ug/L		12/05/14 13:47	12/06/14 14:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**5.73**	**HF**	0.100	0.100	SU			12/01/14 12:33	1
Total Dissolved Solids (TDS)	ND		5.0	3.5	mg/L			11/20/14 08:30	1
Nitrate as N	ND		0.020	0.0040	mg/L			11/15/14 22:13	1
Nitrite as N	ND		0.020	0.0030	mg/L			11/15/14 22:13	1
Fluoride	ND		0.10	0.010	mg/L			11/15/14 22:13	1
Chloride	**0.098**	**J**	0.20	0.020	mg/L			11/15/14 22:13	1
Bromide	ND		0.25	0.025	mg/L			11/15/14 22:13	1
Sulfate	ND		0.50	0.050	mg/L			11/15/14 22:13	1
Orthophosphate	ND		0.50	0.078	mg/L			11/15/14 22:13	1
Alkalinity	ND		5.0	0.54	mg/L			11/21/14 14:46	1

Client Sample ID: N1-20141114-21

Date Collected: 11/14/14 12:45
Date Received: 11/15/14 08:45

Lab Sample ID: 160-9451-4

Matrix: Water

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	ND		5.0	0.54	mg/L			11/21/14 14:46	1
Carbonate Alkalinity as CaCO3	ND		5.0	0.54	mg/L			11/21/14 14:46	1

Method: 9310 - Gross Alpha / Beta (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.201	U	0.763	0.764	3.00	1.41	pCi/L	11/19/14 12:09	11/23/14 19:37	1
Gross Beta	0.192	U	0.432	0.432	4.00	0.742	pCi/L	11/19/14 12:09	11/23/14 19:37	1

Method: A-01-R - Isotopic Thorium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Thorium-228	0.0913	U	0.0771	0.0775	1.00	0.107	pCi/L	11/19/14 11:12	11/23/14 22:34	1
Thorium-230	**0.175**		0.0873	0.0886	1.00	0.0583	pCi/L	11/19/14 11:12	11/23/14 22:34	1
Thorium-232	0.00350	U	0.0344	0.0344	1.00	0.0845	pCi/L	11/19/14 11:12	11/23/14 22:34	1
Thorium-227	0.0490	U	0.0644	0.0645	1.00	0.107	pCi/L	11/19/14 11:12	11/23/14 22:34	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Thorium-229	*82.5*		*30 - 110*	*11/19/14 11:12*	*11/23/14 22:34*	*1*

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Uranium-233/234	**0.0919**		0.0648	0.0653	1.00	0.0592	pCi/L	11/19/14 11:12	11/21/14 16:13	1
Uranium-235/236	**0.0400**		0.0461	0.0463	1.00	0.0400	pCi/L	11/19/14 11:12	11/21/14 16:13	1
Uranium-238	**0.0534**		0.0478	0.0480	1.00	0.0321	pCi/L	11/19/14 11:12	11/21/14 16:13	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*79.8*		*30 - 110*	*11/19/14 11:12*	*11/21/14 16:13*	*1*

Default Detection Limits

Client: Weston Solutions, Inc.
Project/Site: START Site in New Mexico

TestAmerica Job ID: 160-9451-1

Method: 6010C - Metals (ICP)

Analyte	RL	MDL	Units	Method
Aluminum	200	22	ug/L	6010C
Antimony	10	3.7	ug/L	6010C
Arsenic	10	1.8	ug/L	6010C
Barium	50	2.1	ug/L	6010C
Beryllium	5.0	0.28	ug/L	6010C
Boron	50	7.2	ug/L	6010C
Cadmium	5.0	0.34	ug/L	6010C
Calcium	1000	54	ug/L	6010C
Chromium	10	3.4	ug/L	6010C
Cobalt	50	2.7	ug/L	6010C
Copper	25	2.1	ug/L	6010C
Iron	100	13	ug/L	6010C
Lead	10	0.60	ug/L	6010C
Magnesium	1000	51	ug/L	6010C
Manganese	15	1.0	ug/L	6010C
Molybdenum	40	1.9	ug/L	6010C
Nickel	40	2.6	ug/L	6010C
Phosphorus	250	14	ug/L	6010C
Potassium	5000	460	ug/L	6010C
Selenium	15	2.1	ug/L	6010C
Silicon	400	20	ug/L	6010C
Silver	10	0.99	ug/L	6010C
Sodium	1000	110	ug/L	6010C
Thallium	20	2.4	ug/L	6010C
Tin	100	5.0	ug/L	6010C
Titanium	20	1.3	ug/L	6010C
Uranium	500	26	ug/L	6010C
Vanadium	50	4.4	ug/L	6010C
Zinc	20	8.3	ug/L	6010C

Method: 6010C - Metals (ICP) - Dissolved

Analyte	RL	MDL	Units	Method
Aluminum	200	22	ug/L	6010C
Antimony	10	3.7	ug/L	6010C
Arsenic	10	1.8	ug/L	6010C
Barium	50	2.1	ug/L	6010C
Beryllium	5.0	0.28	ug/L	6010C
Boron	50	7.2	ug/L	6010C
Cadmium	5.0	0.34	ug/L	6010C
Calcium	1000	54	ug/L	6010C
Chromium	10	3.4	ug/L	6010C
Cobalt	50	2.7	ug/L	6010C
Copper	25	2.1	ug/L	6010C
Iron	100	13	ug/L	6010C
Lead	10	0.60	ug/L	6010C
Magnesium	1000	51	ug/L	6010C
Manganese	15	1.0	ug/L	6010C
Molybdenum	40	1.9	ug/L	6010C
Nickel	40	2.6	ug/L	6010C
Phosphorus	250	14	ug/L	6010C
Potassium	5000	460	ug/L	6010C

Default Detection Limits

Client: Weston Solutions, Inc.
Project/Site: START Site in New Mexico

TestAmerica Job ID: 160-9451-1

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	RL	MDL	Units	Method
Selenium	15	2.1	ug/L	6010C
Silicon	400	20	ug/L	6010C
Silver	10	0.99	ug/L	6010C
Sodium	1000	110	ug/L	6010C
Thallium	20	2.4	ug/L	6010C
Tin	100	5.0	ug/L	6010C
Titanium	20	1.3	ug/L	6010C
Uranium	500	26	ug/L	6010C
Vanadium	50	4.4	ug/L	6010C
Zinc	20	8.3	ug/L	6010C

Method: 7470A - Mercury (CVAA)

Analyte	RL	MDL	Units	Method
Mercury	0.20	0.060	ug/L	7470A

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	RL	MDL	Units	Method
Mercury	0.20	0.060	ug/L	7470A

General Chemistry

Analyte	RL	MDL	Units	Method
pH	0.100	0.100	SU	150.1
Total Dissolved Solids (TDS)	5.0	3.5	mg/L	160.1
Bromide	0.25	0.025	mg/L	300.0
Chloride	0.20	0.020	mg/L	300.0
Fluoride	0.10	0.010	mg/L	300.0
Nitrate as N	0.020	0.0040	mg/L	300.0
Nitrite as N	0.020	0.0030	mg/L	300.0
Orthophosphate	0.50	0.078	mg/L	300.0
Sulfate	0.50	0.050	mg/L	300.0
Alkalinity	5.0	0.54	mg/L	310.1
Bicarbonate Alkalinity as CaCO3	5.0	0.54	mg/L	310.1
Carbonate Alkalinity as CaCO3	5.0	0.54	mg/L	310.1

Tracer/Carrier Summary

Client: Weston Solutions, Inc.
Project/Site: START Site in New Mexico

TestAmerica Job ID: 160-9451-1

Method: A-01-R - Isotopic Thorium (Alpha Spectrometry)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		Th-229
Lab Sample ID	Client Sample ID	(30-110)
160-9451-1	BG03-20141114-21	83.6
160-9451-2	BG04-20141114-21	88.5
160-9451-3	BG05-20141114-21	85.7
160-9451-4	N1-20141114-21	82.5
LCS 160-158130/2-A	Lab Control Sample	84.0
MB 160-158130/1-A	Method Blank	80.6

Tracer/Carrier Legend

Th-229 = Thorium-229

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		U-232
Lab Sample ID	Client Sample ID	(30-110)
160-9451-1	BG03-20141114-21	72.3
160-9451-2	BG04-20141114-21	74.4
160-9451-3	BG05-20141114-21	83.6
160-9451-4	N1-20141114-21	79.8
LCS 160-158134/2-A	Lab Control Sample	72.8
MB 160-158134/1-A	Method Blank	86.1

Tracer/Carrier Legend

U-232 = Uranium-232

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 160-159156/1-A
Matrix: Water
Analysis Batch: 160013

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 159156

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		200	22	ug/L		11/24/14 08:24	11/26/14 10:50	1
Antimony	ND		10	3.7	ug/L		11/24/14 08:24	11/26/14 10:50	1
Arsenic	ND		10	1.8	ug/L		11/24/14 08:24	11/26/14 10:50	1
Barium	ND		50	2.1	ug/L		11/24/14 08:24	11/26/14 10:50	1
Beryllium	ND		5.0	0.28	ug/L		11/24/14 08:24	11/26/14 10:50	1
Boron	ND		50	7.2	ug/L		11/24/14 08:24	11/26/14 10:50	1
Cadmium	ND		5.0	0.34	ug/L		11/24/14 08:24	11/26/14 10:50	1
Calcium	ND		1000	54	ug/L		11/24/14 08:24	11/26/14 10:50	1
Chromium	ND		10	3.4	ug/L		11/24/14 08:24	11/26/14 10:50	1
Cobalt	ND		50	2.7	ug/L		11/24/14 08:24	11/26/14 10:50	1
Copper	ND		25	2.1	ug/L		11/24/14 08:24	11/26/14 10:50	1
Iron	ND		100	13	ug/L		11/24/14 08:24	11/26/14 10:50	1
Lead	ND		10	0.60	ug/L		11/24/14 08:24	11/26/14 10:50	1
Magnesium	ND		1000	51	ug/L		11/24/14 08:24	11/26/14 10:50	1
Manganese	ND		15	1.0	ug/L		11/24/14 08:24	11/26/14 10:50	1
Molybdenum	ND		40	1.9	ug/L		11/24/14 08:24	11/26/14 10:50	1
Nickel	ND		40	2.6	ug/L		11/24/14 08:24	11/26/14 10:50	1
Potassium	ND		5000	460	ug/L		11/24/14 08:24	11/26/14 10:50	1
Selenium	ND		15	2.1	ug/L		11/24/14 08:24	11/26/14 10:50	1
Phosphorus	ND		250	14	ug/L		11/24/14 08:24	11/26/14 10:50	1
Silver	ND		10	0.99	ug/L		11/24/14 08:24	11/26/14 10:50	1
Sodium	ND		1000	110	ug/L		11/24/14 08:24	11/26/14 10:50	1
Thallium	2.50	J	20	2.4	ug/L		11/24/14 08:24	11/26/14 10:50	1
Silicon	ND		400	20	ug/L		11/24/14 08:24	11/26/14 10:50	1
Tin	ND		100	5.0	ug/L		11/24/14 08:24	11/26/14 10:50	1
Titanium	ND		20	1.3	ug/L		11/24/14 08:24	11/26/14 10:50	1
Vanadium	ND		50	4.4	ug/L		11/24/14 08:24	11/26/14 10:50	1
Uranium	67.3	J	500	26	ug/L		11/24/14 08:24	11/26/14 10:50	1
Zinc	10.1	J	20	8.3	ug/L		11/24/14 08:24	11/26/14 10:50	1

Lab Sample ID: LCS 160-159156/2-A
Matrix: Water
Analysis Batch: 160013

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 159156

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	10000	9570		ug/L		96	80 - 120
Antimony	500	500		ug/L		100	80 - 120
Arsenic	1000	976		ug/L		98	80 - 120
Barium	1000	992		ug/L		99	80 - 120
Beryllium	1000	994		ug/L		99	80 - 120
Boron	2000	1990		ug/L		100	80 - 120
Cadmium	1000	990		ug/L		99	80 - 120
Calcium	10000	10700		ug/L		107	80 - 120
Chromium	1000	1020		ug/L		102	80 - 120
Cobalt	1000	1060		ug/L		106	80 - 120
Copper	1000	1020		ug/L		102	80 - 120
Iron	10000	10200		ug/L		102	80 - 120
Lead	1000	1030		ug/L		103	80 - 120

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 160-159156/2-A
Matrix: Water
Analysis Batch: 160013

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 159156

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Magnesium	10000	9450		ug/L		95	80 - 120
Manganese	1000	999		ug/L		100	80 - 120
Molybdenum	500	508		ug/L		102	80 - 120
Nickel	1000	1040		ug/L		104	80 - 120
Potassium	10000	9590		ug/L		96	80 - 120
Selenium	500	496		ug/L		99	80 - 120
Phosphorus	1000	1040		ug/L		104	80 - 120
Silver	200	198		ug/L		99	80 - 120
Sodium	10000	9790		ug/L		98	80 - 120
Thallium	200	212		ug/L		106	80 - 120
Silicon	5000	5020		ug/L		100	80 - 120
Tin	1000	1020		ug/L		102	80 - 120
Titanium	1000	995		ug/L		99	80 - 120
Vanadium	1000	980		ug/L		98	80 - 120
Uranium	1000	1090		ug/L		109	80 - 120
Zinc	1000	1030		ug/L		103	80 - 120

Lab Sample ID: 160-9451-1 MS
Matrix: Water
Analysis Batch: 160013

Client Sample ID: BG03-20141114-21
Prep Type: Total/NA
Prep Batch: 159156

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	3700		10000	13100		ug/L		93	75 - 125
Antimony	ND		500	461		ug/L		92	75 - 125
Arsenic	ND		1000	926		ug/L		93	75 - 125
Barium	640		1000	1570		ug/L		94	75 - 125
Beryllium	ND		1000	941		ug/L		94	75 - 125
Boron	ND		2000	1890		ug/L		94	75 - 125
Cadmium	ND		1000	939		ug/L		94	75 - 125
Calcium	64000		10000	73100	4	ug/L		95	75 - 125
Chromium	ND		1000	966		ug/L		97	75 - 125
Cobalt	ND		1000	1010		ug/L		101	75 - 125
Copper	25	J	1000	958		ug/L		93	75 - 125
Iron	5100		10000	14900		ug/L		98	75 - 125
Lead	15	J	1000	995		ug/L		98	75 - 125
Magnesium	8800	J	10000	17900		ug/L		91	75 - 125
Manganese	580		1000	1550		ug/L		96	75 - 125
Molybdenum	ND		500	471		ug/L		94	75 - 125
Nickel	ND		1000	1000		ug/L		100	75 - 125
Potassium	ND		10000	12900	J F1	ug/L		129	75 - 125
Selenium	ND		500	467		ug/L		93	75 - 125
Phosphorus	210	J	1000	1200	J	ug/L		99	75 - 125
Silver	ND		200	194		ug/L		97	75 - 125
Sodium	22000		10000	31400		ug/L		93	75 - 125
Thallium	27	J B	200	231		ug/L		102	75 - 125
Silicon	27000		5000	32300	4	ug/L		116	75 - 125
Tin	ND		1000	968	J	ug/L		97	75 - 125
Titanium	ND		1000	937		ug/L		94	75 - 125

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 160-9451-1 MS
Matrix: Water
Analysis Batch: 160013

Client Sample ID: BG03-20141114-21
Prep Type: Total/NA
Prep Batch: 159156

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Vanadium	ND		1000	949		ug/L		95	75 - 125
Uranium	500	J B	1000	1360	J	ug/L		86	75 - 125
Zinc	94	J B	1000	1030		ug/L		94	75 - 125

Lab Sample ID: 160-9451-1 MSD
Matrix: Water
Analysis Batch: 160013

Client Sample ID: BG03-20141114-21
Prep Type: Total/NA
Prep Batch: 159156

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aluminum	3700		10000	29200	F1 F2	ug/L		255	75 - 125	76	20
Antimony	ND		500	475		ug/L		95	75 - 125	3	20
Arsenic	ND		1000	965		ug/L		97	75 - 125	4	20
Barium	640		1000	1700		ug/L		106	75 - 125	8	20
Beryllium	ND		1000	988		ug/L		99	75 - 125	5	20
Boron	ND		2000	2000		ug/L		100	75 - 125	6	20
Cadmium	ND		1000	978		ug/L		98	75 - 125	4	20
Calcium	64000		10000	76200	4	ug/L		126	75 - 125	4	20
Chromium	ND		1000	987		ug/L		99	75 - 125	2	20
Cobalt	ND		1000	1060		ug/L		106	75 - 125	5	20
Copper	25	J	1000	1030		ug/L		101	75 - 125	7	20
Iron	5100		10000	23300	F1 F2	ug/L		182	75 - 125	44	20
Lead	15	J	1000	1070		ug/L		106	75 - 125	8	20
Magnesium	8800	J	10000	20000		ug/L		113	75 - 125	11	20
Manganese	580		1000	1640		ug/L		106	75 - 125	6	20
Molybdenum	ND		500	496		ug/L		99	75 - 125	5	20
Nickel	ND		1000	1060		ug/L		106	75 - 125	5	20
Potassium	ND		10000	16400	J F1 F2	ug/L		164	75 - 125	23	20
Selenium	ND		500	483		ug/L		97	75 - 125	3	20
Phosphorus	210	J	1000	1310	J	ug/L		110	75 - 125	9	20
Silver	ND		200	185		ug/L		93	75 - 125	5	20
Sodium	22000		10000	33400		ug/L		113	75 - 125	6	20
Thallium	27	J B	200	242		ug/L		108	75 - 125	5	20
Silicon	27000		5000	62800	4 F2	ug/L		726	75 - 125	64	20
Tin	ND		1000	1000		ug/L		100	75 - 125	3	20
Titanium	ND		1000	1070		ug/L		107	75 - 125	13	20
Vanadium	ND		1000	1000		ug/L		100	75 - 125	5	20
Uranium	500	J B	1000	1150	J F1	ug/L		65	75 - 125	17	20
Zinc	94	J B	1000	1100		ug/L		100	75 - 125	6	20

Lab Sample ID: LCS 160-160503/2-A
Matrix: Water
Analysis Batch: 161515

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 160503

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	10000	9150		ug/L		91	80 - 120
Antimony	500	485		ug/L		97	80 - 120
Arsenic	1000	955		ug/L		96	80 - 120
Barium	1000	930		ug/L		93	80 - 120
Beryllium	1000	934		ug/L		93	80 - 120

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 160-160503/2-A
Matrix: Water
Analysis Batch: 161515

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 160503

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	2000	1830		ug/L		91	80 - 120
Cadmium	1000	961		ug/L		96	80 - 120
Calcium	10000	10700		ug/L		107	80 - 120
Chromium	1000	1000		ug/L		100	80 - 120
Cobalt	1000	1050		ug/L		105	80 - 120
Copper	1000	993		ug/L		99	80 - 120
Iron	10000	9590		ug/L		96	80 - 120
Lead	1000	1040		ug/L		104	80 - 120
Magnesium	10000	9230		ug/L		92	80 - 120
Manganese	1000	951		ug/L		95	80 - 120
Molybdenum	500	507		ug/L		101	80 - 120
Nickel	1000	1030		ug/L		103	80 - 120
Potassium	10000	9220		ug/L		92	80 - 120
Selenium	500	482		ug/L		96	80 - 120
Phosphorus	1000	1020		ug/L		102	80 - 120
Silver	200	197		ug/L		98	80 - 120
Sodium	10000	9190		ug/L		92	80 - 120
Thallium	200	212		ug/L		106	80 - 120
Silicon	5000	4580		ug/L		92	80 - 120
Tin	1000	1030		ug/L		103	80 - 120
Titanium	1000	940		ug/L		94	80 - 120
Vanadium	1000	935		ug/L		93	80 - 120
Uranium	1000	1040		ug/L		104	80 - 120
Zinc	1000	983		ug/L		98	80 - 120

Lab Sample ID: LB 160-157827/1-B
Matrix: Water
Analysis Batch: 161515

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 160503

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		200	22	ug/L		12/02/14 13:02	12/05/14 16:38	1
Antimony	ND		10	3.7	ug/L		12/02/14 13:02	12/05/14 16:38	1
Arsenic	ND		10	1.8	ug/L		12/02/14 13:02	12/05/14 16:38	1
Barium	ND		50	2.1	ug/L		12/02/14 13:02	12/05/14 16:38	1
Beryllium	ND		5.0	0.28	ug/L		12/02/14 13:02	12/05/14 16:38	1
Boron	ND		50	7.2	ug/L		12/02/14 13:02	12/05/14 16:38	1
Cadmium	ND		5.0	0.34	ug/L		12/02/14 13:02	12/05/14 16:38	1
Calcium	ND		1000	54	ug/L		12/02/14 13:02	12/05/14 16:38	1
Chromium	ND		10	3.4	ug/L		12/02/14 13:02	12/05/14 16:38	1
Cobalt	ND		50	2.7	ug/L		12/02/14 13:02	12/05/14 16:38	1
Copper	ND		25	2.1	ug/L		12/02/14 13:02	12/05/14 16:38	1
Iron	ND		100	13	ug/L		12/02/14 13:02	12/05/14 16:38	1
Lead	0.600	J	10	0.60	ug/L		12/02/14 13:02	12/05/14 16:38	1
Magnesium	ND		1000	51	ug/L		12/02/14 13:02	12/05/14 16:38	1
Manganese	ND		15	1.0	ug/L		12/02/14 13:02	12/05/14 16:38	1
Molybdenum	ND		40	1.9	ug/L		12/02/14 13:02	12/05/14 16:38	1
Nickel	ND		40	2.6	ug/L		12/02/14 13:02	12/05/14 16:38	1
Potassium	ND		5000	460	ug/L		12/02/14 13:02	12/05/14 16:38	1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LB 160-157827/1-B
Matrix: Water
Analysis Batch: 161515

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 160503

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	ND		15	2.1	ug/L		12/02/14 13:02	12/05/14 16:38	1
Phosphorus	ND		250	14	ug/L		12/02/14 13:02	12/05/14 16:38	1
Silver	ND		10	0.99	ug/L		12/02/14 13:02	12/05/14 16:38	1
Sodium	ND		1000	110	ug/L		12/02/14 13:02	12/05/14 16:38	1
Thallium	ND		20	2.4	ug/L		12/02/14 13:02	12/05/14 16:38	1
Silicon	ND		400	20	ug/L		12/02/14 13:02	12/05/14 16:38	1
Tin	ND		100	5.0	ug/L		12/02/14 13:02	12/05/14 16:38	1
Titanium	ND		20	1.3	ug/L		12/02/14 13:02	12/05/14 16:38	1
Vanadium	ND		50	4.4	ug/L		12/02/14 13:02	12/05/14 16:38	1
Uranium	ND		500	26	ug/L		12/02/14 13:02	12/05/14 16:38	1
Zinc	ND		20	8.3	ug/L		12/02/14 13:02	12/05/14 16:38	1

Lab Sample ID: 160-9451-1 MS
Matrix: Water
Analysis Batch: 161515

Client Sample ID: BG03-20141114-21
Prep Type: Dissolved
Prep Batch: 160503

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	5100		10000	17600	F1	ug/L		126	75 - 125
Antimony	ND		500	519		ug/L		104	75 - 125
Arsenic	ND		1000	985		ug/L		99	75 - 125
Barium	320	J	1000	1260		ug/L		95	75 - 125
Beryllium	ND		1000	936		ug/L		94	75 - 125
Boron	83	J	2000	1860		ug/L		89	75 - 125
Cadmium	ND		1000	1010		ug/L		101	75 - 125
Calcium	58000		10000	76300	4	ug/L		184	75 - 125
Chromium	ND		1000	1040		ug/L		104	75 - 125
Cobalt	ND		1000	1120		ug/L		112	75 - 125
Copper	29	J	1000	1080		ug/L		105	75 - 125
Iron	4500		10000	14600		ug/L		100	75 - 125
Lead	17	J B	1000	1130		ug/L		111	75 - 125
Magnesium	8000	J	10000	18200		ug/L		102	75 - 125
Manganese	170		1000	1150		ug/L		98	75 - 125
Molybdenum	ND		500	528		ug/L		106	75 - 125
Nickel	ND		1000	1110		ug/L		111	75 - 125
Potassium	4900	J	10000	14500	J	ug/L		96	75 - 125
Selenium	ND		500	496		ug/L		99	75 - 125
Phosphorus	ND		1000	1180	J	ug/L		118	75 - 125
Silver	ND		200	204		ug/L		102	75 - 125
Sodium	21000		10000	31600		ug/L		106	75 - 125
Thallium	ND		200	224		ug/L		112	75 - 125
Silicon	29000		5000	40100	4	ug/L		224	75 - 125
Tin	ND		1000	1090		ug/L		109	75 - 125
Titanium	59	J	1000	986		ug/L		93	75 - 125
Vanadium	ND		1000	959		ug/L		96	75 - 125
Uranium	ND		1000	1060	J	ug/L		106	75 - 125
Zinc	ND		1000	1100		ug/L		110	75 - 125

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 160-9451-1 MSD
Matrix: Water
Analysis Batch: 161515

Client Sample ID: BG03-20141114-21
Prep Type: Dissolved
Prep Batch: 160503

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aluminum	5100		10000	17000		ug/L		119	75 - 125	4	20
Antimony	ND		500	481		ug/L		96	75 - 125	8	20
Arsenic	ND		1000	954		ug/L		95	75 - 125	3	20
Barium	320	J	1000	1230		ug/L		92	75 - 125	3	20
Beryllium	ND		1000	918		ug/L		92	75 - 125	2	20
Boron	83	J	2000	1840		ug/L		88	75 - 125	1	20
Cadmium	ND		1000	973		ug/L		97	75 - 125	4	20
Calcium	58000		10000	70200	4	ug/L		123	75 - 125	8	20
Chromium	ND		1000	1010		ug/L		101	75 - 125	3	20
Cobalt	ND		1000	1060		ug/L		106	75 - 125	5	20
Copper	29	J	1000	1020		ug/L		99	75 - 125	6	20
Iron	4500		10000	14000		ug/L		95	75 - 125	4	20
Lead	17	J B	1000	1090		ug/L		107	75 - 125	4	20
Magnesium	8000	J	10000	17300		ug/L		93	75 - 125	5	20
Manganese	170		1000	1120		ug/L		95	75 - 125	3	20
Molybdenum	ND		500	502		ug/L		100	75 - 125	5	20
Nickel	ND		1000	1050		ug/L		105	75 - 125	5	20
Potassium	4900	J	10000	14200	J	ug/L		93	75 - 125	2	20
Selenium	ND		500	501		ug/L		100	75 - 125	1	20
Phosphorus	ND		1000	1140	J	ug/L		114	75 - 125	4	20
Silver	ND		200	195		ug/L		98	75 - 125	5	20
Sodium	21000		10000	30400		ug/L		94	75 - 125	4	20
Thallium	ND		200	219		ug/L		110	75 - 125	2	20
Silicon	29000		5000	37800	4	ug/L		178	75 - 125	6	20
Tin	ND		1000	1040		ug/L		104	75 - 125	5	20
Titanium	59	J	1000	970		ug/L		91	75 - 125	2	20
Vanadium	ND		1000	953		ug/L		95	75 - 125	1	20
Uranium	ND		1000	1130	J	ug/L		113	75 - 125	6	20
Zinc	ND		1000	1040		ug/L		104	75 - 125	5	20

Lab Sample ID: LRC 160-160013/10
Matrix: Water
Analysis Batch: 160013

Client Sample ID: Lab Control Sample

Analyte			Spike Added	LRC Result	LRC Qualifier	Unit	D	%Rec	%Rec. Limits		
Aluminum			100000	100000		ug/L		100	90 - 110		
Antimony			2000	1990		ug/L		100	90 - 110		
Arsenic			10000	9900		ug/L		99	90 - 110		
Barium			10000	9940		ug/L		99	90 - 110		
Beryllium			10000	9750		ug/L		97	90 - 110		
Boron			10000	9990		ug/L		100	90 - 110		
Cadmium			10000	9880		ug/L		99	90 - 110		
Calcium			100000	97800		ug/L		98	90 - 110		
Chromium			10000	9750		ug/L		98	90 - 110		
Cobalt			10000	9830		ug/L		98	90 - 110		
Copper			10000	9920		ug/L		99	90 - 110		
Iron			100000	98800		ug/L		99	90 - 110		
Lead			10000	9820		ug/L		98	90 - 110		

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LRC 160-160013/10
Matrix: Water
Analysis Batch: 160013

Client Sample ID: Lab Control Sample

Analyte	Spike Added	LRC Result	LRC Qualifier	Unit	D	%Rec	%Rec. Limits
Magnesium	100000	98600		ug/L		99	90 - 110
Manganese	10000	9880		ug/L		99	90 - 110
Molybdenum	2000	1980		ug/L		99	90 - 110
Nickel	10000	9800		ug/L		98	90 - 110
Potassium	100000	99700		ug/L		100	90 - 110
Selenium	2000	1990		ug/L		100	90 - 110
Phosphorus	100000	97700		ug/L		98	90 - 110
Silver	2000	1990		ug/L		99	90 - 110
Sodium	100000	99800		ug/L		100	90 - 110
Thallium	2000	1960		ug/L		98	90 - 110
Silicon	10000	9910		ug/L		99	90 - 110
Tin	10000	9830		ug/L		98	90 - 110
Titanium	10000	9960		ug/L		100	90 - 110
Vanadium	10000	9890		ug/L		99	90 - 110
Uranium	10000	9840		ug/L		98	90 - 110
Zinc	10000	9850		ug/L		98	90 - 110

Lab Sample ID: LRC 160-161515/10
Matrix: Water
Analysis Batch: 161515

Client Sample ID: Lab Control Sample

Analyte	Spike Added	LRC Result	LRC Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	100000	99100		ug/L		99	90 - 110
Antimony	2000	1980		ug/L		99	90 - 110
Arsenic	10000	9890		ug/L		99	90 - 110
Barium	10000	9760		ug/L		98	90 - 110
Beryllium	10000	9680		ug/L		97	90 - 110
Boron	10000	9800		ug/L		98	90 - 110
Cadmium	10000	9790		ug/L		98	90 - 110
Calcium	100000	96900		ug/L		97	90 - 110
Chromium	10000	9730		ug/L		97	90 - 110
Cobalt	10000	9730		ug/L		97	90 - 110
Copper	10000	9800		ug/L		98	90 - 110
Iron	100000	98200		ug/L		98	90 - 110
Lead	10000	9730		ug/L		97	90 - 110
Magnesium	100000	98100		ug/L		98	90 - 110
Manganese	10000	9780		ug/L		98	90 - 110
Molybdenum	2000	1960		ug/L		98	90 - 110
Nickel	10000	9720		ug/L		97	90 - 110
Potassium	100000	99400		ug/L		99	90 - 110
Selenium	2000	1990		ug/L		100	90 - 110
Phosphorus	100000	97400		ug/L		97	90 - 110
Silver	2000	1950		ug/L		98	90 - 110
Sodium	100000	97800		ug/L		98	90 - 110
Thallium	2000	1930		ug/L		97	90 - 110
Silicon	10000	9850		ug/L		98	90 - 110
Tin	10000	9750		ug/L		97	90 - 110
Titanium	10000	9800		ug/L		98	90 - 110

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LRC 160-161515/10 — **Client Sample ID: Lab Control Sample**
Matrix: Water
Analysis Batch: 161515

Analyte	Spike Added	LRC Result	LRC Qualifier	Unit	D	%Rec	%Rec. Limits
Vanadium	10000	9750		ug/L		97	90 - 110
Uranium	10000	9680		ug/L		97	90 - 110
Zinc	10000	9770		ug/L		98	90 - 110

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 160-160845/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 161064 — **Prep Batch: 160845**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.060	ug/L		12/03/14 15:51	12/04/14 10:31	1

Lab Sample ID: LCS 160-160845/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 161064 — **Prep Batch: 160845**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	5.00	5.29		ug/L		106	80 - 120

Lab Sample ID: LCS 160-161422/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 161529 — **Prep Batch: 161422**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	5.00	5.06		ug/L		101	80 - 120

Lab Sample ID: LB 160-157827/1-D — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 161529 — **Prep Batch: 161422**

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.060	ug/L		12/05/14 13:47	12/06/14 13:57	1

Lab Sample ID: 160-9451-4 MS — **Client Sample ID: N1-20141114-21**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 161529 — **Prep Batch: 161422**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND		5.00	4.73		ug/L		95	80 - 120

Lab Sample ID: 160-9451-4 MSD — **Client Sample ID: N1-20141114-21**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 161529 — **Prep Batch: 161422**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		5.00	4.87		ug/L		97	80 - 120	3	20

Method: 150.1 - pH (Electrometric)

Lab Sample ID: LCS 160-160158/5
Matrix: Water
Analysis Batch: 160158

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.030		SU		100	99.0 - 101.0

Lab Sample ID: 160-9451-1 DU
Matrix: Water
Analysis Batch: 160158

Client Sample ID: BG03-20141114-21
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.54	HF	7.580		SU		0.5	5

Method: 160.1 - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 160-158738/1
Matrix: Water
Analysis Batch: 158738

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		5.0	3.5	mg/L			11/20/14 08:30	1

Lab Sample ID: LCS 160-158738/2
Matrix: Water
Analysis Batch: 158738

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids (TDS)	500	511		mg/L		102	90 - 110

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 160-157774/3
Matrix: Water
Analysis Batch: 157774

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.10	0.010	mg/L			11/18/14 10:56	1
Chloride	ND		0.20	0.020	mg/L			11/18/14 10:56	1
Bromide	ND		0.25	0.025	mg/L			11/18/14 10:56	1
Sulfate	ND		0.50	0.050	mg/L			11/18/14 10:56	1

Lab Sample ID: LCS 160-157774/4
Matrix: Water
Analysis Batch: 157774

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	1.00	0.988		mg/L		99	90 - 110
Chloride	2.00	1.96		mg/L		98	90 - 110
Bromide	2.00	2.00		mg/L		100	90 - 110
Sulfate	8.00	7.64		mg/L		95	90 - 110

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 160-158759/3
Matrix: Water
Analysis Batch: 158759

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.020	0.0040	mg/L			11/15/14 13:10	1
Nitrite as N	ND		0.020	0.0030	mg/L			11/15/14 13:10	1
Fluoride	ND		0.10	0.010	mg/L			11/15/14 13:10	1
Chloride	ND		0.20	0.020	mg/L			11/15/14 13:10	1
Bromide	ND		0.25	0.025	mg/L			11/15/14 13:10	1
Sulfate	ND		0.50	0.050	mg/L			11/15/14 13:10	1
Orthophosphate	ND		0.50	0.078	mg/L			11/15/14 13:10	1

Lab Sample ID: LCS 160-158759/4
Matrix: Water
Analysis Batch: 158759

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.400	0.399		mg/L		100	90 - 110
Nitrite as N	0.160	0.151		mg/L		94	90 - 110
Fluoride	1.00	0.999		mg/L		100	90 - 110
Chloride	2.00	1.95		mg/L		98	90 - 110
Bromide	2.00	2.01		mg/L		100	90 - 110
Sulfate	8.00	7.78		mg/L		97	90 - 110
Orthophosphate	8.00	7.78		mg/L		97	90 - 110

Lab Sample ID: 160-9451-4 MS
Matrix: Water
Analysis Batch: 158759

Client Sample ID: N1-20141114-21
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	ND		0.400	0.408		mg/L		102	90 - 110
Nitrite as N	ND		0.100	0.120	F1	mg/L		120	90 - 110
Fluoride	ND		2.00	2.05		mg/L		102	90 - 110
Chloride	0.098	J	2.00	1.98		mg/L		94	90 - 110
Bromide	ND		2.00	2.03		mg/L		102	90 - 110
Sulfate	ND		4.00	3.73		mg/L		93	90 - 110
Orthophosphate	ND		4.00	3.75		mg/L		94	90 - 110

Method: 310.1 - Alkalinity

Lab Sample ID: MB 160-158800/1
Matrix: Water
Analysis Batch: 158800

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	1.25	J	1.3	0.14	mg/L			11/21/14 14:46	1
Bicarbonate Alkalinity as CaCO3	1.25	J	1.3	0.14	mg/L			11/21/14 14:46	1
Carbonate Alkalinity as CaCO3	ND		1.3	0.14	mg/L			11/21/14 14:46	1

Method: 310.1 - Alkalinity (Continued)

Lab Sample ID: HLCS 160-158800/3
Matrix: Water
Analysis Batch: 158800

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	HLCS Result	HLCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	400	374		mg/L		94	90 - 110
Bicarbonate Alkalinity as CaCO3	400	374		mg/L		94	90 - 110

Lab Sample ID: LCS 160-158800/2
Matrix: Water
Analysis Batch: 158800

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	200	186		mg/L		93	90 - 110
Bicarbonate Alkalinity as CaCO3	200	186		mg/L		93	90 - 110

Method: 9310 - Gross Alpha / Beta (GFPC)

Lab Sample ID: MB 160-158146/1-A
Matrix: Water
Analysis Batch: 159374

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 158146

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	1.140	U	0.925	0.934	3.00	1.41	pCi/L	11/19/14 12:09	11/23/14 19:35	1
Gross Beta	0.3974	U	0.560	0.562	4.00	0.911	pCi/L	11/19/14 12:09	11/23/14 19:35	1

Lab Sample ID: LCS 160-158146/2-A
Matrix: Water
Analysis Batch: 159374

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 158146

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Gross Alpha	50.1	55.39		8.10	3.00	2.49	pCi/L	111	73 - 133

Lab Sample ID: LCSB 160-158146/3-A
Matrix: Water
Analysis Batch: 159374

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 158146

Analyte	Spike Added	LCSB Result	LCSB Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Gross Beta	96.2	99.25		10.5	4.00	1.13	pCi/L	103	75 - 125

Method: A-01-R - Isotopic Thorium (Alpha Spectrometry)

Lab Sample ID: MB 160-158130/1-A
Matrix: Water
Analysis Batch: 159070

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 158130

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Thorium-228	0.05362	U	0.0852	0.0853	1.00	0.148	pCi/L	11/19/14 11:12	11/23/14 22:34	1
Thorium-230	0.2173		0.0971	0.0988	1.00	0.0583	pCi/L	11/19/14 11:12	11/23/14 22:34	1
Thorium-232	0.001750	U	0.0244	0.0244	1.00	0.0691	pCi/L	11/19/14 11:12	11/23/14 22:34	1

Method: A-01-R - Isotopic Thorium (Alpha Spectrometry) (Continued)

Lab Sample ID: MB 160-158130/1-A
Matrix: Water
Analysis Batch: 159070

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 158130

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Thorium-227	0.01052	U	0.0820	0.0820	1.00	0.162	pCi/L	11/19/14 11:12	11/23/14 22:34	1

Tracer	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Thorium-229	*80.6*		*30 - 110*	*11/19/14 11:12*	*11/23/14 22:34*	*1*

Lab Sample ID: LCS 160-158130/2-A
Matrix: Water
Analysis Batch: 159071

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 158130

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Thorium-230			8.03	7.990		0.881	1.00	0.0307	pCi/L	100	81 - 125		

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Thorium-229	*84.0*		*30 - 110*

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Lab Sample ID: MB 160-158134/1-A
Matrix: Water
Analysis Batch: 158845

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 158134

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Uranium-233/234	0.03001		0.0347	0.0347	1.00	0.0300	pCi/L	11/19/14 11:12	11/21/14 16:13	1
Uranium-235/236	-0.01556	U	0.0180	0.0180	1.00	0.0919	pCi/L	11/19/14 11:12	11/21/14 16:13	1
Uranium-238	0.02330	U	0.0433	0.0433	1.00	0.0804	pCi/L	11/19/14 11:12	11/21/14 16:13	1

Tracer	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*86.1*		*30 - 110*	*11/19/14 11:12*	*11/21/14 16:13*	*1*

Lab Sample ID: LCS 160-158134/2-A
Matrix: Water
Analysis Batch: 158846

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 158134

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Uranium-233/234			12.7	13.50		1.39	1.00	0.0875	pCi/L	106	84 - 120		
Uranium-238			13.0	13.79		1.41	1.00	0.0654	pCi/L	106	83 - 121		

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Uranium-232	*72.8*		*30 - 110*

Metals

Filtration Batch: 157827

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-9451-1	BG03-20141114-21	Dissolved	Water	FILTRATION	
160-9451-1 MS	BG03-20141114-21	Dissolved	Water	FILTRATION	
160-9451-1 MSD	BG03-20141114-21	Dissolved	Water	FILTRATION	
160-9451-1 SD	BG03-20141114-21	Dissolved	Water	FILTRATION	
160-9451-2	BG04-20141114-21	Dissolved	Water	FILTRATION	
160-9451-3	BG05-20141114-21	Dissolved	Water	FILTRATION	
160-9451-4	N1-20141114-21	Dissolved	Water	FILTRATION	
160-9451-4 MS	N1-20141114-21	Dissolved	Water	FILTRATION	
160-9451-4 MSD	N1-20141114-21	Dissolved	Water	FILTRATION	
160-9451-4 SD	N1-20141114-21	Dissolved	Water	FILTRATION	
LB 160-157827/1-B	Method Blank	Dissolved	Water	FILTRATION	
LB 160-157827/1-D	Method Blank	Dissolved	Water	FILTRATION	

Prep Batch: 159156

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-9451-1	BG03-20141114-21	Total/NA	Water	3010A	
160-9451-1 MS	BG03-20141114-21	Total/NA	Water	3010A	
160-9451-1 MSD	BG03-20141114-21	Total/NA	Water	3010A	
160-9451-1 SD	BG03-20141114-21	Total/NA	Water	3010A	
160-9451-2	BG04-20141114-21	Total/NA	Water	3010A	
160-9451-3	BG05-20141114-21	Total/NA	Water	3010A	
160-9451-4	N1-20141114-21	Total/NA	Water	3010A	
LCS 160-159156/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 160-159156/1-A	Method Blank	Total/NA	Water	3010A	

Analysis Batch: 160013

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-9451-1	BG03-20141114-21	Total/NA	Water	6010C	159156
160-9451-1 MS	BG03-20141114-21	Total/NA	Water	6010C	159156
160-9451-1 MSD	BG03-20141114-21	Total/NA	Water	6010C	159156
160-9451-1 SD	BG03-20141114-21	Total/NA	Water	6010C	159156
160-9451-2	BG04-20141114-21	Total/NA	Water	6010C	159156
160-9451-3	BG05-20141114-21	Total/NA	Water	6010C	159156
160-9451-4	N1-20141114-21	Total/NA	Water	6010C	159156
CRI 160-160013/7	DL		Water	6010C	
ICSA 160-160013/8	ICS		Water	6010C	
ICSAB 160-160013/9	ICS		Water	6010C	
LCS 160-159156/2-A	Lab Control Sample	Total/NA	Water	6010C	159156
LRC 160-160013/10	Lab Control Sample		Water	6010C	
MB 160-159156/1-A	Method Blank	Total/NA	Water	6010C	159156

Prep Batch: 160503

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-9451-1	BG03-20141114-21	Dissolved	Water	3010A	157827
160-9451-1 MS	BG03-20141114-21	Dissolved	Water	3010A	157827
160-9451-1 MSD	BG03-20141114-21	Dissolved	Water	3010A	157827
160-9451-1 SD	BG03-20141114-21	Dissolved	Water	3010A	157827
160-9451-2	BG04-20141114-21	Dissolved	Water	3010A	157827
160-9451-3	BG05-20141114-21	Dissolved	Water	3010A	157827
160-9451-4	N1-20141114-21	Dissolved	Water	3010A	157827
LB 160-157827/1-B	Method Blank	Dissolved	Water	3010A	157827

Metals (Continued)

Prep Batch: 160503 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 160-160503/2-A	Lab Control Sample	Total/NA	Water	3010A	

Prep Batch: 160845

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-9451-1	BG03-20141114-21	Total/NA	Water	7470A	
160-9451-2	BG04-20141114-21	Total/NA	Water	7470A	
160-9451-3	BG05-20141114-21	Total/NA	Water	7470A	
160-9451-4	N1-20141114-21	Total/NA	Water	7470A	
LCS 160-160845/2-A	Lab Control Sample	Total/NA	Water	7470A	
MB 160-160845/1-A	Method Blank	Total/NA	Water	7470A	

Analysis Batch: 161064

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-9451-1	BG03-20141114-21	Total/NA	Water	7470A	160845
160-9451-2	BG04-20141114-21	Total/NA	Water	7470A	160845
160-9451-3	BG05-20141114-21	Total/NA	Water	7470A	160845
160-9451-4	N1-20141114-21	Total/NA	Water	7470A	160845
LCS 160-160845/2-A	Lab Control Sample	Total/NA	Water	7470A	160845
MB 160-160845/1-A	Method Blank	Total/NA	Water	7470A	160845

Prep Batch: 161422

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-9451-1	BG03-20141114-21	Dissolved	Water	7470A	157827
160-9451-2	BG04-20141114-21	Dissolved	Water	7470A	157827
160-9451-3	BG05-20141114-21	Dissolved	Water	7470A	157827
160-9451-4	N1-20141114-21	Dissolved	Water	7470A	157827
160-9451-4 MS	N1-20141114-21	Dissolved	Water	7470A	157827
160-9451-4 MSD	N1-20141114-21	Dissolved	Water	7470A	157827
160-9451-4 SD	N1-20141114-21	Dissolved	Water	7470A	157827
LB 160-157827/1-D	Method Blank	Dissolved	Water	7470A	157827
LCS 160-161422/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 161515

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-9451-1	BG03-20141114-21	Dissolved	Water	6010C	160503
160-9451-1 MS	BG03-20141114-21	Dissolved	Water	6010C	160503
160-9451-1 MSD	BG03-20141114-21	Dissolved	Water	6010C	160503
160-9451-1 SD	BG03-20141114-21	Dissolved	Water	6010C	160503
160-9451-2	BG04-20141114-21	Dissolved	Water	6010C	160503
160-9451-3	BG05-20141114-21	Dissolved	Water	6010C	160503
160-9451-4	N1-20141114-21	Dissolved	Water	6010C	160503
CRI 160-161515/7	DL		Water	6010C	
ICSA 160-161515/8	ICS		Water	6010C	
ICSAB 160-161515/9	ICS		Water	6010C	
LB 160-157827/1-B	Method Blank	Dissolved	Water	6010C	160503
LCS 160-160503/2-A	Lab Control Sample	Total/NA	Water	6010C	160503
LRC 160-161515/10	Lab Control Sample		Water	6010C	

Analysis Batch: 161529

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-9451-1	BG03-20141114-21	Dissolved	Water	7470A	161422

Metals (Continued)

Analysis Batch: 161529 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-9451-2	BG04-20141114-21	Dissolved	Water	7470A	161422
160-9451-3	BG05-20141114-21	Dissolved	Water	7470A	161422
160-9451-4	N1-20141114-21	Dissolved	Water	7470A	161422
160-9451-4 MS	N1-20141114-21	Dissolved	Water	7470A	161422
160-9451-4 MSD	N1-20141114-21	Dissolved	Water	7470A	161422
160-9451-4 SD	N1-20141114-21	Dissolved	Water	7470A	161422
LB 160-157827/1-D	Method Blank	Dissolved	Water	7470A	161422
LCS 160-161422/2-A	Lab Control Sample	Total/NA	Water	7470A	161422

General Chemistry

Analysis Batch: 157774

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-9451-2 - DL	BG04-20141114-21	Total/NA	Water	300.0	
LCS 160-157774/4	Lab Control Sample	Total/NA	Water	300.0	
MB 160-157774/3	Method Blank	Total/NA	Water	300.0	

Analysis Batch: 158738

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-9451-1	BG03-20141114-21	Total/NA	Water	160.1	
160-9451-2	BG04-20141114-21	Total/NA	Water	160.1	
160-9451-3	BG05-20141114-21	Total/NA	Water	160.1	
160-9451-4	N1-20141114-21	Total/NA	Water	160.1	
LCS 160-158738/2	Lab Control Sample	Total/NA	Water	160.1	
MB 160-158738/1	Method Blank	Total/NA	Water	160.1	

Analysis Batch: 158759

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-9451-1	BG03-20141114-21	Total/NA	Water	300.0	
160-9451-1 - DL	BG03-20141114-21	Total/NA	Water	300.0	
160-9451-2	BG04-20141114-21	Total/NA	Water	300.0	
160-9451-2 - DL	BG04-20141114-21	Total/NA	Water	300.0	
160-9451-3	BG05-20141114-21	Total/NA	Water	300.0	
160-9451-4	N1-20141114-21	Total/NA	Water	300.0	
160-9451-4 MS	N1-20141114-21	Total/NA	Water	300.0	
LCS 160-158759/4	Lab Control Sample	Total/NA	Water	300.0	
MB 160-158759/3	Method Blank	Total/NA	Water	300.0	

Analysis Batch: 158800

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-9451-1	BG03-20141114-21	Total/NA	Water	310.1	
160-9451-2	BG04-20141114-21	Total/NA	Water	310.1	
160-9451-3	BG05-20141114-21	Total/NA	Water	310.1	
160-9451-4	N1-20141114-21	Total/NA	Water	310.1	
HLCS 160-158800/3	Lab Control Sample	Total/NA	Water	310.1	
LCS 160-158800/2	Lab Control Sample	Total/NA	Water	310.1	
MB 160-158800/1	Method Blank	Total/NA	Water	310.1	

General Chemistry (Continued)

Analysis Batch: 160158

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-9451-1	BG03-20141114-21	Total/NA	Water	150.1	
160-9451-1 DU	BG03-20141114-21	Total/NA	Water	150.1	
160-9451-2	BG04-20141114-21	Total/NA	Water	150.1	
160-9451-3	BG05-20141114-21	Total/NA	Water	150.1	
160-9451-4	N1-20141114-21	Total/NA	Water	150.1	
LCS 160-160158/5	Lab Control Sample	Total/NA	Water	150.1	

Rad

Prep Batch: 158130

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-9451-1	BG03-20141114-21	Total/NA	Water	ExtChrom	
160-9451-2	BG04-20141114-21	Total/NA	Water	ExtChrom	
160-9451-3	BG05-20141114-21	Total/NA	Water	ExtChrom	
160-9451-4	N1-20141114-21	Total/NA	Water	ExtChrom	
LCS 160-158130/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	
MB 160-158130/1-A	Method Blank	Total/NA	Water	ExtChrom	

Prep Batch: 158134

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-9451-1	BG03-20141114-21	Total/NA	Water	ExtChrom	
160-9451-2	BG04-20141114-21	Total/NA	Water	ExtChrom	
160-9451-3	BG05-20141114-21	Total/NA	Water	ExtChrom	
160-9451-4	N1-20141114-21	Total/NA	Water	ExtChrom	
LCS 160-158134/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	
MB 160-158134/1-A	Method Blank	Total/NA	Water	ExtChrom	

Prep Batch: 158146

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-9451-1	BG03-20141114-21	Total/NA	Water	Evaporation	
160-9451-2	BG04-20141114-21	Total/NA	Water	Evaporation	
160-9451-3	BG05-20141114-21	Total/NA	Water	Evaporation	
160-9451-4	N1-20141114-21	Total/NA	Water	Evaporation	
LCS 160-158146/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
LCSB 160-158146/3-A	Lab Control Sample	Total/NA	Water	Evaporation	
MB 160-158146/1-A	Method Blank	Total/NA	Water	Evaporation	

Analysis Batch: 106023

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
ACVABT 160-106023/1	ACV			GFPC_SUM	
ACVABT 160-106023/2	ACV			GFPC_SUM	
ACVABT 160-106023/3	ACV			GFPC_SUM	
ACVABT 160-106023/4	ACV			GFPC_SUM	
ACVABT 160-106023/5	ACV			GFPC_SUM	
ACVABT 160-106023/6	ACV			GFPC_SUM	

(Continued)

Analysis Batch: 106024

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
ACVABT 160-106024/1	ACV			GFPC_SUM	
ACVABT 160-106024/2	ACV			GFPC_SUM	
ACVABT 160-106024/3	ACV			GFPC_SUM	
ACVABT 160-106024/4	ACV			GFPC_SUM	
ACVABT 160-106024/5	ACV			GFPC_SUM	
ACVABT 160-106024/6	ACV			GFPC_SUM	

Client Sample ID: BG03-20141114-21

Lab Sample ID: 160-9451-1

Date Collected: 11/14/14 10:30

Matrix: Water

Date Received: 11/15/14 08:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	FILTRATION			157827	11/18/14 16:33	JWM	TAL SL
Dissolved	Prep	3010A			160503	12/02/14 13:02	SMD	TAL SL
Dissolved	Analysis	6010C		10	161515	12/05/14 16:45	FLC	TAL SL
Total/NA	Prep	3010A			159156	11/24/14 08:24	SMD	TAL SL
Total/NA	Analysis	6010C		10	160013	11/26/14 10:57	FLC	TAL SL
Dissolved	Filtration	FILTRATION			157827	11/18/14 16:33	JWM	TAL SL
Dissolved	Prep	7470A			161422	12/05/14 13:47	MTS	TAL SL
Dissolved	Analysis	7470A		1	161529	12/06/14 14:01	MTS	TAL SL
Total/NA	Prep	7470A			160845	12/03/14 15:51	MTS	TAL SL
Total/NA	Analysis	7470A		1	161064	12/04/14 10:35	MTS	TAL SL
Total/NA	Analysis	150.1		1	160158	12/01/14 12:33	MFM	TAL SL
Total/NA	Analysis	160.1		1	158738	11/20/14 08:30	BAT	TAL SL
Total/NA	Analysis	300.0		1	158759	11/15/14 20:21	AMF	TAL SL
Total/NA	Analysis	300.0	DL	50	158759	11/15/14 20:35	AMF	TAL SL
Total/NA	Analysis	310.1		1	158800	11/21/14 14:46	BAT	TAL SL
Total/NA	Prep	Evaporation			158146	11/19/14 12:09	JH	TAL SL
Total/NA	Analysis	9310		1	159374	11/23/14 19:36	AS1	TAL SL
Total/NA	Prep	ExtChrom			158134	11/19/14 11:12	SCB	TAL SL
Total/NA	Analysis	A-01-R		1	158850	11/21/14 16:13	MLK	TAL SL
Total/NA	Prep	ExtChrom			158130	11/19/14 11:12	SCB	TAL SL
Total/NA	Analysis	A-01-R		1	159075	11/23/14 22:34	MLK	TAL SL

Client Sample ID: BG04-20141114-21

Lab Sample ID: 160-9451-2

Date Collected: 11/14/14 11:10

Matrix: Water

Date Received: 11/15/14 08:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	FILTRATION			157827	11/18/14 16:33	JWM	TAL SL
Dissolved	Prep	3010A			160503	12/02/14 13:02	SMD	TAL SL
Dissolved	Analysis	6010C		10	161515	12/05/14 17:00	FLC	TAL SL
Total/NA	Prep	3010A			159156	11/24/14 08:24	SMD	TAL SL
Total/NA	Analysis	6010C		10	160013	11/26/14 11:13	FLC	TAL SL
Dissolved	Filtration	FILTRATION			157827	11/18/14 16:33	JWM	TAL SL
Dissolved	Prep	7470A			161422	12/05/14 13:47	MTS	TAL SL
Dissolved	Analysis	7470A		1	161529	12/06/14 14:04	MTS	TAL SL
Total/NA	Prep	7470A			160845	12/03/14 15:51	MTS	TAL SL
Total/NA	Analysis	7470A		1	161064	12/04/14 10:38	MTS	TAL SL
Total/NA	Analysis	150.1		1	160158	12/01/14 12:33	MFM	TAL SL
Total/NA	Analysis	160.1		1	158738	11/20/14 08:30	BAT	TAL SL
Total/NA	Analysis	300.0	DL	10	157774	11/18/14 16:52	AMF	TAL SL
Total/NA	Analysis	300.0		1	158759	11/15/14 21:17	AMF	TAL SL
Total/NA	Analysis	300.0	DL	50	158759	11/15/14 21:31	AMF	TAL SL
Total/NA	Analysis	310.1		1	158800	11/21/14 14:46	BAT	TAL SL

Client Sample ID: BG04-20141114-21

Lab Sample ID: 160-9451-2

Date Collected: 11/14/14 11:10

Matrix: Water

Date Received: 11/15/14 08:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Evaporation			158146	11/19/14 12:09	JH	TAL SL
Total/NA	Analysis	9310		1	159374	11/23/14 19:36	AS1	TAL SL
Total/NA	Prep	ExtChrom			158134	11/19/14 11:12	SCB	TAL SL
Total/NA	Analysis	A-01-R		1	158851	11/21/14 16:13	MLK	TAL SL
Total/NA	Prep	ExtChrom			158130	11/19/14 11:12	SCB	TAL SL
Total/NA	Analysis	A-01-R		1	159076	11/23/14 22:34	MLK	TAL SL

Client Sample ID: BG05-20141114-21

Lab Sample ID: 160-9451-3

Date Collected: 11/14/14 11:45

Matrix: Water

Date Received: 11/15/14 08:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	FILTRATION			157827	11/18/14 16:33	JWM	TAL SL
Dissolved	Prep	3010A			160503	12/02/14 13:04	SMD	TAL SL
Dissolved	Analysis	6010C		10	161515	12/05/14 17:04	FLC	TAL SL
Total/NA	Prep	3010A			159156	11/24/14 08:24	SMD	TAL SL
Total/NA	Analysis	6010C		10	160013	11/26/14 11:17	FLC	TAL SL
Dissolved	Filtration	FILTRATION			157827	11/18/14 16:33	JWM	TAL SL
Dissolved	Prep	7470A			161422	12/05/14 13:47	MTS	TAL SL
Dissolved	Analysis	7470A		1	161529	12/06/14 14:06	MTS	TAL SL
Total/NA	Prep	7470A			160845	12/03/14 15:51	MTS	TAL SL
Total/NA	Analysis	7470A		1	161064	12/04/14 10:40	MTS	TAL SL
Total/NA	Analysis	150.1		1	160158	12/01/14 12:33	MFM	TAL SL
Total/NA	Analysis	160.1		1	158738	11/20/14 08:30	BAT	TAL SL
Total/NA	Analysis	300.0		1	158759	11/15/14 21:45	AMF	TAL SL
Total/NA	Analysis	310.1		1	158800	11/21/14 14:46	BAT	TAL SL
Total/NA	Prep	Evaporation			158146	11/19/14 12:09	JH	TAL SL
Total/NA	Analysis	9310		1	159374	11/23/14 19:37	AS1	TAL SL
Total/NA	Prep	ExtChrom			158134	11/19/14 11:12	SCB	TAL SL
Total/NA	Analysis	A-01-R		1	158852	11/21/14 16:13	MLK	TAL SL
Total/NA	Prep	ExtChrom			158130	11/19/14 11:12	SCB	TAL SL
Total/NA	Analysis	A-01-R		1	159077	11/23/14 22:34	MLK	TAL SL

Client Sample ID: N1-20141114-21

Lab Sample ID: 160-9451-4

Date Collected: 11/14/14 12:45

Matrix: Water

Date Received: 11/15/14 08:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	FILTRATION			157827	11/18/14 16:33	JWM	TAL SL
Dissolved	Prep	3010A			160503	12/02/14 13:04	SMD	TAL SL
Dissolved	Analysis	6010C		1	161515	12/05/14 17:16	FLC	TAL SL
Total/NA	Prep	3010A			159156	11/24/14 08:24	SMD	TAL SL
Total/NA	Analysis	6010C		1	160013	11/26/14 11:55	FLC	TAL SL

Lab Chronicle

Client: Weston Solutions, Inc.
Project/Site: START Site in New Mexico

TestAmerica Job ID: 160-9451-1

Client Sample ID: N1-20141114-21
Date Collected: 11/14/14 12:45
Date Received: 11/15/14 08:45

Lab Sample ID: 160-9451-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	FILTRATION			157827	11/18/14 16:33	JWM	TAL SL
Dissolved	Prep	7470A			161422	12/05/14 13:47	MTS	TAL SL
Dissolved	Analysis	7470A		1	161529	12/06/14 14:09	MTS	TAL SL
Total/NA	Prep	7470A			160845	12/03/14 15:51	MTS	TAL SL
Total/NA	Analysis	7470A		1	161064	12/04/14 10:42	MTS	TAL SL
Total/NA	Analysis	150.1		1	160158	12/01/14 12:33	MFM	TAL SL
Total/NA	Analysis	160.1		1	158738	11/20/14 08:30	BAT	TAL SL
Total/NA	Analysis	300.0		1	158759	11/15/14 22:13	AMF	TAL SL
Total/NA	Analysis	310.1		1	158800	11/21/14 14:46	BAT	TAL SL
Total/NA	Prep	Evaporation			158146	11/19/14 12:09	JH	TAL SL
Total/NA	Analysis	9310		1	159374	11/23/14 19:37	AS1	TAL SL
Total/NA	Prep	ExtChrom			158134	11/19/14 11:12	SCB	TAL SL
Total/NA	Analysis	A-01-R		1	158853	11/21/14 16:13	MLK	TAL SL
Total/NA	Prep	ExtChrom			158130	11/19/14 11:12	SCB	TAL SL
Total/NA	Analysis	A-01-R		1	159078	11/23/14 22:34	MLK	TAL SL

Laboratory References:

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Certification Summary

Client: Weston Solutions, Inc.
Project/Site: START Site in New Mexico

TestAmerica Job ID: 160-9451-1

Laboratory: TestAmerica St. Louis

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	MO00054	06-30-15
California	NELAP	9	2886	03-31-15
Connecticut	State Program	1	PH-0241	03-31-15
Florida	NELAP	4	E87689	06-30-15
Illinois	NELAP	5	200023	11-30-15
Iowa	State Program	7	373	12-01-16
Kansas	NELAP	7	E-10236	03-31-15 *
Kentucky (DW)	State Program	4	90125	12-31-15
L-A-B	DoD ELAP		L2305	01-10-16
Louisiana	NELAP	6	LA150017	12-31-16
Maryland	State Program	3	310	09-30-15
Missouri	State Program	7	780	06-30-15
Nevada	State Program	9	MO000542013-1	07-31-15
New Jersey	NELAP	2	MO002	06-30-15
New Mexico	State Program	6		06-30-10 *
New York	NELAP	2	11616	03-31-15 *
North Dakota	State Program	8	R207	06-30-15
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-15
Pennsylvania	NELAP	3	68-00540	02-28-15 *
South Carolina	State Program	4	85002001	06-30-15
Texas	NELAP	6	T104704193-13-6	07-31-15
USDA	Federal		P330-07-00122	01-09-17
Utah	NELAP	8	MO000542013-5	07-31-15
Virginia	NELAP	3	460230	06-14-15
Washington	State Program	10	C592	08-30-15
West Virginia DEP	State Program	3	381	08-31-15

* Certification renewal pending - certification considered valid.

Method Summary

Client: Weston Solutions, Inc.
Project/Site: START Site in New Mexico

TestAmerica Job ID: 160-9451-1

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	TAL SL
7470A	Mercury (CVAA)	SW846	TAL SL
150.1	pH (Electrometric)	MCAWW	TAL SL
160.1	Solids, Total Dissolved (TDS)	MCAWW	TAL SL
300.0	Anions, Ion Chromatography	MCAWW	TAL SL
310.1	Alkalinity	MCAWW	TAL SL
9310	Gross Alpha / Beta (GFPC)	SW846	TAL SL
A-01-R	Isotopic Uranium (Alpha Spectrometry)	DOE	TAL SL
A-01-R	Isotopic Thorium (Alpha Spectrometry)	DOE	TAL SL
GFPC_SUM			TAL SL

Protocol References:

DOE = U.S. Department of Energy

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Weston Solutions, Inc.
Project/Site: START Site in New Mexico

TestAmerica Job ID: 160-9451-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
160-9451-1	BG03-20141114-21	Water	11/14/14 10:30	11/15/14 08:45
160-9451-2	BG04-20141114-21	Water	11/14/14 11:10	11/15/14 08:45
160-9451-3	BG05-20141114-21	Water	11/14/14 11:45	11/15/14 08:45
160-9451-4	N1-20141114-21	Water	11/14/14 12:45	11/15/14 08:45

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
82232-334_00001	06/03/60		Eckert & Ziegler, Lot 82232-334		(Purchased Reagent)		Am-241	7.281 Bq
							Pu-239	7.137 Bq
							Thorium-230	7.63 Bq
82233-334_00001	06/03/60		Eckert & Zigler, Lot 82233-334		(Purchased Reagent)		Am-241	5.114 Bq
							Pu-239	6.064 Bq
							Thorium-230	4.95 Bq
82234-334_00001	06/02/60		Eckert & Zigler, Lot 82234-334		(Purchased Reagent)		Am-241	5.652 Bq
							Pu-239	5.936 Bq
							Thorium-230	5.685 Bq
82235-334_00001	06/04/60		Eckert & Ziegler, Lot 82235-334		(Purchased Reagent)		Am-241	7.466 Bq
							Pu-239	6.897 Bq
							Pulser	
							Thorium-230	7.167 Bq
							Uranium	
82236-334_00001	06/02/60		Eckert & Ziegler, Lot 82236-334		(Purchased Reagent)		Am-241	6.891 Bq
							Pu-239	6.664 Bq
							Pulser	
							Thorium-230	7.107 Bq
							Uranium	
82237-334_00003	06/01/60		Eckert & Ziegler, Lot 82237-334		(Purchased Reagent)		Am-241	5.608 Bq
							Pu-239	6.424 Bq
							Thorium-230	5.856 Bq
82240-334_00001	06/08/60		Eckert & Ziegler, Lot 82240-334		(Purchased Reagent)		Am-241	8.298 Bq
							Pu-239	7.163 Bq
							Thorium-230	6.304 Bq
82241-334_00001	06/08/60		Eckert & Ziegler, Lot 82241-334		(Purchased Reagent)		Am-241	6.638 Bq
							Pu-239	6.797 Bq
							Thorium-230	6.629 Bq
82242-334_00001	06/08/60		Eckert & Ziegler, Lot 82242-334		(Purchased Reagent)		Am-241	7.145 Bq
							Pu-239	6.414 Bq
							Thorium-230	6.583 Bq
82244-334_00001							Pulser	
							Uranium	
82245-334_00001							Pulser	
							Uranium	
82247-334_00001	06/10/60		Eckert & Ziegler, Lot 82247-334		(Purchased Reagent)		Am-241	6.291 Bq
							Pu-239	5.746 Bq
							Thorium-230	6.251 Bq
Alk Int._00009	02/19/15	08/19/14	DI Water, Lot 081914	1000 mL	Sodium Carb_00005	1 g	Alkalinity	1000 mg/L
							Bicarbonate Alkalinity as CaCO3	1000 mg/L
.Sodium Carb_00005	12/08/16		Malinckrodt, Lot K13607		(Purchased Reagent)		Alkalinity	100 %
							Bicarbonate Alkalinity as CaCO3	100 %

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
Hg QC Int._00449	12/04/14	12/03/14	2% Nitric Acid, Lot 377355	100 mL	HG QC_00005	0.1 mL	Mercury	0.1 ug/mL
.HG QC_00005	09/15/15	Leeman Labs, Lot 090414			(Purchased Reagent)		Mercury	100 ug/mL
Hg QC Int._00451	12/06/14	12/05/14	2% Nitric Acid, Lot 377355	100 mL	HG QC_00005	0.1 mL	Mercury	0.1 ug/mL
.HG QC_00005	09/15/15	Leeman Labs, Lot 090414			(Purchased Reagent)		Mercury	100 ug/mL
HNO3_00095	09/18/15	Marcon Chemicals, Lot 80824			(Purchased Reagent)		Nitric acid	16 mol/L
IC 2nd Source_00007	07/01/15	Inorganic Ventures, Lot H2-MEB536023			(Purchased Reagent)		Bromide	5000 ug/L
							Chloride	5000 ug/L
							Fluoride	2500 ug/L
							Nitrate as N	1000 ug/L
							Nitrite as N	400 ug/L
							Orthophosphate	20000 ug/L
							Sulfate	20000 ug/L
IC Cal High_00030	10/01/15	Inorganic Ventures, Lot H2-MEB549027			(Purchased Reagent)		Bromide	5000 ug/L
							Chloride	5000 ug/L
							Fluoride	2500 ug/L
							Nitrate as N	1000 ug/L
							Nitrite as N	400 ug/L
							Orthophosphate	20000 ug/L
							Sulfate	20000 ug/L
IC Cal High_00031	10/01/15	Inorganic Ventures, Lot H2-MEB549027			(Purchased Reagent)		Bromide	5000 ug/L
							Chloride	5000 ug/L
							Fluoride	2500 ug/L
							Nitrate as N	1000 ug/L
							Nitrite as N	400 ug/L
							Orthophosphate	20000 ug/L
							Sulfate	20000 ug/L
IC Cal High_00032	10/01/15	Inorganic Ventures, Lot H2-MEB549027			(Purchased Reagent)		Bromide	5000 ug/L
							Chloride	5000 ug/L
							Fluoride	2500 ug/L
							Sulfate	20000 ug/L
IC Cal Low_00005	02/01/15	Inorganic Ventures, Lot H2-MEB511047			(Purchased Reagent)		Bromide	5000 ug/L
							Chloride	4000 ug/L
							Fluoride	2000 ug/L
							Nitrate as N	400 ug/L
							Nitrite as N	400 ug/L
							Orthophosphate	10000 ug/L
							Sulfate	10000 ug/L
IC ClO3 Cal_00003	02/01/15	Inorganic Ventures, Lot G2-CLOX01097			(Purchased Reagent)		Chlorate	1000 ug/mL
IC ClO3 Int_00031	01/08/15	07/08/14	DI Water, Lot 070814	100 mL	IC ClO3 Cal_00003	10 mL	Chlorate	100 mg/L
.IC ClO3 Cal_00003	02/01/15	Inorganic Ventures, Lot G2-CLOX01097			(Purchased Reagent)		Chlorate	1000 ug/mL
IC MS Soln_00005	02/01/15	Inorganic Ventures, Lot H2-MEB511048			(Purchased Reagent)		Bromide	100 ug/mL
							Chloride	100 ug/mL

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Fluoride	100 ug/mL
							Nitrate as N	20 ug/mL
							Nitrite as N	5 ug/mL
							Orthophosphate	200 ug/mL
							Sulfate	200 ug/mL
ICP CAL1/LLC_00019	12/04/14	11/04/14	5% HCl/5%HN03, Lot 465252	1000 mL	ICPC13 LLC A_00003	2 mL	Aluminum	0.2 ug/mL
							Arsenic	0.01 ug/mL
							Barium	0.05 ug/mL
							Beryllium	0.005 ug/mL
							Boron	0.05 ug/mL
							Cadmium	0.005 ug/mL
							Calcium	1 ug/mL
							Chromium	0.01 ug/mL
							Cobalt	0.05 ug/mL
							Copper	0.025 ug/mL
							Iron	0.1 ug/mL
							Lead	0.01 ug/mL
							Magnesium	1 ug/mL
							Manganese	0.015 ug/mL
							Nickel	0.04 ug/mL
							Phosphorus	0.25 ug/mL
							Potassium	5 ug/mL
							Selenium	0.015 ug/mL
							Sodium	1 ug/mL
							Thallium	0.02 ug/mL
							Uranium	0.5 ug/mL
							Vanadium	0.05 ug/mL
							Zinc	0.02 ug/mL
					ICPC13 LLC B_00002	2 mL	Antimony	0.01 ug/mL
							Molybdenum	0.04 ug/mL
							Silicon	0.4 ug/mL
							Silver	0.01 ug/mL
							Tin	0.1 ug/mL
							Titanium	0.02 ug/mL
.ICPC13 LLC A_00003	09/01/15		AccuScience, Lot 1064407		(Purchased Reagent)		Aluminum	100 ug/mL
							Arsenic	5 ug/mL
							Barium	25 ug/mL
							Beryllium	2.5 ug/mL
							Boron	25 ug/mL
							Cadmium	2.5 ug/mL
							Calcium	500 ug/mL
							Chromium	5 ug/mL
							Cobalt	25 ug/mL
							Copper	12.5 ug/mL
							Iron	50 ug/mL
							Lead	5 ug/mL
							Magnesium	500 ug/mL

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Manganese	7.5 ug/mL
							Nickel	20 ug/mL
							Phosphorus	125 ug/mL
							Potassium	2500 ug/mL
							Selenium	7.5 ug/mL
							Sodium	500 ug/mL
							Thallium	10 ug/mL
							Uranium	250 ug/mL
							Vanadium	25 ug/mL
							Zinc	10 ug/mL
.ICPC13 LLC B_00002	09/01/15		AccuScience, Lot 1064407		(Purchased Reagent)		Antimony	5 ug/mL
							Molybdenum	20 ug/mL
							Silicon	200 ug/mL
							Silver	5 ug/mL
							Tin	50 ug/mL
							Titanium	10 ug/mL
ICP CAL1/LLC_00020	01/03/15	12/03/14	5% HCl/5%HN03, Lot 507678	1000 mL	ICPC13 LLC A_00003	2 mL	Aluminum	0.2 ug/mL
							Arsenic	0.01 ug/mL
							Barium	0.05 ug/mL
							Beryllium	0.005 ug/mL
							Boron	0.05 ug/mL
							Cadmium	0.005 ug/mL
							Calcium	1 ug/mL
							Chromium	0.01 ug/mL
							Cobalt	0.05 ug/mL
							Copper	0.025 ug/mL
							Iron	0.1 ug/mL
							Lead	0.01 ug/mL
							Magnesium	1 ug/mL
							Manganese	0.015 ug/mL
							Nickel	0.04 ug/mL
							Phosphorus	0.25 ug/mL
							Potassium	5 ug/mL
							Selenium	0.015 ug/mL
							Sodium	1 ug/mL
							Thallium	0.02 ug/mL
							Uranium	0.5 ug/mL
							Vanadium	0.05 ug/mL
							Zinc	0.02 ug/mL
					ICPC13 LLC B_00002	2 mL	Antimony	0.01 ug/mL
							Molybdenum	0.04 ug/mL
							Silicon	0.4 ug/mL
							Silver	0.01 ug/mL
							Tin	0.1 ug/mL
							Titanium	0.02 ug/mL
.ICPC13 LLC A_00003	09/01/15		AccuScience, Lot 1064407		(Purchased Reagent)		Aluminum	100 ug/mL
							Arsenic	5 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Barium	25 ug/mL
							Beryllium	2.5 ug/mL
							Boron	25 ug/mL
							Cadmium	2.5 ug/mL
							Calcium	500 ug/mL
							Chromium	5 ug/mL
							Cobalt	25 ug/mL
							Copper	12.5 ug/mL
							Iron	50 ug/mL
							Lead	5 ug/mL
							Magnesium	500 ug/mL
							Manganese	7.5 ug/mL
							Nickel	20 ug/mL
							Phosphorus	125 ug/mL
							Potassium	2500 ug/mL
							Selenium	7.5 ug/mL
							Sodium	500 ug/mL
							Thallium	10 ug/mL
							Uranium	250 ug/mL
							Vanadium	25 ug/mL
							Zinc	10 ug/mL
.ICPC13 LLC B_00002	09/01/15		AccuScience, Lot 1064407		(Purchased Reagent)		Antimony	5 ug/mL
							Molybdenum	20 ug/mL
							Silicon	200 ug/mL
							Silver	5 ug/mL
							Tin	50 ug/mL
							Titanium	10 ug/mL
ICP CAL2/CCV_00032	12/20/14	11/20/14	5% HCl/5@HN03, Lot 507678	1000 mL	ICPC13 CAL A_00002	5 mL	Antimony	1 ug/mL
							Molybdenum	1 ug/mL
							Silicon	5 ug/mL
							Silver	1 ug/mL
							Tin	5 ug/mL
							Titanium	5 ug/mL
					ICPC13 CAL B_00002	5 mL	Phosphorus	50 ug/mL
							Potassium	50 ug/mL
							Sodium	50 ug/mL
					ICPC13 CAL C_00002	5 mL	Aluminum	50 ug/mL
							Calcium	50 ug/mL
							Iron	50 ug/mL
							Magnesium	50 ug/mL
					ICPC13 CAL D_00002	5 mL	Barium	5 ug/mL
							Boron	5 ug/mL
							Lead	5 ug/mL
							Uranium	5 ug/mL
							Vanadium	5 ug/mL
							Zinc	5 ug/mL
					ICPC13 CAL E_00002	5 mL	Arsenic	5 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Beryllium	5 ug/mL
							Cadmium	5 ug/mL
							Chromium	5 ug/mL
							Cobalt	5 ug/mL
							Copper	5 ug/mL
							Manganese	5 ug/mL
							Nickel	5 ug/mL
							Selenium	1 ug/mL
							Thallium	1 ug/mL
.ICPC13 CAL A_00002	09/01/15		AccuScience, Lot 1064528		(Purchased Reagent)		Antimony	200 ug/mL
							Molybdenum	200 ug/mL
							Silicon	1000 ug/mL
							Silver	200 ug/mL
							Tin	1000 ug/mL
							Titanium	1000 ug/mL
.ICPC13 CAL B_00002	09/01/15		AccuScience, Lot 1064528		(Purchased Reagent)		Phosphorus	10000 ug/mL
							Potassium	10000 ug/mL
							Sodium	10000 ug/mL
.ICPC13 CAL C_00002	09/01/15		AccuScience, Lot 1064535		(Purchased Reagent)		Aluminum	10000 ug/mL
							Calcium	10000 ug/mL
							Iron	10000 ug/mL
							Magnesium	10000 ug/mL
.ICPC13 CAL D_00002	09/01/15		AccuScience, Lot 1064535		(Purchased Reagent)		Barium	1000 ug/mL
							Boron	1000 ug/mL
							Lead	1000 ug/mL
							Uranium	1000 ug/mL
							Vanadium	1000 ug/mL
							Zinc	1000 ug/mL
.ICPC13 CAL E_00002	09/01/15		AccuScience, Lot 1064534		(Purchased Reagent)		Arsenic	1000 ug/mL
							Beryllium	1000 ug/mL
							Cadmium	1000 ug/mL
							Chromium	1000 ug/mL
							Cobalt	1000 ug/mL
							Copper	1000 ug/mL
							Manganese	1000 ug/mL
							Nickel	1000 ug/mL
							Selenium	200 ug/mL
							Thallium	200 ug/mL
ICP CAL2/CCV_00033	01/03/15	12/03/14	5% HCl/5@HN03, Lot 507678	1000 mL	ICPC13 CAL A_00002	5 mL	Antimony	1 ug/mL
							Molybdenum	1 ug/mL
							Silicon	5 ug/mL
							Silver	1 ug/mL
							Tin	5 ug/mL
							Titanium	5 ug/mL
					ICPC13 CAL B_00002	5 mL	Phosphorus	50 ug/mL
							Potassium	50 ug/mL
							Sodium	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					ICPC13 CAL C_00002	5 mL	Aluminum	50 ug/mL
							Calcium	50 ug/mL
							Iron	50 ug/mL
							Magnesium	50 ug/mL
					ICPC13 CAL D_00002	5 mL	Barium	5 ug/mL
							Boron	5 ug/mL
							Lead	5 ug/mL
							Uranium	5 ug/mL
							Vanadium	5 ug/mL
							Zinc	5 ug/mL
					ICPC13 CAL E_00002	5 mL	Arsenic	5 ug/mL
							Beryllium	5 ug/mL
							Cadmium	5 ug/mL
							Chromium	5 ug/mL
							Cobalt	5 ug/mL
							Copper	5 ug/mL
							Manganese	5 ug/mL
							Nickel	5 ug/mL
							Selenium	1 ug/mL
							Thallium	1 ug/mL
.ICPC13 CAL A_00002	09/01/15		AccuScience, Lot 1064528		(Purchased Reagent)		Antimony	200 ug/mL
							Molybdenum	200 ug/mL
							Silicon	1000 ug/mL
							Silver	200 ug/mL
							Tin	1000 ug/mL
							Titanium	1000 ug/mL
.ICPC13 CAL B_00002	09/01/15		AccuScience, Lot 1064528		(Purchased Reagent)		Phosphorus	10000 ug/mL
							Potassium	10000 ug/mL
							Sodium	10000 ug/mL
.ICPC13 CAL C_00002	09/01/15		AccuScience, Lot 1064535		(Purchased Reagent)		Aluminum	10000 ug/mL
							Calcium	10000 ug/mL
							Iron	10000 ug/mL
							Magnesium	10000 ug/mL
.ICPC13 CAL D_00002	09/01/15		AccuScience, Lot 1064535		(Purchased Reagent)		Barium	1000 ug/mL
							Boron	1000 ug/mL
							Lead	1000 ug/mL
							Uranium	1000 ug/mL
							Vanadium	1000 ug/mL
							Zinc	1000 ug/mL
.ICPC13 CAL E_00002	09/01/15		AccuScience, Lot 1064534		(Purchased Reagent)		Arsenic	1000 ug/mL
							Beryllium	1000 ug/mL
							Cadmium	1000 ug/mL
							Chromium	1000 ug/mL
							Cobalt	1000 ug/mL
							Copper	1000 ug/mL
							Manganese	1000 ug/mL
							Nickel	1000 ug/mL
							Selenium	200 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Thallium	200 ug/mL
ICP CAL3\LRC_00017	12/04/14	11/04/14	5% HCl /5%HN03, Lot 465252	1000 mL	ICPC13 CAL A_00002	10 mL	Antimony	2 ug/mL
							Molybdenum	2 ug/mL
							Silicon	10 ug/mL
							Silver	2 ug/mL
							Tin	10 ug/mL
							Titanium	10 ug/mL
					ICPC13 CAL B_00002	10 mL	Phosphorus	100 ug/mL
							Potassium	100 ug/mL
							Sodium	100 ug/mL
					ICPC13 CAL C_00002	10 mL	Aluminum	100 ug/mL
							Calcium	100 ug/mL
							Iron	100 ug/mL
							Magnesium	100 ug/mL
					ICPC13 CAL D_00002	10 mL	Barium	10 ug/mL
							Boron	10 ug/mL
							Lead	10 ug/mL
							Uranium	10 ug/mL
							Vanadium	10 ug/mL
							Zinc	10 ug/mL
					ICPC13 CAL E_00002	10 mL	Arsenic	10 ug/mL
							Beryllium	10 ug/mL
							Cadmium	10 ug/mL
							Chromium	10 ug/mL
							Cobalt	10 ug/mL
							Copper	10 ug/mL
							Manganese	10 ug/mL
							Nickel	10 ug/mL
							Selenium	2 ug/mL
							Thallium	2 ug/mL
.ICPC13 CAL A_00002	09/01/15		AccuScience, Lot 1064528		(Purchased Reagent)		Antimony	200 ug/mL
							Molybdenum	200 ug/mL
							Silicon	1000 ug/mL
							Silver	200 ug/mL
							Tin	1000 ug/mL
							Titanium	1000 ug/mL
.ICPC13 CAL B_00002	09/01/15		AccuScience, Lot 1064528		(Purchased Reagent)		Phosphorus	10000 ug/mL
							Potassium	10000 ug/mL
							Sodium	10000 ug/mL
.ICPC13 CAL C_00002	09/01/15		AccuScience, Lot 1064535		(Purchased Reagent)		Aluminum	10000 ug/mL
							Calcium	10000 ug/mL
							Iron	10000 ug/mL
							Magnesium	10000 ug/mL
.ICPC13 CAL D_00002	09/01/15		AccuScience, Lot 1064535		(Purchased Reagent)		Barium	1000 ug/mL
							Boron	1000 ug/mL
							Lead	1000 ug/mL
							Uranium	1000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Vanadium	1000 ug/mL
							Zinc	1000 ug/mL
.ICPC13 CAL E_00002	09/01/15		AccuScience, Lot 1064534		(Purchased Reagent)		Arsenic	1000 ug/mL
							Beryllium	1000 ug/mL
							Cadmium	1000 ug/mL
							Chromium	1000 ug/mL
							Cobalt	1000 ug/mL
							Copper	1000 ug/mL
							Manganese	1000 ug/mL
							Nickel	1000 ug/mL
							Selenium	200 ug/mL
							Thallium	200 ug/mL
ICP CAL3\LRC_00018	01/03/15	12/03/14	5% HCl /5%HN03, Lot 507678	1000 mL	ICPC13 CAL A_00002	10 mL	Antimony	2 ug/mL
							Molybdenum	2 ug/mL
							Silicon	10 ug/mL
							Silver	2 ug/mL
							Tin	10 ug/mL
							Titanium	10 ug/mL
					ICPC13 CAL B_00002	10 mL	Phosphorus	100 ug/mL
							Potassium	100 ug/mL
							Sodium	100 ug/mL
					ICPC13 CAL C_00002	10 mL	Aluminum	100 ug/mL
							Calcium	100 ug/mL
							Iron	100 ug/mL
							Magnesium	100 ug/mL
					ICPC13 CAL D_00002	10 mL	Barium	10 ug/mL
							Boron	10 ug/mL
							Lead	10 ug/mL
							Uranium	10 ug/mL
							Vanadium	10 ug/mL
							Zinc	10 ug/mL
					ICPC13 CAL E_00002	10 mL	Arsenic	10 ug/mL
							Beryllium	10 ug/mL
							Cadmium	10 ug/mL
							Chromium	10 ug/mL
							Cobalt	10 ug/mL
							Copper	10 ug/mL
							Manganese	10 ug/mL
							Nickel	10 ug/mL
							Selenium	2 ug/mL
							Thallium	2 ug/mL
.ICPC13 CAL A_00002	09/01/15		AccuScience, Lot 1064528		(Purchased Reagent)		Antimony	200 ug/mL
							Molybdenum	200 ug/mL
							Silicon	1000 ug/mL
							Silver	200 ug/mL
							Tin	1000 ug/mL
							Titanium	1000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
.ICPC13 CAL B_00002	09/01/15		AccuScience, Lot 1064528		(Purchased Reagent)		Phosphorus	10000 ug/mL
							Potassium	10000 ug/mL
							Sodium	10000 ug/mL
.ICPC13 CAL C_00002	09/01/15		AccuScience, Lot 1064535		(Purchased Reagent)		Aluminum	10000 ug/mL
							Calcium	10000 ug/mL
							Iron	10000 ug/mL
							Magnesium	10000 ug/mL
.ICPC13 CAL D_00002	09/01/15		AccuScience, Lot 1064535		(Purchased Reagent)		Barium	1000 ug/mL
							Boron	1000 ug/mL
							Lead	1000 ug/mL
							Uranium	1000 ug/mL
							Vanadium	1000 ug/mL
							Zinc	1000 ug/mL
.ICPC13 CAL E_00002	09/01/15		AccuScience, Lot 1064534		(Purchased Reagent)		Arsenic	1000 ug/mL
							Beryllium	1000 ug/mL
							Cadmium	1000 ug/mL
							Chromium	1000 ug/mL
							Cobalt	1000 ug/mL
							Copper	1000 ug/mL
							Manganese	1000 ug/mL
							Nickel	1000 ug/mL
							Selenium	200 ug/mL
							Thallium	200 ug/mL
ICP ICV_00014	11/27/14	10/27/14	5% Nitric Acid, Lot 465252	1000 mL	ICPC ICV 1_00002	5 mL	Antimony	1 ug/mL
							Molybdenum	1 ug/mL
							Silicon	5 ug/mL
							Tin	5 ug/mL
							Titanium	5 ug/mL
					ICPC ICV 3_00002	5 mL	Aluminum	50 ug/mL
							Calcium	50 ug/mL
							Iron	50 ug/mL
							Sodium	50 ug/mL
					ICPC ICV 4_00002	5 mL	Arsenic	5 ug/mL
							Barium	5 ug/mL
							Beryllium	5 ug/mL
							Boron	5 ug/mL
							Cadmium	5 ug/mL
							Chromium	5 ug/mL
							Cobalt	5 ug/mL
							Copper	5 ug/mL
							Lead	5 ug/mL
							Manganese	5 ug/mL
							Nickel	5 ug/mL
							Phosphorus	5 ug/mL
							Selenium	1 ug/mL
							Silver	1 ug/mL
							Thallium	1 ug/mL

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Uranium	5 ug/mL
							Vanadium	5 ug/mL
							Zinc	5 ug/mL
					ICPC ICV2_00002	5 mL	Magnesium	50 ug/mL
							Potassium	50 ug/mL
.ICPC ICV 1_00002	11/01/15	Inorganic Venures, Lot H2-MEB550054			(Purchased Reagent)		Antimony	200 ug/mL
							Molybdenum	200 ug/mL
							Silicon	1000 ug/mL
							Tin	1000 ug/mL
							Titanium	1000 ug/mL
.ICPC ICV 3_00002	11/01/15	Inorganic Ventures, Lot H2-MEB550055			(Purchased Reagent)		Aluminum	10000 ug/mL
							Calcium	10000 ug/mL
							Iron	10000 ug/mL
							Sodium	10000 ug/mL
.ICPC ICV 4_00002	11/01/15	Inorganic Ventures, Lot H2-MEB5500053			(Purchased Reagent)		Arsenic	1000 ug/mL
							Barium	1000 ug/mL
							Beryllium	1000 ug/mL
							Boron	1000 ug/mL
							Cadmium	1000 ug/mL
							Chromium	1000 ug/mL
							Cobalt	1000 ug/mL
							Copper	1000 ug/mL
							Lead	1000 ug/mL
							Manganese	1000 ug/mL
							Nickel	1000 ug/mL
							Phosphorus	1000 ug/mL
							Selenium	200 ug/mL
							Silver	200 ug/mL
							Thallium	200 ug/mL
							Uranium	1000 ug/mL
							Vanadium	1000 ug/mL
							Zinc	1000 ug/mL
.ICPC ICV2_00002	11/01/15	Inorganic Ventures, Lot H2-MEB550056			(Purchased Reagent)		Magnesium	10000 ug/mL
							Potassium	10000 ug/mL
ICP ICV_00015	01/03/15	12/03/14	5% Nitric Acid, Lot 507678	1000 mL	ICPC ICV 1_00002	5 mL	Antimony	1 ug/mL
							Molybdenum	1 ug/mL
							Silicon	5 ug/mL
							Tin	5 ug/mL
							Titanium	5 ug/mL
					ICPC ICV 3_00002	5 mL	Aluminum	50 ug/mL
							Calcium	50 ug/mL
							Iron	50 ug/mL
							Sodium	50 ug/mL
					ICPC ICV 4_00002	5 mL	Arsenic	5 ug/mL
							Barium	5 ug/mL
							Beryllium	5 ug/mL
							Boron	5 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Cadmium	5 ug/mL
							Chromium	5 ug/mL
							Cobalt	5 ug/mL
							Copper	5 ug/mL
							Lead	5 ug/mL
							Manganese	5 ug/mL
							Nickel	5 ug/mL
							Phosphorus	5 ug/mL
							Selenium	1 ug/mL
							Silver	1 ug/mL
							Thallium	1 ug/mL
							Uranium	5 ug/mL
							Vanadium	5 ug/mL
							Zinc	5 ug/mL
					ICPC ICV2_00002	5 mL	Magnesium	50 ug/mL
							Potassium	50 ug/mL
.ICPC ICV 1_00002	11/01/15	Inorganic Venures, Lot H2-MEB550054			(Purchased Reagent)		Antimony	200 ug/mL
							Molybdenum	200 ug/mL
							Silicon	1000 ug/mL
							Tin	1000 ug/mL
							Titanium	1000 ug/mL
.ICPC ICV 3_00002	11/01/15	Inorganic Ventures, Lot H2-MEB550055			(Purchased Reagent)		Aluminum	10000 ug/mL
							Calcium	10000 ug/mL
							Iron	10000 ug/mL
							Sodium	10000 ug/mL
.ICPC ICV 4_00002	11/01/15	Inorganic Ventures, Lot H2-MEB5500053			(Purchased Reagent)		Arsenic	1000 ug/mL
							Barium	1000 ug/mL
							Beryllium	1000 ug/mL
							Boron	1000 ug/mL
							Cadmium	1000 ug/mL
							Chromium	1000 ug/mL
							Cobalt	1000 ug/mL
							Copper	1000 ug/mL
							Lead	1000 ug/mL
							Manganese	1000 ug/mL
							Nickel	1000 ug/mL
							Phosphorus	1000 ug/mL
							Selenium	200 ug/mL
							Silver	200 ug/mL
							Thallium	200 ug/mL
							Uranium	1000 ug/mL
							Vanadium	1000 ug/mL
							Zinc	1000 ug/mL
.ICPC ICV2_00002	11/01/15	Inorganic Ventures, Lot H2-MEB550056			(Purchased Reagent)		Magnesium	10000 ug/mL
							Potassium	10000 ug/mL
ICPC MIX AB_00047	12/04/14	11/04/14	5% HCl /5%HN03, Lot 465252	1000 mL	ICPC13 AB 1_00002	5 mL	Arsenic	2.5 ug/mL
							Barium	2.5 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Beryllium	2.5 ug/mL
							Boron	2.5 ug/mL
							Lead	2.5 ug/mL
							Selenium	0.5 ug/mL
							Uranium	2.5 ug/mL
							Vanadium	2.5 ug/mL
							Zinc	2.5 ug/mL
					ICPC13 AB 2_00002	5 mL	Antimony	0.5 ug/mL
							Cadmium	2.5 ug/mL
							Chromium	2.5 ug/mL
							Cobalt	2.5 ug/mL
							Copper	2.5 ug/mL
							Manganese	2.5 ug/mL
							Molybdenum	0.5 ug/mL
							Nickel	2.5 ug/mL
							Silicon	2.5 ug/mL
							Silver	0.5 ug/mL
							Thallium	0.5 ug/mL
							Tin	2.5 ug/mL
							Titanium	2.5 ug/mL
					ICPC13 ICSA 1_00002	5 mL	Phosphorus	100 ug/mL
							Potassium	100 ug/mL
							Sodium	100 ug/mL
					ICPC13 ICSA 2_00002	5 mL	Aluminum	100 ug/mL
							Calcium	100 ug/mL
							Iron	100 ug/mL
							Magnesium	100 ug/mL
.ICPC13 AB 1_00002	09/01/15		AccuScience, Lot 1064359		(Purchased Reagent)		Arsenic	500 ug/mL
							Barium	500 ug/mL
							Beryllium	500 ug/mL
							Boron	500 ug/mL
							Lead	500 ug/mL
							Selenium	100 ug/mL
							Uranium	500 ug/mL
							Vanadium	500 ug/mL
							Zinc	500 ug/mL
.ICPC13 AB 2_00002	09/01/15		AccuScience, Lot 1064359		(Purchased Reagent)		Antimony	100 ug/mL
							Cadmium	500 ug/mL
							Chromium	500 ug/mL
							Cobalt	500 ug/mL
							Copper	500 ug/mL
							Manganese	500 ug/mL
							Molybdenum	100 ug/mL
							Nickel	500 ug/mL
							Silicon	500 ug/mL
							Silver	100 ug/mL
							Thallium	100 ug/mL
							Tin	500 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Titanium	500 ug/mL
.ICPC13 ICSA 1_00002	09/01/15		AccuScience, Lot 1064353		(Purchased Reagent)		Phosphorus	20000 ug/mL
							Potassium	20000 ug/mL
							Sodium	20000 ug/mL
.ICPC13 ICSA 2_00002	09/01/15		AccuScience, Lot 1064353		(Purchased Reagent)		Aluminum	20000 ug/mL
							Calcium	20000 ug/mL
							Iron	20000 ug/mL
							Magnesium	20000 ug/mL
ICPC MIX AB_00048	01/03/15	12/03/14	5% HCl /5%HN03, Lot 507678	1000 mL	ICPC13 AB 1_00002	5 mL	Arsenic	2.5 ug/mL
							Barium	2.5 ug/mL
							Beryllium	2.5 ug/mL
							Boron	2.5 ug/mL
							Lead	2.5 ug/mL
							Selenium	0.5 ug/mL
							Uranium	2.5 ug/mL
							Vanadium	2.5 ug/mL
							Zinc	2.5 ug/mL
					ICPC13 AB 2_00002	5 mL	Antimony	0.5 ug/mL
							Cadmium	2.5 ug/mL
							Chromium	2.5 ug/mL
							Cobalt	2.5 ug/mL
							Copper	2.5 ug/mL
							Manganese	2.5 ug/mL
							Molybdenum	0.5 ug/mL
							Nickel	2.5 ug/mL
							Silicon	2.5 ug/mL
							Silver	0.5 ug/mL
							Thallium	0.5 ug/mL
							Tin	2.5 ug/mL
							Titanium	2.5 ug/mL
					ICPC13 ICSA 1_00002	5 mL	Phosphorus	100 ug/mL
							Potassium	100 ug/mL
							Sodium	100 ug/mL
					ICPC13 ICSA 2_00002	5 mL	Aluminum	100 ug/mL
							Calcium	100 ug/mL
							Iron	100 ug/mL
							Magnesium	100 ug/mL
.ICPC13 AB 1_00002	09/01/15		AccuScience, Lot 1064359		(Purchased Reagent)		Arsenic	500 ug/mL
							Barium	500 ug/mL
							Beryllium	500 ug/mL
							Boron	500 ug/mL
							Lead	500 ug/mL
							Selenium	100 ug/mL
							Uranium	500 ug/mL
							Vanadium	500 ug/mL
							Zinc	500 ug/mL
.ICPC13 AB 2_00002	09/01/15		AccuScience, Lot 1064359		(Purchased Reagent)		Antimony	100 ug/mL

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Cadmium	500 ug/mL
							Chromium	500 ug/mL
							Cobalt	500 ug/mL
							Copper	500 ug/mL
							Manganese	500 ug/mL
							Molybdenum	100 ug/mL
							Nickel	500 ug/mL
							Silicon	500 ug/mL
							Silver	100 ug/mL
							Thallium	100 ug/mL
							Tin	500 ug/mL
							Titanium	500 ug/mL
.ICPC13 ICSA 1_00002	09/01/15		AccuScience, Lot 1064353		(Purchased Reagent)		Phosphorus	20000 ug/mL
							Potassium	20000 ug/mL
							Sodium	20000 ug/mL
.ICPC13 ICSA 2_00002	09/01/15		AccuScience, Lot 1064353		(Purchased Reagent)		Aluminum	20000 ug/mL
							Calcium	20000 ug/mL
							Iron	20000 ug/mL
							Magnesium	20000 ug/mL
ICPC MIX ICSA_00043	12/04/14	11/04/14	5% HCl/5%HN03, Lot 465252	1000 mL	ICPC13 ICSA 1_00002	5 mL	Phosphorus	100 ug/mL
							Potassium	100 ug/mL
							Sodium	100 ug/mL
					ICPC13 ICSA 2_00002	5 mL	Aluminum	100 ug/mL
							Calcium	100 ug/mL
							Iron	100 ug/mL
							Magnesium	100 ug/mL
.ICPC13 ICSA 1_00002	09/01/15		AccuScience, Lot 1064353		(Purchased Reagent)		Phosphorus	20000 ug/mL
							Potassium	20000 ug/mL
							Sodium	20000 ug/mL
.ICPC13 ICSA 2_00002	09/01/15		AccuScience, Lot 1064353		(Purchased Reagent)		Aluminum	20000 ug/mL
							Calcium	20000 ug/mL
							Iron	20000 ug/mL
							Magnesium	20000 ug/mL
ICPC MIX ICSA_00044	01/03/15	12/03/14	5% HCl/5%HN03, Lot 507678	1000 mL	ICPC13 ICSA 1_00002	5 mL	Phosphorus	100 ug/mL
							Potassium	100 ug/mL
							Sodium	100 ug/mL
					ICPC13 ICSA 2_00002	5 mL	Aluminum	100 ug/mL
							Calcium	100 ug/mL
							Iron	100 ug/mL
							Magnesium	100 ug/mL
.ICPC13 ICSA 1_00002	09/01/15		AccuScience, Lot 1064353		(Purchased Reagent)		Phosphorus	20000 ug/mL
							Potassium	20000 ug/mL
							Sodium	20000 ug/mL
.ICPC13 ICSA 2_00002	09/01/15		AccuScience, Lot 1064353		(Purchased Reagent)		Aluminum	20000 ug/mL
							Calcium	20000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Iron	20000 ug/mL
							Magnesium	20000 ug/mL
pH Buffer 7SS_00020	11/24/15		Ricca, Lot 1404B94		(Purchased Reagent)		pH	7 SU
PREP 1 and 2_00006	11/07/15		AccuScience, Lot 1067570		(Purchased Reagent)		Aluminum	2000 mg/L
							Antimony	100 mg/L
							Arsenic	200 mg/L
							Barium	200 mg/L
							Beryllium	200 mg/L
							Bi	200 mg/L
							Boron	400 mg/L
							Cadmium	200 mg/L
							Calcium	2000 mg/L
							Chromium	200 mg/L
							Cobalt	200 mg/L
							Copper	200 mg/L
							Iron	2000 mg/L
							Lead	200 mg/L
							Li	200 mg/L
							Magnesium	2000 mg/L
							Manganese	200 mg/L
							Molybdenum	100 mg/L
							Nb	100 mg/L
							Nickel	200 mg/L
							Phosphorus	200 mg/L
							Potassium	2000 mg/L
							Selenium	100 mg/L
							Silver	40 mg/L
							Sm	200 mg/L
							Sodium	2000 mg/L
							Sr	200 mg/L
							Sulfur	2000 mg/L
							Th	200 mg/L
							Thallium	40 mg/L
							Tin	200 mg/L
							Titanium	200 mg/L
							Uranium	200 mg/L
							Vanadium	200 mg/L
							W	200 mg/L
							Zinc	200 mg/L
							Zr	200 mg/L
Sr-90_00004							Gross Alpha	
					Sr-90_00001	5.0139 g	Gross Beta	45120.6 dpm/mL
							Sr	22560.3 dpm/mL
							Sr-90	22560.3 dpm/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
.Sr-90_00001	09/17/59	Eckert & Ziegler, Lot 80573-334			(Purchased Reagent)		Gross Beta	14998.5 Bq/g
							Sr	7499.25 Bq/g
							Sr-90	7499.25 Bq/g
Sr-90_00018							Gross Alpha	
					Sr-90_00017	4.9997 g	Gross Beta	44774.2 dpm/mL
							Sr-90	22387.1 dpm/mL
.Sr-90_00017	11/29/62	Analytics, Lot 92352			(Purchased Reagent)		Gross Beta	14925.6 Bq/g
							Sr-90	7462.82 Bq/g
Sr-90_00023	04/23/15	04/22/14	0.1M HCl, Lot n/a	500 mL	Sr-90_00018	0.5 mL	Gross Beta	44.7742 dpm/mL
							Sr-90	22.3871 dpm/mL
.Sr-90_00018	11/29/62	11/28/12	0.1M HCL, Lot 0	100 mL	Sr-90_00017	4.9997 g	Gross Beta	44774.2 dpm/mL
							Sr-90	22387.1 dpm/mL
..Sr-90_00017	11/29/62	Analytics, Lot 92352			(Purchased Reagent)		Gross Beta	14925.6 Bq/g
							Sr-90	7462.82 Bq/g
STD SI_00009	10/01/15	INORGANIC VENTURE, Lot G2-SI03029			(Purchased Reagent)		Silicon	1000 ug/mL
TDS LCS_00036	09/02/15	09/02/14	DI Water, Lot 090214	1000 mL	NaCl_00002	0.5 g	Total Dissolved Solids (TDS)	500 mg/L
.NaCl_00002	02/01/22	Mallinckrodt, Lot J280620			(Purchased Reagent)		Total Dissolved Solids (TDS)	1 g/g
Th-229_00018	09/02/15	08/20/14	0.1M HNO3, Lot n/a	500 mL	Th-229_00017	15 mL	At-217	67.2296 dpm/mL
							Thorium-229	67.2296 dpm/mL
.Th-229_00017	08/06/64	08/20/14	0.1M HNO3, Lot n/a	100 mL	Th-229_00016	5.0464 g	At-217	2240.99 dpm/mL
							Thorium-229	2240.99 dpm/mL
..Th-229_00016	08/06/64	Analytics, Lot 97790			(Purchased Reagent)		At-217	740.127 Bq/g
							Thorium-229	740.127 Bq/g
Th-230_00003							Gross Beta	
					Th-230_00001	5.0878 g	Gross Alpha	2397.01 dpm/mL
							Thorium-230	2397.01 dpm/mL
.Th-230_00001	04/11/61	Eckert & Ziegler, Lot 84460-334			(Purchased Reagent)		Gross Alpha	785.217 Bq/g
							Thorium-230	785.217 Bq/g
Th-230_00016							Gross Beta	
					Th-230_00015	5.0489 g	Gross Alpha	2374.49 dpm/mL
							Thorium-230	2374.49 dpm/mL
.Th-230_00015	11/29/62	Analytics, Lot 92523			(Purchased Reagent)		Gross Alpha	783.829 Bq/g
							Thorium-230	783.829 Bq/g

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
Th-230_00024	09/25/15	09/22/14	1M HNO3, Lot 0	250 mL	Th-230_00019	2.5 mL	Gross Alpha	22.2823 dpm/mL
							Thorium-230	22.2823 dpm/mL
.Th-230_00019	08/08/63	08/13/13	1M HNO3, Lot n/a	100 mL	Th-230_00018	5.0731 mL	Gross Alpha	2228.23 dpm/mL
							Thorium-230	2228.23 dpm/mL
..Th-230_00018	08/08/63	Eckert & Ziegler Analytics, Lot 92776			(Purchased Reagent)		Gross Alpha	43922.5 dpm/g
							Thorium-230	43922.5 dpm/g
Th-230_00025	10/14/15	09/22/14	1M HNO3, Lot 0	200 mL	Th-230_00019	4 mL	Gross Alpha	44.5646 dpm/mL
							Thorium-230	44.5646 dpm/mL
.Th-230_00019	08/08/63	08/13/13	1M HNO3, Lot n/a	100 mL	Th-230_00018	5.0731 mL	Gross Alpha	2228.23 dpm/mL
							Thorium-230	2228.23 dpm/mL
..Th-230_00018	08/08/63	Eckert & Ziegler Analytics, Lot 92776			(Purchased Reagent)		Gross Alpha	43922.5 dpm/g
							Thorium-230	43922.5 dpm/g
U-232_00028	09/30/15	09/23/14	DI Water, Lot 0	250 mL	U-232_00009	2 mL	Uranium-232	82.2457 dpm/mL
.U-232_00009	08/25/61	08/29/11	1M HNO3, Lot 0	100 mL	U-232_00003	5.1609 g	Uranium-232	10280.7 dpm/mL
..U-232_00003	08/25/61	Eckert & Ziegler, Lot 85539-334			(Purchased Reagent)		Uranium-232	3320.07 Bq/g
UNAT_00009	05/28/15	05/23/14	1M HNO3, Lot n/a	200 mL	UNAT Parent_00001	20 mL	Uranium-233/234	70.6912 dpm/mL
							Uranium-235/236	3.37064 dpm/mL
							Uranium-238	72.265 dpm/mL
.UNAT Parent_00001	03/30/58	05/03/13	1M HNO3, Lot n/a	200 mL	UNAT Ampoule_00001	19.2509 g	Uranium-233/234	706.912 dpm/mL
							Uranium-235/236	33.7064 dpm/mL
							Uranium-238	722.65 dpm/mL
..UNAT Ampoule_00001	03/30/58	New Brunswick Lab, Lot CRM 145			(Purchased Reagent)		Uranium-233/234	7344.2 dpm/g
							Uranium-235/236	350.18 dpm/g
							Uranium-238	7507.7 dpm/g

Reagent

82232-334_00001

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CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

82232-334

24.1 mm Diameter x 0.65 mm Thick Stainless Steel Disk

Customer: Test America/St. Louis
P.O. No.: 2355182, Item 1

This standard radionuclide source was prepared by electrodeposition onto a stainless steel disk. Total alpha activity was determined with a ZnS scintillation detector. Radionuclide activities and impurities were calculated from the total activity and the fraction of activity for each radionuclide determined by alpha spectroscopy. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 1, February, 1979, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Reference Date: 3-Jun-2010 12:00 PM EST

Isotope	Activity (Bq)	Energy Range (keV)	Half-Life, years	Uncertainty* Type (%) u_A	u_B	U
Th-230	7.630E+00	4420-4800	7.540E+04	0.7	1.1	2.6
Pu-239	7.137E+00	4950-5240	2.410E+04	0.7	1.1	2.6
Am-241	7.281E+00	5280-5600	4.326E+02	0.7	1.1	2.6
Total Activity	2.210E+01	3000-8000		0.4	1.1	2.3

***Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

(Certificate continued on reverse side)

ACCREDITED SOURCE CALIBRATION LABORATORY HEALTH PHYSICS SOCIETY FOUNDED 1956

Comments:
Diameter of active area: 19 mm. Disk mounted on customer supplied disk 31.8 mm diameter x 0.45 mm thick stainless steel disk.

CAUTION: Active material deposited on the unmarked surface. Handle carefully to prevent scratching or damaging the active surface of this source (i.e., use Teflon coated forceps). Store in the container provided when not in use.

Source Calibrated by: _____
A. Chen, Spectroscopist

QA Approved: _____ Date: 06-24-2010
E. A. Taskaev, QA Manager Alternate

Reagent

82233-334_00001

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CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

82233-334

24.1 mm Diameter x 0.65 mm Thick Stainless Steel Disk

Customer: Test America/St. Louis
P.O. No.: 2355182, Item 1

This standard radionuclide source was prepared by electrodeposition onto a stainless steel disk. Total alpha activity was determined with a ZnS scintillation detector. Radionuclide activities and impurities were calculated from the total activity and the fraction of activity for each radionuclide determined by alpha spectroscopy. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 1, February, 1979, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Reference Date: 3-Jun-2010 12:00 PM EST

Isotope	Activity (Bq)	Energy Range (keV)	Half-Life, years	Uncertainty* Type (%) u_A	u_B	U
Th-230	4.950E+00	4420-4800	7.540E+04	0.8	1.1	2.7
Pu-239	6.064E+00	4950-5240	2.410E+04	0.7	1.1	2.6
Am-241	5.114E+00	5280-5600	4.326E+02	0.8	1.1	2.7
Total Activity	1.616E+01	3000-8000		0.1	1.1	2.2

***Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

(Certificate continued on reverse side)

ACCREDITED SOURCE CALIBRATION LABORATORY HEALTH PHYSICS SOCIETY FOUNDED 1956

Comments:
Diameter of active area: 19 mm. Disk mounted on customer supplied disk 31.8 mm diameter x 0.45 mm thick stainless steel disk.

CAUTION: Active material deposited on the unmarked surface. Handle carefully to prevent scratching or damaging the active surface of this source (i.e., use Teflon coated forceps). Store in the container provided when not in use.

Source Calibrated by: _____
A. Chen, Spectroscopist

QA Approved: _____ Date: 06-24-2010
E. A. Taskaev, QA Manager Alternate

Reagent

82234-334_00001

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CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

82234-334

24.1 mm Diameter x 0.65 mm Thick Stainless Steel Disk

Customer: Test America/St. Louis
P.O. No.: 2355182, Item 1

This standard radionuclide source was prepared by electrodeposition onto a stainless steel disk. Total alpha activity was determined with a ZnS scintillation detector. Radionuclide activities and impurities were calculated from the total activity and the fraction of activity for each radionuclide determined by alpha spectroscopy. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 1, February, 1979, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Reference Date: 2-Jun-2010 12:00 PM EST

Isotope	Activity (Bq)	Energy Range (keV)	Half-Life, years	Uncertainty* Type (%) u_A	u_B	U
Th-230	5.685E+00	4420-4800	7.540E+04	0.9	1.1	2.8
Pu-239	5.936E+00	4950-5240	2.410E+04	0.9	1.1	2.8
Am-241	5.652E+00	5280-5600	4.326E+02	0.9	1.1	2.8
Total Activity	1.732E+01	3000-8000		0.5	1.1	2.4

***Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

(Certificate continued on reverse side)

ACCREDITED SOURCE CALIBRATION LABORATORY HEALTH PHYSICS SOCIETY FOUNDED 1956

Comments:
Diameter of active area: 19 mm. Disk mounted on customer supplied disk 31.8 mm diameter x 0.45 mm thick stainless steel disk.

CAUTION: Active material deposited on the unmarked surface. Handle carefully to prevent scratching or damaging the active surface of this source (i.e., use Teflon coated forceps). Store in the container provided when not in use.

Source Calibrated by: _____
A. Chen, Spectroscopist

QA Approved: _____ Date: 06-24-2010
E. A. Taskaev, QA Manager Alternate

Reagent

82235-334_00001

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CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

82235-334

24.1 mm Diameter x 0.65 mm Thick Stainless Steel Disk

Customer: Test America/St. Louis
P.O. No.: 2355182, Item 1

This standard radionuclide source was prepared by electrodeposition onto a stainless steel disk. Total alpha activity was determined with a ZnS scintillation detector. Radionuclide activities and impurities were calculated from the total activity and the fraction of activity for each radionuclide determined by alpha spectroscopy. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 1, February, 1979, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Reference Date: 4-Jun-2010 12:00 PM EST

Isotope	Activity (Bq)	Energy Range (keV)	Half-Life, years	Uncertainty* Type (%) u_A	u_B	U
Th-230	7.167E+00	4420-4800	7.540E+04	0.8	1.1	2.7
Pu-239	6.897E+00	4950-5240	2.410E+04	0.8	1.1	2.7
Am-241	7.466E+00	5280-5600	4.326E+02	0.8	1.1	2.7
Total Activity	2.161E+01	3000-8000		0.5	1.1	2.4

***Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

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ACCREDITED SOURCE CALIBRATION LABORATORY
HEALTH PHYSICS SOCIETY
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Comments:
Diameter of active area: 19 mm. Disk mounted on customer supplied disk 31.8 mm diameter x 0.45 mm thick stainless steel disk.

CAUTION: Active material deposited on the unmarked surface. Handle carefully to prevent scratching or damaging the active surface of this source (i.e., use Teflon coated forceps). Store in the container provided when not in use.

Source Calibrated by: _____
A. Chen, Spectroscopist

QA Approved: _____ Date: 06-24-2010
E. A. Taskaev, QA Manager Alternate

Reagent

82236-334_00001

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CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

82236-334

24.1 mm Diameter x 0.65 mm Thick Stainless Steel Disk

Customer: Test America/St. Louis
P.O. No.: 2355182, Item 1

This standard radionuclide source was prepared by electrodeposition onto a stainless steel disk. Total alpha activity was determined with a ZnS scintillation detector. Radionuclide activities and impurities were calculated from the total activity and the fraction of activity for each radionuclide determined by alpha spectroscopy. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 1, February, 1979, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Reference Date: 2-Jun-2010 12:00 PM EST

Isotope	Activity (Bq)	Energy Range (keV)	Half-Life, years	Uncertainty* Type (%) u_A	u_B	U
Th-230	7.107E+00	4420-4800	7.540E+04	0.7	1.1	2.6
Pu-239	6.664E+00	4950-5240	2.410E+04	0.8	1.1	2.7
Am-241	6.891E+00	5280-5600	4.326E+02	0.7	1.1	2.6
Total Activity	2.071E+01	3000-8000		0.4	1.1	2.3

***Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

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ACCREDITED SOURCE CALIBRATION LABORATORY HEALTH PHYSICS SOCIETY FOUNDED 1958

Comments:
Diameter of active area: 19 mm. Disk mounted on customer supplied disk 31.8 mm diameter x 0.46 mm thick stainless steel disk.

CAUTION: Active material deposited on the unmarked surface. Handle carefully to prevent scratching or damaging the active surface of this source (i.e., use Teflon coated forceps). Store in the container provided when not in use.

Source Calibrated by: _____
A. Chen, Spectroscopist

QA Approved: _____ Date: 06-24-2010
E. A. Taskaev, QA Manager Alternate

Reagent

82237-334_00003

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CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

82237-334

24.1 mm Diameter x 0.65 mm Thick Stainless Steel Disk

Customer: Test America/St. Louis
P.O. No.: 2355182, Item 1

This standard radionuclide source was prepared by electrodeposition onto a stainless steel disk. Total alpha activity was determined with a ZnS scintillation detector. Radionuclide activities and impurities were calculated from the total activity and the fraction of activity for each radionuclide determined by alpha spectroscopy. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 1, February, 1979, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Reference Date: 1-Jun-2010 12:00 PM EST

Isotope	Activity (Bq)	Energy Range (keV)	Half-Life, years	Uncertainty* Type (%) u_A	u_B	U
Th-230	5.856E+00	4420-4800	7.540E+04	1.0	1.1	3.0
Pu-239	6.424E+00	4950-5240	2.410E+04	0.9	1.1	2.8
Am-241	5.608E+00	5280-5600	4.326E+02	1.0	1.1	3.0
Total Activity	1.793E+01	3000-8000		0.6	1.1	2.5

***Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

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ACCREDITED SOURCE CALIBRATION LABORATORY — HEALTH PHYSICS SOCIETY — FOUNDED 1958

Comments:
Diameter of active area: 19 mm. Disk mounted on customer supplied disk 31.8 mm diameter x 0.45 mm thick stainless steel disk.

CAUTION: Active material deposited on the unmarked surface. Handle carefully to prevent scratching or damaging the active surface of this source (i.e., use Teflon coated forceps). Store in the container provided when not in use.

Source Calibrated by: _____
A. Chen, Spectroscopist

QA Approved: _____ Date: 06-24-2010
E. A. Taskaev, QA Manager Alternate

Reagent

82240-334_00001

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CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

82240-334

24.1 mm Diameter x 0.65 mm Thick Stainless Steel Disk

Customer: Test America/St. Louis
P.O. No.: 2355182, Item 1

This standard radionuclide source was prepared by electrodeposition onto a stainless steel disk. Total alpha activity was determined with a ZnS scintillation detector. Radionuclide activities and impurities were calculated from the total activity and the fraction of activity for each radionuclide determined by alpha spectroscopy. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 1, February, 1979, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Reference Date: 8-Jun-2010 12:00 PM EST

Isotope	Activity (Bq)	Energy Range (keV)	Half-Life, years	Uncertainty* Type (%) u_A	u_B	U
Th-230	6.304E+00	4420-4800	7.540E+04	0.9	1.1	2.8
Pu-239	7.163E+00	4950-5240	2.410E+04	0.8	1.1	2.7
Am-241	8.298E+00	5280-5600	4.326E+02	0.8	1.1	2.7
Total Activity	2.182E+01	3000-8000		0.5	1.1	2.4

***Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

(Certificate continued on reverse side)

ACCREDITED SOURCE CALIBRATION LABORATORY HEALTH PHYSICS SOCIETY FOUNDED 1958

Comments:
Diameter of active area: 19 mm. Disk mounted on customer supplied disk 31.8 mm diameter x 0.45 mm thick stainless steel disk.

CAUTION: Active material deposited on the unmarked surface. Handle carefully to prevent scratching or damaging the active surface of this source (i.e., use Teflon coated forceps). Store in the container provided when not in use.

Source Calibrated by: _____
A. Chen, Spectroscopist

QA Approved: _____ Date: 06-24-2010
E. A. Taskaev, QA Manager Alternate

Reagent

82241-334_00001

Eckert & Ziegler
Analytics

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318
Tel 404•352•8677
Fax 404•352•2837
www.analyticsinc.com

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

82241-334

24.1 mm Diameter x 0.65 mm Thick Stainless Steel Disk

Customer: Test America/St. Louis
P.O. No.: 2355182, Item 1

This standard radionuclide source was prepared by electrodeposition onto a stainless steel disk. Total alpha activity was determined with a ZnS scintillation detector. Radionuclide activities and impurities were calculated from the total activity and the fraction of activity for each radionuclide determined by alpha spectroscopy. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 1, February, 1979, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Reference Date: 8-Jun-2010 12:00 PM EST

Isotope	Activity (Bq)	Energy Range (keV)	Half-Life, years	Uncertainty* Type (%) u_A	u_B	U
Th-230	6.629E+00	4420-4800	7.540E+04	0.8	1.1	2.7
Pu-239	6.797E+00	4950-5240	2.410E+04	0.8	1.1	2.7
Am-241	6.638E+00	5280-5600	4.326E+02	0.8	1.1	2.7
Total Activity	2.011E+01	3000-8000		0.4	1.1	2.3

***Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

(Certificate continued on reverse side)

ACCREDITED SOURCE CALIBRATION LABORATORY — HEALTH PHYSICS SOCIETY — FOUNDED 1956

Comments:
Diameter of active area: 19 mm. Disk mounted on customer supplied disk 31.8 mm diameter x 0.45 mm thick stainless steel disk.

CAUTION: Active material deposited on the unmarked surface. Handle carefully to prevent scratching or damaging the active surface of this source (i.e., use Teflon coated forceps). Store in the container provided when not in use.

Source Calibrated by: _____
A. Chen, Spectroscopist

QA Approved: _____ Date: 06-24-2010
E. A. Taskaev, QA Manager Alternate

Reagent

82242-334_00001

Eckert & Ziegler
Analytics

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318
Tel 404•352•8677
Fax 404•352•2837
www.analyticsinc.com

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

82242-334

24.1 mm Diameter x 0.65 mm Thick Stainless Steel Disk

Customer: Test America/St. Louis
P.O. No.: 2355182, Item 1

This standard radionuclide source was prepared by electrodeposition onto a stainless steel disk. Total alpha activity was determined with a ZnS scintillation detector. Radionuclide activities and impurities were calculated from the total activity and the fraction of activity for each radionuclide determined by alpha spectroscopy. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 1, February, 1979, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Reference Date: 8-Jun-2010 12:00 PM EST

Isotope	Activity (Bq)	Energy Range (keV)	Half-Life, years	Uncertainty* Type (%) u_A	u_B	U
Th-230	6.583E+00	4420-4800	7.540E+04	0.9	1.1	2.8
Pu-239	6.414E+00	4950-5240	2.410E+04	0.9	1.1	2.8
Am-241	7.145E+00	5280-5600	4.326E+02	0.9	1.1	2.8
Total Activity	2.018E+01	3000-8000		0.6	1.1	2.5

***Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

(Certificate continued on reverse side)

ACCREDITED SOURCE CALIBRATION LABORATORY
HEALTH PHYSICS SOCIETY
FOUNDED 1958

Comments:
Diameter of active area: 19 mm. Disk mounted on customer supplied disk 31.8 mm diameter x 0.45 mm thick stainless steel disk.

CAUTION: Active material deposited on the unmarked surface. Handle carefully to prevent scratching or damaging the active surface of this source (i.e., use Teflon coated forceps). Store in the container provided when not in use.

Source Calibrated by: _____
A. Chen, Spectroscopist

QA Approved: _____ Date: 06-24-2010
E. A. Taskaev, QA Manager Alternate

Reagent

82244-334_00001

Eckert & Ziegler
Analytics

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318
Tel 404•352•8677
Fax 404•352•2837
www.analyticsinc.com

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

82244-334

24.1 mm Diameter x 0.65 mm Thick Stainless Steel Disk

Customer: Test America/St. Louis
P.O. No.: 2355182, Item 1

This standard radionuclide source was prepared by electrodeposition onto a stainless steel disk. Total alpha activity was determined with a ZnS scintillation detector. Radionuclide activities and impurities were calculated from the total activity and the fraction of activity for each radionuclide determined by alpha spectroscopy. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 1, February, 1979, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Reference Date: 9-Jun-2010 12:00 PM EST

Isotope	Activity (Bq)	Energy Range (keV)	Half-Life, years	Uncertainty* Type (%) u_A	u_B	U
Th-230	7.352E+00	4420-4800	7.540E+04	0.8	1.1	2.7
Pu-239	6.717E+00	4950-5240	2.410E+04	0.9	1.1	2.8
Am-241	6.897E+00	5280-5600	4.326E+02	0.9	1.1	2.8
Total Activity	2.101E+01	3000-8000		0.6	1.1	2.5

***Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

(Certificate continued on reverse side)

ACCREDITED SOURCE CALIBRATION LABORATORY
HEALTH PHYSICS SOCIETY
FOUNDED 1956

Comments:
Diameter of active area: 19 mm. Disk mounted on customer supplied disk 31.8 mm diameter x 0.45 mm thick stainless steel disk.

CAUTION: Active material deposited on the unmarked surface. Handle carefully to prevent scratching or damaging the active surface of this source (i.e., use Teflon coated forceps). Store in the container provided when not in use.

Source Calibrated by: _____
A. Chen, Spectroscopist

QA Approved: _____ Date: 06-24-2010
E. A. Taskaev, QA Manager Alternate

Reagent

82245-334_00001

Eckert & Ziegler
Analytics

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318
Tel 404•352•8677
Fax 404•352•2837
www.analyticsinc.com

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

82245-334

24.1 mm Diameter x 0.65 mm Thick Stainless Steel Disk

Customer: Test America/St. Louis
P.O. No.: 2355182, Item 1

This standard radionuclide source was prepared by electrodeposition onto a stainless steel disk. Total alpha activity was determined with a ZnS scintillation detector. Radionuclide activities and impurities were calculated from the total activity and the fraction of activity for each radionuclide determined by alpha spectroscopy. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 1, February, 1979, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Reference Date: 9-Jun-2010 12:00 PM EST

Isotope	Activity (Bq)	Energy Range (keV)	Half-Life, years	Uncertainty* Type (%) u_A	u_B	U
Th-230	6.727E+00	4420-4800	7.540E+04	1.0	1.1	3.0
Pu-239	5.437E+00	4950-5240	2.410E+04	1.1	1.1	3.1
Am-241	5.528E+00	5280-5600	4.326E+02	1.1	1.1	3.1
Total Activity	1.773E+01	3000-8000		0.8	1.1	2.7

***Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

(Certificate continued on reverse side)

ACCREDITED SOURCE CALIBRATION LABORATORY — HEALTH PHYSICS SOCIETY — FOUNDED 1956

Comments:
Diameter of active area: 19 mm. Disk mounted on customer supplied disk 31.8 mm diameter x 0.45 mm thick stainless steel disk.

CAUTION: Active material deposited on the unmarked surface. Handle carefully to prevent scratching or damaging the active surface of this source (i.e., use Teflon coated forceps). Store in the container provided when not in use.

Source Calibrated by: _____
A. Chen, Spectroscopist

QA Approved: _____ Date: 06-24-2010
E. A. Taskaev, QA Manager Alternate

Reagent

82247-334_00001

Eckert & Ziegler
Analytics

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318
Tel 404•352•8677
Fax 404•352•2837
www.analyticsinc.com

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

82247-334

24.1 mm Diameter x 0.65 mm Thick Stainless Steel Disk

Customer: Test America/St. Louis
P.O. No.: 2355182, Item 1

This standard radionuclide source was prepared by electrodeposition onto a stainless steel disk. Total alpha activity was determined with a ZnS scintillation detector. Radionuclide activities and impurities were calculated from the total activity and the fraction of activity for each radionuclide determined by alpha spectroscopy. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 1, February, 1979, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Reference Date: 10-Jun-2010 12:00 PM EST

Isotope	Activity (Bq)	Energy Range (keV)	Half-Life, years	Uncertainty* Type (%) u_A	u_B	U
Th-230	6.251E+00	4420-4800	7.540E+04	0.9	1.1	2.8
Pu-239	5.746E+00	4950-5240	2.410E+04	0.9	1.1	2.8
Am-241	6.291E+00	5280-5600	4.326E+02	0.9	1.1	2.8
Total Activity	1.832E+01	3000-8000		0.6	1.1	2.5

***Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

(Certificate continued on reverse side)

ACCREDITED SOURCE CALIBRATION LABORATORY — HEALTH PHYSICS SOCIETY — FOUNDED 1956

Comments:
Diameter of active area: 19 mm. Disk mounted on customer supplied disk 31.8 mm diameter x 0.45 mm thick stainless steel disk.

CAUTION: Active material deposited on the unmarked surface. Handle carefully to prevent scratching or damaging the active surface of this source (i.e., use Teflon coated forceps). Store in the container provided when not in use.

Source Calibrated by: _____
A. Chen, Spectroscopist

QA Approved: _____ Date: 06-24-2010
E. A. Taskaev, QA Manager Alternate

Reagent

HG QC_00005

PLASMA-PURE ™

Standard Certificate

450487
ID: HG QC_00005
Exp:09/15/15 Prpd:MTS Opn:09/15/14
HG QC 100PPM

Catalog Number: 602-00064 **Lot Number:** 090414

Starting Material: 99.9999% purity Hg metal **Diluent/Matrix:** 5% HNO_3

Preparation Date: Sept 14 **Expiration Date:** Sept 16

Element	Concentration
Hg	100.0 ± 0.2 µg/ml

Residual Impurities *	Concentration
None Detected	

* **Impurities were determined via ICP Emission Spectroscopy. Only elements detected are reported.**

Traceability

1. **This standard is certified using wet chemistry assay procedures and/or plasma emission spectroscopy, traceable to primary or well-characterized secondary standards. Traceable to:** NIST SRM 3133, Hg Lot#991304
2. **Analytical balances are routinely calibrated using NIST weight sets.**

Certification

Leeman Labs, Inc. certifies that PLASMA-PURE Standards have been formulated to the concentrations listed above (±0.5% of reported value). This certification does not apply and will be considered null and void if PLASMA-PURE Standards are used in a manner or in an environment not consistent with their intended purpose or are modified by the Customer in any manner.

Limitations

THE ABOVE ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, WHETHER EXPRESS OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF MECHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

Limitation of Liability

In no event shall Leeman Labs, Inc. be liable for any indirect, incidental, special, or consequential damages, including loss of profits, revenue, or used incurred by Customer or any third party, whether in an action in contract or tort. Leeman Labs Inc's liability for damages hereunder shall in no event exceed the amounts paid for the PLASMA-PURE Standards.

QC Analyst: BDM

Date: September 4, 2014

QUALITY ISO 9001:2008 NSAI Certified

TELEDYNE LEEMAN LABS
Everywhereyoulook™
6 Wentworth Drive . Hudson, NH 03051
Tel: 603.886.8400 Fax: 603.886.9141

Printed on recycled paper

Reagent

IC 2nd Source_00007

INORGANIC VENTURES™
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

800.669.6799 · 540.585.3030
fax: 540.585.3012
fo@inorganicventures.com

395282
395282
ID: IC 2nd Source_00006
Exp:07/01/15 Prpd:AMF Opn:09/16/14
IC 2nd Source

479532
ID: IC 2nd Source_00007
Exp:07/01/15 Prpd:AMF Opn:09/16/14
IC 2nd Source

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number (010105).

ACCREDITED Testing Laboratory Certificate 863.01
ACCREDITED Reference Material Producer Certificate 863.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Ion Chromatography Solution
Catalog Number:	STL-ICV-LCS
Lot Number:	H2-MEB536023
Matrix:	H2O
Value / Analyte(s):	20 000 µg/L ea: oPhosphate, Sulfate, 5 000 µg/L ea: Bromide, Chloride, 2 500 µg/L ea: Fluoride, 1 000 µg/L ea: Nitrate_as_N, 400 µg/L ea: Nitrite_as_N

Second Source: Whenever possible, this solution was manufactured from a second set of concentrates in our manufacturing facility.

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Bromide	5 001 ± 28 µg/L	Chloride	5 001 ± 25 µg/L		
Fluoride	2 500 ± 13 µg/L	Nitrate as N	1 000 ± 6 µg/L		
Nitrite as N	400.0 ± 3.1 µg/L	o-Phosphate	20 000.0 ± 90.0 µg/L		
Sulfate	20 000.0 ± 110.0 µg/L				

Certified Density: 0.998 g/mL (measured at 20 ± 1 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Bromide	IC Assay	3184	020701
Bromide	Volhard	999b	999b
Chloride	IC Assay	3182	060925
Chloride	Volhard	999b	999b
Fluoride	Calculated		See Sec 4.2
Fluoride	IC Assay	3183	050721
Nitrate_as_N	IC Assay	3185	050517
Nitrite_as_N	IC Assay		traceable to SRM 40h
Nitrite_as_N	Calculated	40h	40h
oPhosphate	Calculated		See Sec 4.2
oPhosphate	IC Assay	3186	090723
Sulfate	Calculated		See Sec 4.2
Sulfate	IC Assay	3181	080603

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Certified Value $(\bar{x}) = \frac{\Sigma x_i}{n}$ ($\bar{x}$) = mean

x_i = individual results

n = number of measurements

Uncertainty $(\pm) = 2 [\Sigma(s_i)^2]^{1/2}$ 2 = the coverage factor.

$[\Sigma(s_i)^2]^{1/2}$ = The square root of the sum of the squares of the most common errors (where 's' stands for the standard deviation) from instrumental measurement, density, NIST SRM uncertainty, weighing, dilution to volume, homogeneity, long term stability and short term stability.

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 CHROMATOGRAM

- N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Keep tightly sealed when not in use. Store and use at 20 ± 4°C. Do not pipette from the container. Do not return removed aliquots to container.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

June 25, 2014

11.2 Period of Validity

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is handled and stored in accordance with instructions given in Sec 7.0 and used prior to the date given in Sec 11.3. This certification is nullified if the CRM/RM is damaged, contaminated, or otherwise modified.

11.3 Expiration Date

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Donna Senn
Product Documentation Technician

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

IC Cal High_00030

INORGANIC VENTURES™
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number (010105).

ACCREDITED Testing Laboratory Certificate 883.01 · ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Ion Chromatography Solution
Catalog Number:	STL-CAL-HIGH
Lot Number:	H2-MEB549027
Matrix:	H2O
Value / Analyte(s):	20 000 µg/L ea: oPhosphate, Sulfate, 5 000 µg/L ea: Bromide, Chloride, 2 500 µg/L ea: Fluoride, 1 000 µg/L ea: Nitrate_as_N, 400 µg/L ea: Nitrite_as_N

461494
ID: IC Cal High_00030
Exp: 10/01/15 Prpd: AMF
IC Cal High

461495
ID: IC Cal High_00031
Exp: 10/01/15 Prpd: AMF
IC Cal High

*see TALS for open date.
AF 9-30-14

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Bromide	4 997 ± 31 µg/L	Chloride	4 997 ± 30 µg/L	Fluoride	2 499 ± 12 µg/L
Nitrate as N	1 000 ± 6 µg/L	Nitrite as N	400.0 ± 3.4 µg/L	o-Phosphate	19 990.0 ± 100.0 µg/L
Sulfate	19 980.0 ± 120.0 µg/L				

Certified Density: 0.998 g/mL (measured at 20 ± 1 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Bromide	IC Assay	3184	020701
Bromide	Volhard	999b	999b
Chloride	IC Assay	3182	060925
Chloride	Volhard	999b	999b
Fluoride	IC Assay	3183	050721
Nitrate_as_N	IC Assay	3185	050517
Nitrite_as_N	Calculated		See Sec. 4.2
Nitrite_as_N	IC Assay	40h	40h
oPhosphate	IC Assay	3186	090723
Sulfate	Calculated		See Sec. 4.2
Sulfate	IC Assay	3181	080603

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Certified Value $(\bar{x}) = \frac{\Sigma x_i}{n}$ ($\bar{x}$) = mean

x_i = individual results

n = number of measurements

Uncertainty (±) = $2\ [\ \Sigma(s_i)^2\ ]^{1/2}$ 2 = the coverage factor.

$[\ \Sigma(s_i)^2\ ]^{1/2}$ = The square root of the sum of the squares of the most common errors (where 's' stands for the standard deviation) from instrumental measurement, density, NIST SRM uncertainty, weighing, dilution to volume, homogeneity, long term stability and short term stability.

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 CHROMATOGRAM

- N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Keep tightly sealed when not in use. Store and use at 20 ± 4°C. Do not pipette from the container. Do not return removed aliquots to container.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

September 24, 2014

11.2 Period of Validity

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is handled and stored in accordance with instructions given in Sec 7.0 and used prior to the date given in Sec 11.3. This certification is nullified if the CRM/RM is damaged, contaminated, or otherwise modified.

11.3 Expiration Date EXPIRES 01 OCT 2015

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Zach Saunders
Product Documentation Technician

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

IC Cal High_00031

INORGANIC VENTURES™
300 Technology Drive
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inorganicventures.com

CERTIFICATE OF ANALYSIS

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fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number (010105).

ACCREDITED Testing Laboratory Certificate 883.01 · ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Ion Chromatography Solution
Catalog Number:	STL-CAL-HIGH
Lot Number:	H2-MEB549027
Matrix:	H2O
Value / Analyte(s):	20 000 µg/L ea: oPhosphate, Sulfate, 5 000 µg/L ea: Bromide, Chloride, 2 500 µg/L ea: Fluoride, 1 000 µg/L ea: Nitrate_as_N, 400 µg/L ea: Nitrite_as_N

461494
ID: IC Cal High_00030
Exp: 10/01/15 Prpd: AMF
IC Cal High

461495
ID: IC Cal High_00031
Exp: 10/01/15 Prpd: AMF
IC Cal High

*see TALS for open date.
AF 9-30-14

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Bromide	4 997 ± 31 µg/L	Chloride	4 997 ± 30 µg/L	Fluoride	2 499 ± 12 µg/L
Nitrate as N	1 000 ± 6 µg/L	Nitrite as N	400.0 ± 3.4 µg/L	o-Phosphate	19 990.0 ± 100.0 µg/L
Sulfate	19 980.0 ± 120.0 µg/L				

Certified Density: 0.998 g/mL (measured at 20 ± 1 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Bromide	IC Assay	3184	020701
Bromide	Volhard	999b	999b
Chloride	IC Assay	3182	060925
Chloride	Volhard	999b	999b
Fluoride	IC Assay	3183	050721
Nitrate_as_N	IC Assay	3185	050517
Nitrite_as_N	Calculated		See Sec. 4.2
Nitrite_as_N	IC Assay	40h	40h
oPhosphate	IC Assay	3186	090723
Sulfate	Calculated		See Sec. 4.2
Sulfate	IC Assay	3181	080603

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Certified Value $(\bar{x}) = \frac{\Sigma x_i}{n}$ ($\bar{x}$) = mean

x_i = individual results

n = number of measurements

Uncertainty (±) = $2\ [\ \Sigma(s_i)^2\ ]^{1/2}$ 2 = the coverage factor.

$[\ \Sigma(s_i)^2\ ]^{1/2}$ = The square root of the sum of the squares of the most common errors (where's' stands for the standard deviation) from instrumental measurement, density, NIST SRM uncertainty, weighing, dilution to volume, homogeneity, long term stability and short term stability.

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 CHROMATOGRAM

- N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Keep tightly sealed when not in use. Store and use at 20 ± 4°C. Do not pipette from the container. Do not return removed aliquots to container.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

September 24, 2014

11.2 Period of Validity

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is handled and stored in accordance with instructions given in Sec 7.0 and used prior to the date given in Sec 11.3. This certification is nullified if the CRM/RM is damaged, contaminated, or otherwise modified.

11.3 Expiration Date EXPIRES 01 OCT 2015

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Zach Saunders
Product Documentation Technician

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

IC Cal High_00032

INORGANIC VENTURES™
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inorganicventures.com

CERTIFICATE OF ANALYSIS

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502873
ID: IC Cal High_00032
Exp:10/01/15 Prpd:AMF Opn:11/05/14
IC Cal High

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number (010105).

ACCREDITED Testing Laboratory Certificate 863.01
ACCREDITED Reference Material Producer Certificate 863.02

2.0 PRODUCT DESCRIPTION

Product Code: Multi Analyte Ion Chromatography Solution

Catalog Number: STL-CAL-HIGH

Lot Number: H2-MEB549027

Matrix: H2O

Value / Analyte(s): 20 000 µg/L ea: oPhosphate, Sulfate,
5 000 µg/L ea: Bromide, Chloride,
2 500 µg/L ea: Fluoride,
1 000 µg/L ea: Nitrate_as_N,
400 µg/L ea: Nitrite_as_N

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Bromide	4 997 ± 31 µg/L	Chloride	4 997 ± 30 µg/L		
Fluoride	2 499 ± 12 µg/L	Nitrate as N	1 000 ± 6 µg/L		
Nitrite as N	400.0 ± 3.4 µg/L	o-Phosphate	19 990.0 ± 100.0 µg/L		
Sulfate	19 980.0 ± 120.0 µg/L				

Certified Density: 0.998 g/mL (measured at 20 ± 1 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Bromide	IC Assay	3184	020701
Bromide	Volhard	999b	999b
Chloride	IC Assay	3182	060925
Chloride	Volhard	999b	999b
Fluoride	IC Assay	3183	050721
Nitrate_as_N	IC Assay	3185	050517
Nitrite_as_N	Calculated		See Sec. 4.2
Nitrite_as_N	IC Assay	40h	40h
oPhosphate	IC Assay	3186	090723
Sulfate	Calculated		See Sec. 4.2
Sulfate	IC Assay	3181	080603

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Certified Value $(\bar{x}) = \frac{\Sigma x_i}{n}$ ($\bar{x}$) = mean

x_i = individual results

n = number of measurements

Uncertainty $(\pm) = 2\,[\,\Sigma(s_i)^2\,]^{1/2}$ 2 = the coverage factor.

$[\,\Sigma(s_i)^2\,]^{1/2}$ = The square root of the sum of the squares of the most common errors (where 's' stands for the standard deviation) from instrumental measurement, density, NIST SRM uncertainty, weighing, dilution to volume, homogeneity, long term stability and short term stability.

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 CHROMATOGRAM

- N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Keep tightly sealed when not in use. Store and use at 20 ± 4°C. Do not pipette from the container. Do not return removed aliquots to container.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

September 24, 2014

11.2 Period of Validity

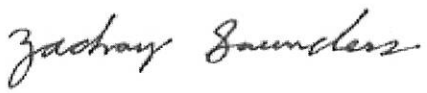
- The certification is valid within the measurement uncertainty specified provided the CRM/RM is handled and stored in accordance with instructions given in Sec 7.0 and used prior to the date given in Sec 11.3. This certification is nullified if the CRM/RM is damaged, contaminated, or otherwise modified.

11.3 Expiration Date

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Zach Saunders
Product Documentation Technician



Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

IC Cal Low_00005

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479531
ID: IC Cal Low_00005
Exp:02/01/15 Prpd:AMF Opn:02/03/14
IC Cal Low

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number (010105).

ACCREDITED Testing Laboratory Certificate 863.01
ACCREDITED Reference Material Producer Certificate 863.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Ion Chromatography Solution
Catalog Number:	STL-CAL-LOW
Lot Number:	H2-MEB511047
Matrix:	H2O
Value / Analyte(s):	10 000 µg/L ea: oPhosphate, Sulfate, 5 000 µg/L ea: Bromide, 4 000 µg/L ea: Chloride, 2 000 µg/L ea: Fluoride, 400 µg/L ea: Nitrate_as_N, Nitrite_as_N

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Bromide	5 000 ± 32 µg/L	Chloride	4 002 ± 32 µg/L		
Fluoride	1 999 ± 17 µg/L	Nitrate as N	399.6 ± 4.7 µg/L		
Nitrite as N	400.0 ± 4.7 µg/L	o-Phosphate	10 000.0 ± 90.0 µg/L		
Sulfate	10 010.0 ± 60.0 µg/L				

Certified Density: 1.000 g/mL (measured at 20 ± 1 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Bromide	IC Assay	3184	020701
Bromide	Volhard	999b	999b
Chloride	IC Assay	3182	060925
Chloride	Volhard	999b	999b
Fluoride	Calculated		See Sec. 4.2
Fluoride	IC Assay	3183	050721
Nitrate_as_N	Calculated		See Sec. 4.2
Nitrate_as_N	IC Assay	3185	050517
Nitrite_as_N	IC Assay		traceable to SRM 40h
Nitrite_as_N	Calculated	40h	40h
oPhosphate	Calculated		See Sec. 4.2
oPhosphate	IC Assay	3186	090723
Sulfate	Calculated		See Sec. 4.2
Sulfate	IC Assay	3181	080603

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Certified Value $(\bar{x}) = \frac{\Sigma x_i}{n}$

Uncertainty $(\pm) = 2\,[\,\Sigma(s_i)^2\,]^{1/2}$

($\bar{x}$) = mean
x_i = individual results
n = number of measurements
2 = the coverage factor.
$[\,\Sigma(s_i)^2\,]^{1/2}$ = The square root of the sum of the squares of the most common errors (where 's' stands for the standard deviation) from instrumental measurement, density, NIST SRM uncertainty, weighing, dilution to volume, homogeneity, long term stability and short term stability.

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 CHROMATOGRAM

- N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Keep tightly sealed when not in use. Store and use at 20 ± 4°C. Do not pipette from the container. Do not return removed aliquots to container.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

January 14, 2014

11.2 Period of Validity

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is handled and stored in accordance with instructions given in Sec 7.0 and used prior to the date given in Sec 11.3. This certification is nullified if the CRM/RM is damaged, contaminated, or otherwise modified.

11.3 Expiration Date

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Donna Senn
Product Documentation Technician

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

IC ClO3 Cal_00003

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CERTIFICATE OF ANALYSIS

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289847
ID: IC ClO3 Cal_00003
Exp:02/01/15 Prpd:AMF Opn:02/03/14
IC ClO3 Cal

1.0 **INORGANIC VENTURES** is an ISO Guide 34 "General Requirements for the Competence of Reference Material Producers" and ISO 9001 registered manufacturer. Our manufacturing laboratory is accredited to ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories."

ACCREDITED Testing Laboratory Certificate 883.01

ACCREDITED Reference Material Producer Certificate 883.02

2.0 **DESCRIPTION OF CRM** **Ion Chromatography 1000 µg/mL Chlorate in H2O**

Catalog Number:	ICCLO31-1 and ICCLO31-5
Lot Number:	**G2-CLOX01097**
Starting Material:	KCLO3
Starting Material Purity (%):	99.0000
Starting Material Lot No.:	02407TF
Matrix:	H2O

3.0 **CERTIFIED VALUES AND UNCERTAINTIES**

Certified Concentration: 1,001 ± 7 µg/mL -weighted mean-

Certified Density: 0.999 g/mL (measured at 20 ± 1°C)

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence interval using a coverage factor of k = 2.

Characterization of CRM by two independent methods

Certified Value, X_{CRM}, where two methods of characterization are used, is the weighted mean of the two results = $[(w_a)(X_a) + (w_b)(X_b)]$

X_a is the mean of Assay Method A with standard uncertainty $U_{char\ a}$.

X_b is the mean of Assay Method B with standard uncertainty $U_{char\ b}$.

w_a and w_b = The weighting factors for each method calculated using the inverse square of the variance:

$$w_a = (1/U_{char\ a})^2 / ((1/U_{char\ a})^2 + (1/U_{char\ b})^2));$$

$$w_b = (1/U_{char\ b})^2 / ((1/U_{char\ a})^2 + (1/U_{char\ b})^2))$$

CRM Expanded Uncertainty (±) = $U_{CRM} = k\ (U^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{½}$

$U_{char\ a\&b} = [(w_a)^2 (U_{char\ a})^2 + (w_b)^2 (U_{char\ b})^2]^{0.5}$; $U_{char\ a}$ and $U_{char\ b}$ are the square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume; **k**, coverage factor = 2 in all cases at Inorganic Ventures; u_{bb} = bottle to bottle homogeneity standard uncertainty; u_{lts} = long term stability standard uncertainty (storage); u_{sts} = short term stability standard uncertainty (transportation).

Characterization of CRM by one method

Certified Value, X_{CRM}, where one method of characterization is used, is the mean of individual results:

X_a = Mean X_a is the mean of Assay Method A with standard uncertainty $U_{char\ a}$.

CRM Expanded Uncertainty (±) = $U_{CRM} = k\ (U^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{½}$

$U_{char\ a}$ is the square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume; **k**, coverage factor = 2 in all cases at Inorganic Ventures; u_{bb} = bottle to bottle homogeneity standard uncertainty; u_{lts} = long term stability standard uncertainty (storage); u_{sts} = short term stability standard uncertainty (transportation).

4.0 **TRACEABILITY TO NIST AND VALUES OBTAINED BY INDEPENDENT METHODS**

· "Property of the result of a measurement or the value of a standard whereby it can be related to stated references, usually national or international standards, through an unbroken chain of comparisons all having stated uncertainties." (ISO VIM, 2nd ed., 1993, definition 6.10)

· This product is Traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRMs are available, the term 'in-house std.' is specified.

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a NIST SRM/RM. See section 4.2 for balance traceability.

4.1 Assay Method #1 **1,001 ± 6 µg/mL**

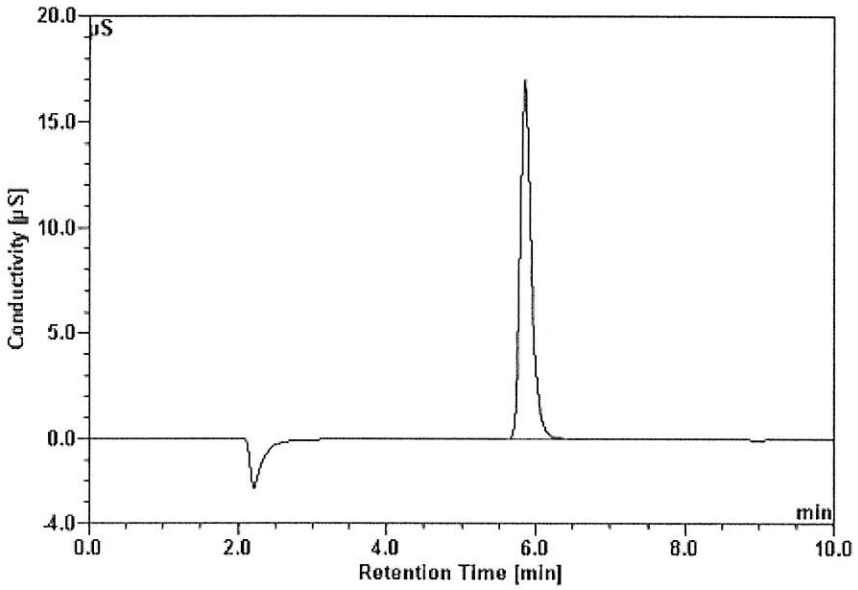
ICP Assay NIST SRM Traceable To 3182 Lot Number: 3182

4.2 BALANCE CALIBRATION - All analytical balances are calibrated yearly by an accredited calibration laboratory and are traceable to a class E 2 analytical weight set with NIST Traceability. All balances are checked daily using an in-house procedure. The weights used for testing are annually compared to master weights and are traceable to the National Institute of Standards and Technology (NIST).

4.3 THERMOMETER CALIBRATION - All thermometers are NIST traceable through thermometers that are calibrated by an A2LA accredited calibration laboratory.

4.4 GLASSWARE CALIBRATION - An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM's.

5.0 Chromatogram



Dionex ICS-2000 Ion Chromatograph

Analytical Column:	IonPac AS22 4 x 250 mm	**Eluent:**	4.5mM Na2CO3/1.4mM NaHCO3
Guard Column:	IonPac AG22 4 x 50 mm	**Eluent Flow Rate:**	1.2mL/min
Anion Self-Regenerating Suppressor:	ASRS300 4mm	**Column Temp:**	N/A
		Cell Temp:	35 °C
Cation Self-Regenerating Suppressor:		**Scale X-Axis:**	minutes
		Scale Y-Axis:	20µS scale
Suppressor Current:	31mA	**Concentration:**	approx. 20µg/g

STORAGE CONDITIONS: Storage at 4°C will discourage biological growth in this pH neutral solution.

6.0 INTENDED USE

For the calibration of analytical instruments including but not limited to the following:
HPLC, IC, TLC, ISE, IR, NMR, UV/VIS, MS, Capillary Electrophoresis, Potentiometry, Wet Chemistry and Voltammetry
For the validation of analytical methods
For the preparation of "working reference samples"
For interference studies and the determination of correction coefficients
For detection limit and linearity studies
For additional intended uses, contact Technical Staff

This CRM was manufactured using 18 megohm doubly deionized water that has been filtered through a 0.2 micron filter.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

Storage & Handling - Keep tightly sealed when not in use. Store and use at 20 ± 4°C. **Do Not** pipette from the container. **Do Not** return portions removed from pipetting to container.

Element Specific Information - For specific information regarding any element: Contact technical staff.

8.0 HAZARDOUS INFORMATION - Please refer to the enclosed Material Safety Data sheet for information regarding this CRM.

9.0 HOMOGENEITY - This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous.

Inorganic Ventures homogeneity data indicate that the end user should take a minimum sample size of 0.2mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration
- SAI Global File Number 010105

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration"
- Chemical Testing - Accredited A2LA Certificate Number 883.01

10.3 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"
- Reference Materials Production - Accredited A2LA Certificate Number 883.02

10.4 10CFR50 Appendix B - Nuclear Regulatory Commission
- Domestic Licensing of Production and Utilization Facilities

10.5 10CFR21 - Nuclear Regulatory Commission
- Reporting Defects and Non-Compliance

11.0 DATE OF CERTIFICATION AND PERIOD OF VALIDITY

11.1 Shelf Life - The period of time during which the concentration of the analyte(s) in a properly packaged, unopened, and unused standard stored under environmentally controlled and monitored conditions will remain within the specified uncertainty range. Shelf life is limited primarily by transpiration (loss of water from the solution) and infrequently, by chemical instability.

11.2 Expiration Date - The date after which a CRM should not be used. Routine laboratory use of a CRM increases transpiration losses and the chance of contamination which affect the integrity of the CRM and limit its useful life. Manufacturer concurs with state and federal regulatory agencies' recommendations that solution standards be assigned a one-year expiration date.

11.3 Chemical Stability - Studies have been conducted on this or similar CRMs and it has been demonstrated that this CRM is chemically stable for a period of not less than two years provided the "Storage & Handling" conditions are followed that are described in section 7.0.

Certification Date: May 08, 2013

Expiration Date:

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:	Zach Saunders, Product Documentation Technician	
Certificate Approved By:	Brian Alexander PhD., Technical Process Director	
Certifying Officer:	Paul Gaines PhD., Senior Technical Director	

Reagent

IC MS Soln_00005

INORGANIC VENTURES™
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
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info@inorganicventures.com

504453
ID: IC MS Soln_00005
Exp:02/01/15 Prpd:AMF Opn:02/03/14
IC MS Solution

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number (010105).

ACCREDITED Testing Laboratory Certificate #63.01
ACCREDITED Reference Material Producer Certificate #63.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Ion Chromatography Solution
Catalog Number:	STLMO-MS-1
Lot Number:	H2-MEB511048
Matrix:	H2O
Value / Analyte(s):	200 µg/mL ea: oPhosphate, Sulfate, 100 µg/mL ea: Bromide, Chloride, Fluoride, 20 µg/mL ea: Nitrate_as_N, 5 µg/mL ea: Nitrite_as_N

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Bromide	99.9 ± 0.6 µg/mL	Chloride	100.0 ± 0.6 µg/mL		
Fluoride	100.0 ± 0.5 µg/mL	Nitrate as N	19.99 ± 0.13 µg/mL		
Nitrite as N	5.003 ± 0.032 µg/mL	o-Phosphate	199.9 ± 1.6 µg/mL		
Sulfate	200.0 ± 1.1 µg/mL				

Certified Density: 0.999 g/mL (measured at 20 ± 1 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Bromide	IC Assay	3184	020701
Bromide	Volhard	999b	999b
Chloride	IC Assay	3182	060925
Chloride	Volhard	999b	999b
Fluoride	IC Assay	3183	050721
Nitrate_as_N	Calculated		See Sec. 4.2
Nitrate_as_N	IC Assay	3185	050517
Nitrite_as_N	IC Assay		traceable to SRM 40h
Nitrite_as_N	Calculated	40h	40h
oPhosphate	Calculated		See Sec. 4.2
oPhosphate	IC Assay	3186	090723
Sulfate	Calculated		See Sec. 4.2
Sulfate	IC Assay	3181	080603

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Certified Value $(\bar{x}) = \frac{\sum x_i}{n}$ ($\bar{x}$) = mean

x_i = individual results

n = number of measurements

Uncertainty $(\pm) = 2\,[\,\Sigma(s_i)^2\,]^{1/2}$ 2 = the coverage factor.

$[\,\Sigma(s_i)^2\,]^{1/2}$ = The square root of the sum of the squares of the most common errors (where 's' stands for the standard deviation) from instrumental measurement, density, NIST SRM uncertainty, weighing, dilution to volume, homogeneity, long term stability and short term stability.

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 CHROMATOGRAM

- N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Keep tightly sealed when not in use. Store and use at 20 ± 4°C. Do not pipette from the container. Do not return removed aliquots to container.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

January 14, 2014

11.2 Period of Validity

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is handled and stored in accordance with instructions given in Sec 7.0 and used prior to the date given in Sec 11.3. This certification is nullified if the CRM/RM is damaged, contaminated, or otherwise modified.

11.3 Expiration Date

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Donna Senn
Product Documentation Technician

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

ICPC ICV 1_00002

INORGANIC VENTURES

CERTIFICATE OF ANALYSIS

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34. "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number (010105).

ACCREDITED Testing Laboratory Certificate 583.01

ACCREDITED Reference Material Producer Certificate 583.02

2.0 PRODUCT DESCRIPTION

484077
ID: ICPC ICV 1_00002
Exp: 11/01/15 Prpd: FLC
ICP ICV 1

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	TA-64
Lot Number:	H2-MEB550054
Matrix:	5% (v/v) HNO_3 2.5% (v/v) HF
Value / Analyte(s):	1 000 µg/mL ea: Si, Sn, Ti, 200 µg/mL ea: Mo, Sb

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Antimony	200.0 ± 1.5 µg/mL	Molybdenum	200.0 ± 0.9 µg/mL	Silicon	1 000 ± 8 µg/mL
Tin	1 000 ± 5 µg/mL	Titanium	1 000 ± 7 µg/mL		

Certified Density: 1.040 g/mL (measured at 20 ± 1 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Mo	Calculated		See Sec. 4.2
Mo	ICP Assay	3134	891307
Sb	Calculated		See Sec. 4.2
Sb	ICP Assay	3102A	061229
Si	Calculated		See Sec. 4.2
Si	ICP Assay	3150	071204
Sn	Calculated		See Sec. 4.2
Sn	ICP Assay	3161a	070330
Ti	Calculated		See Sec. 4.2
Ti	ICP Assay	3162a	060808

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Certified Value $(\bar{\bar{x}}) = \frac{\sum x_i}{n}$

($\bar{x}$) = mean
x_i = individual results
n = number of measurements

Uncertainty $(\pm) = 2\,[\,\Sigma(s_i)^2\,]^{1/2}$

2 = the coverage factor.
$[\,\Sigma(s_i)^2\,]^{1/2}$ = The square root of the sum of the squares of the most common errors (where 's' stands for the standard deviation) from instrumental measurement, density, NIST SRM uncertainty, weighing, dilution to volume, homogeneity, long term stability and short term stability.

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

- N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Keep tightly sealed when not in use. Store and use at 20 ± 4°C. Do not pipette from the container. Do not return removed aliquots to container.

- **HF Note:** This standard should not be prepared or stored in glass.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

October 16, 2014

11.2 Period of Validity

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is handled and stored in accordance with instructions given in Sec 7.0 and used prior to the date given in Sec 11.3. This certification is nullified if the CRM/RM is damaged, contaminated, or otherwise modified.

11.3 Expiration Date

EXPIRES
01 2015

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Christy Shortridge
Product Documentation Technician

Christy Shortridge

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Brian Alexander

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Paul R Gaines

Reagent

ICPC ICV 3_00002

INORGANIC VENTURES
300 Technology Drive
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CERTIFICATE OF ANALYSIS

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1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number (010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

484079
ID: ICPC ICV 3_00002*
Exp: 11/01/15 Prpd: FLC
ICPC ICV 3

2.0 PRODUCT DESCRIPTION

Product Code: Multi Analyte Custom Grade Solution

Catalog Number: TA-65

Lot Number: H2-MEB550055

Matrix: 5% (v/v) HNO3

Value / Analyte(s): 10 000 µg/mL ea:
Al, Ca, Fe,
Na

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum	10 000.0 ± 50.0 µg/mL	Calcium	10 000.0 ± 40.0 µg/mL	Iron	10 000.0 ± 50.0 µg/mL
Sodium	10 000.0 ± 40.0 µg/mL				

Certified Density: 1.176 g/mL (measured at 20 ± 1 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Al	ICP Assay	3101a	060502
Al	EDTA	928	928
Ca	ICP Assay	3109a	050825
Ca	EDTA	928	928
Fe	ICP Assay	3126a	051031
Fe	EDTA	928	928
Na	Gravimetric		See Sec. 4.2
Na	ICP Assay	3152a	120715

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Certified Value $(\bar{x}) = \frac{\Sigma x_i}{n}$

$(\bar{x})$ = mean
x_i = individual results
n = number of measurements

Uncertainty $(\pm) = 2\,[\,\Sigma(s_i)^2\,]^{1/2}$

2 = the coverage factor.
$[\,\Sigma(s_i)^2\,]^{1/2}$ = The square root of the sum of the squares of the most common errors (where 's' stands for the standard deviation) from instrumental measurement, density, NIST SRM uncertainty, weighing, dilution to volume, homogeneity, long term stability and short term stability.

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

- N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Keep tightly sealed when not in use. Store and use at 20 ± 4°C. Do not pipette from the container. Do not return removed aliquots to container.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

October 16, 2014

11.2 Period of Validity

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is handled and stored in accordance with instructions given in Sec 7.0 and used prior to the date given in Sec 11.3. This certification is nullified if the CRM/RM is damaged, contaminated, or otherwise modified.

11.3 Expiration Date EXPIRES 01 NOV 2015

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Christy Shortridge
Product Documentation Technician

Christy Shortridge

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Brian Alexander

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Paul R Gaines

Reagent

ICPC ICV 4_00002

INORGANIC VENTURES™
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CERTIFICATE OF ANALYSIS

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number (010105).

ACCREDITED Testing Laboratory Certificate 883.01 ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

484152
ID: ICPC ICV 4_00002
Exp: 11/01/15 Prpd: FLC
ICPC ICV 4

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	TA-63
Lot Number:	H2-MEB550053
Matrix:	7% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea:

As, B, Ba,
Be, Bi, Cd,
Co, Cr3, Cu,
Li, Mn, Ni,
P, Pb, Sr,
Th, U, V,
Zn,

200 µg/mL ea:
Ag, Se, Tl

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Arsenic	1 000 ± 8 µg/mL	Barium	1 000 ± 5 µg/mL	Beryllium	1 000 ± 5 µg/mL
Bismuth	1 000 ± 6 µg/mL	Boron	1 000 ± 7 µg/mL	Cadmium	1 000 ± 5 µg/mL
Chromium+3	1 000 ± 5 µg/mL	Cobalt	1 000 ± 5 µg/mL	Copper	1 000 ± 7 µg/mL
Lead	1 000 ± 5 µg/mL	Lithium	1 000 ± 7 µg/mL	Manganese	1 000 ± 4 µg/mL
Nickel	1 000 ± 5 µg/mL	Phosphorus	1 000 ± 5 µg/mL	Selenium	200.0 ± 1.2 µg/mL
Silver	200.0 ± 1.3 µg/mL	Strontium	1 000 ± 6 µg/mL	Thallium	200.0 ± 1.2 µg/mL
Thorium	1 000 ± 7 µg/mL	Uranium	1 000 ± 7 µg/mL	Vanadium	1 000 ± 5 µg/mL
Zinc	1 000 ± 6 µg/mL				

Certified Density: 1.106 g/mL (measured at 20 ± 1 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ag	ICP Assay	3151	992212
Ag	Volhard	999b	999b
As	Calculated		See Sec. 4.2
As	ICP Assay	3103a	100818
B	ICP Assay	3107	070514
Ba	Gravimetric		See Sec. 4.2
Ba	ICP Assay	3104a	070222
Be	Calculated		See Sec. 4.2
Be	ICP Assay	3105a	090514
Bi	Calculated		See Sec. 4.2
Bi	ICP Assay	3106	991212
Cd	ICP Assay	3108	060531
Cd	EDTA	928	928
Co	ICP Assay	3113	000630 Co
Co	EDTA	928	928
Cr3	Calculated		See Sec. 4.2
Cr3	ICP Assay	3112a	030730
Cu	ICP Assay	3114	011017
Cu	EDTA	928	928
Li	Gravimetric		See Sec. 4.2
Li	ICP Assay	3129a	100714
Mn	ICP Assay	3132	050429
Mn	EDTA	928	928
Ni	ICP Assay	3136	120619
Ni	EDTA	928	928
P	ICP Assay	3139a	060717
P	Acidimetric	84L	84L
Pb	ICP Assay	3128	101026
Pb	EDTA	928	928
Se	Calculated		See Sec. 4.2
Se	ICP Assay	3149	100901
Sr	ICP Assay	3153a	990906
Sr	EDTA	928	928
Th	EDTA	928	928
Th	ICP Assay	Traceable to SRM 3159	Lot# 992912
Tl	Calculated		See Sec. 4.2
Tl	ICP Assay	3158	993012
U	Calculated		See Sec. 4.2
U	ICP Assay	3164	080521
V	ICP Assay	3165	992706
V	EDTA	928	928
Zn	ICP Assay	3168a	120629
Zn	EDTA	928	928

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Certified Value $(\bar{x}) = \frac{\sum x_i}{n}$

$(\bar{x})$ = mean
x_i = individual results
n = number of measurements

Uncertainty $(\pm) = 2\,[\,\Sigma(s_i)^2\,]^{1/2}$

2 = the coverage factor.
$[\,\Sigma(s_i)^2\,]^{1/2}$ = The square root of the sum of the squares of the most common errors (where 's' stands for the standard deviation) from instrumental measurement, density, NIST SRM uncertainty, weighing, dilution to volume, homogeneity, long term stability and short term stability.

Certified Abundance:

IV's Certified Abundance

Isotope	Atom %
Uranium 238U	99.8 ± 0.1
Uranium 235U	0.21 ± 0.05

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

- N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Keep tightly sealed when not in use. Store and use at 20 ± 4°C. Do not pipette from the container. Do not return removed aliquots to container.

- **Uranium Note:** If uranium is present in this standard, it is natural abundance unless specified in Section 3.0.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

October 16, 2014

11.2 Period of Validity

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is handled and stored in accordance with instructions given in Sec 7.0 and used prior to the date given in Sec 11.3. This certification is nullified if the CRM/RM is damaged, contaminated, or otherwise modified.

11.3 Expiration Date

EXPIRES
01 Nov 2015

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Christy Shortridge
Product Documentation Technician

Christy Shortridge

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Brian Alexander

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Paul R Gaines

Reagent

ICPC ICV2_00002

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number (010105).

ACCREDITED Testing Laboratory Certificate 883.01 — ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

484078
ID: ICPC ICV2_00002
Exp: 11/01/15 Prpd: FLC
ICPC ICV2

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	TA-66
Lot Number:	H2-MEB550056
Matrix:	1% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: K, Mg, S

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Magnesium	10 000.0 ± 50.0 µg/mL	Potassium	10 000.0 ± 40.0 µg/mL	Sulfur	10 000.0 ± 50.0 µg/mL

Certified Density: 1.078 g/mL (measured at 20 ± 1 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
K	Gravimetric		See Sec. 4.2
K	ICP Assay	3141a	051220
Mg	ICP Assay	3131a	050302
Mg	EDTA	928	928
S	ICP Assay	3154	892205
S	Acidimetric	84L	84L

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Certified Value $(\bar{x}) = \frac{\Sigma x_i}{n}$

Uncertainty $(\pm) = 2\,[\,\Sigma(s_i)^2\,]^{1/2}$

($\bar{x}$) = mean
x_i = individual results
n = number of measurements
2 = the coverage factor.
$[\,\Sigma(s_i)^2\,]^{1/2}$ = The square root of the sum of the squares of the most common errors (where 's' stands for the standard deviation) from instrumental measurement, density, NIST SRM uncertainty, weighing, dilution to volume, homogeneity, long term stability and short term stability.

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

- N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Keep tightly sealed when not in use. Store and use at 20 ± 4°C. Do not pipette from the container. Do not return removed aliquots to container.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

October 16, 2014

11.2 Period of Validity

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is handled and stored in accordance with instructions given in Sec 7.0 and used prior to the date given in Sec 11.3. This certification is nullified if the CRM/RM is damaged, contaminated, or otherwise modified.

11.3 Expiration Date

EXPIRES
01 Nov 2015

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Christy Shortridge
Product Documentation Technician

Christy Shortridge

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Brian Alexander

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Paul R Gaines

Reagent

ICPC13 AB 1_00002

AccuScience
15520 Oakwood Street
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877-723-2220
www.accuscience.com

435167
ID: ICPC13 AB 1_00002
Exp:09/01/15 Prpd:FLC Opn:09/11/14
ICPC 2013 AB 1

435168
ID: ICPC13 AB 2_00002
Exp:09/01/15 Prpd:FLC Opn:09/11/14
ICPC 2013 AB 2

Certificate of Analysis

Rev 0

Description: Custom 26 Element Mix, #2368, 250 mL
mg/L in 5% HNO_3
Ag, Mo, Sb, Tl, Bi, Cd, Co, Cr, Cu, Mn, Ni, Si, Sn, Ti shipped separately.

Catalog No:	Matrix:	Lot No:	Storage:	Exp. Date:	Date Received:
ACSM2368-01-250ML	5% HNO3 + Tr HF	1064359	Ambient	1-Sep-2015	

Element	Symbol	CAS No	Purity %	Source Lot No	Concentration mg/L	
Selenium	Se	7782-49-2	99.999	7027.46.4	100	+/- .4
Arsenic	As	7440-38-2		7002.46.5	500	+/- 2
Boron	B	7440-42-8		7003.46.5	500	+/- 2
Barium	Ba	7440-39-3		7004.29.2	500	+/- 2
Beryllium	Be	7440-41-7		7005.46.5	500	+/- 2
Lithium	Li	7439-93-2		7015.46.5	500	+/- 2
Lead	Pb	7439-92-1		7023.29.2	500	+/- 2
Strontium	Sr	7440-24-6		7030.46.4	500	+/- 2
Thorium	Th	7440-29-1		7031.46.3	500	+/- 2
Uranium	U	7440-61-1		7035.330.1	500	+/- 2
Vanadium	V	7440-62-2		7036.46.5	500	+/- 2
Zinc	Zn	7440-66-6		7037.46.5	500	+/- 2
Silver	Ag	7440-22-4		7000.29.1	100	+/- .4
Molybdenum	Mo	7439-98-7		7018.29.3	100	+/- .4
Antimony	Sb	7440-36-0		7026.46.3	100	+/- .4
Thallium	Tl	7440-28-0		7236.46.1	100	+/- .4
Bismuth	Bi	7440-69-9		7040.46.2	500	+/- 2
Cadmium	Cd	7440-43-9		7007.29.3	500	+/- 2
Cobalt	Co	7440-48-4		7008.46.8	500	+/- 2
Chromium	Cr	7440-47-3		7009.46.3	500	+/- 2
Copper	Cu	7440-50-8		7011.46.5	500	+/- 10
Manganese	Mn	7439-96-5		7017.46.4	500	+/- 2
Nickel	Ni	7440-02-0		7021.46.8	500	+/- 2
Silicon	Si	7440-21-3		7028.46.12	500	+/- 2
Tin	Sn	7440-31-5		7029.46.4	500	+/- 2
Titanium	Ti	7440-32-6		7033.38.2	500	+/- 2

Certified By: Carrie Bibbins

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

This standard was manufactured by an ISO 17025 Chemical Testing Lab (Certificate number 3031.01) accredited by The American Association of Laboratory Accreditation (A2LA). Manufacturer's Quality System audited and registered by NSF-ISR to ISO 9001:2008 (Certificate number IZ391-IS4).

Reagent

ICPC13 AB 2_00002

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15520 Oakwood Street
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www.accuscience.com

435167
ID: ICPC13 AB 1_00002
Exp:09/01/15 Prpd:FLC Opn:09/11/14
ICPC 2013 AB 1

435168
ID: ICPC13 AB 2_00002
Exp:09/01/15 Prpd:FLC Opn:09/11/14
ICPC 2013 AB 2

Rev 0

Certificate of Analysis

Description: Custom 26 Element Mix, #2368, 250 mL
mg/L in 5% HNO_3
Ag, Mo, Sb, Tl, Bi, Cd, Co, Cr, Cu, Mn, Ni, Si, Sn, Ti shipped separately.

Catalog No:	Matrix:	Lot No:	Storage:	Exp. Date:	Date Received:
ACSM2368-01-250ML	5% HNO3 + Tr HF	1064359	Ambient	1-Sep-2015	

Element	Symbol	CAS No	Purity %	Source Lot No	Concentration mg/L	
Selenium	Se	7782-49-2	99.999	7027.46.4	100	+/- .4
Arsenic	As	7440-38-2		7002.46.5	500	+/- 2
Boron	B	7440-42-8		7003.46.5	500	+/- 2
Barium	Ba	7440-39-3		7004.29.2	500	+/- 2
Beryllium	Be	7440-41-7		7005.46.5	500	+/- 2
Lithium	Li	7439-93-2		7015.46.5	500	+/- 2
Lead	Pb	7439-92-1		7023.29.2	500	+/- 2
Strontium	Sr	7440-24-6		7030.46.4	500	+/- 2
Thorium	Th	7440-29-1		7031.46.3	500	+/- 2
Uranium	U	7440-61-1		7035.330.1	500	+/- 2
Vanadium	V	7440-62-2		7036.46.5	500	+/- 2
Zinc	Zn	7440-66-6		7037.46.5	500	+/- 2
Silver	Ag	7440-22-4		7000.29.1	100	+/- .4
Molybdenum	Mo	7439-98-7		7018.29.3	100	+/- .4
Antimony	Sb	7440-36-0		7026.46.3	100	+/- .4
Thallium	Tl	7440-28-0		7236.46.1	100	+/- .4
Bismuth	Bi	7440-69-9		7040.46.2	500	+/- 2
Cadmium	Cd	7440-43-9		7007.29.3	500	+/- 2
Cobalt	Co	7440-48-4		7008.46.8	500	+/- 2
Chromium	Cr	7440-47-3		7009.46.3	500	+/- 2
Copper	Cu	7440-50-8		7011.46.5	500	+/- 10
Manganese	Mn	7439-96-5		7017.46.4	500	+/- 2
Nickel	Ni	7440-02-0		7021.46.8	500	+/- 2
Silicon	Si	7440-21-3		7028.46.12	500	+/- 2
Tin	Sn	7440-31-5		7029.46.4	500	+/- 2
Titanium	Ti	7440-32-6		7033.38.2	500	+/- 2

Certified By: Carrie Bibbins

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

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Reagent

ICPC13 CAL A_00002

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15520 Oakwood Street
Pierrefonds QC Canada H9H1Y2
877-723-2220
www.accuscience.com

444929
ID: ICPC13 CAL A_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 A

444944
ID: ICPC13 CAL B_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 B

Certificate of Analysis

Rev 0

Description: Custom 34 Element Mix (ICPC- 2013- Cal 2,3), #2366, 500 mL
mg/L in 10% HNO_3 + Tr HF
K, Na, P, Al, Ca, Fe, Mg, B, Ba, Li, Pb, Sr, Th, U, V, Zn, Tl, Se, As, Be, Bi, Cd, Co, Cr, Cu, Mn, Ni shipped separately.

Catalog No:	Matrix:	Lot No:	Storage:	Exp. Date:	Date Received:
ACSM2366-01-500ml	10% HNO_3 + Tr HF	1064528	Ambient	1-Sep-2015	

Element	Symbol	CAS No	Purity %	Source Lot No	Concentration mg/L
Silver	Ag	7440-22-4	99.999	7000.29.1	200 +/- .6
Molybdenum	Mo	7439-98-7	99.999	7018.29.3	200 +/- .6
Antimony	Sb	7440-36-0	99.999	7026.46.3	200 +/- .6
Silicon	Si	7440-21-3	99.999	7028.46.15	1000 +/- 3
Tin	Sn	7440-31-5	99.999	7029.46.4	1000 +/- 3
Titanium	Ti	7440-32-6	99.995	7033.343.1	1000 +/- 3
Sulfur	S	7704-34-9	95.9	7025.43.5	10000 +/- 30
Potassium	K	7440-09-7	99.999	7013.46.10	10000 +/- 20
Sodium	Na	7440-23-5	99.999	7020.46.7	10000 +/- 20
Phosphorus	P	7723-14-0	99.9999	7022.46.12	10000 +/- 20

Certified By: Carrie Bibbins

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

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444948
ID: ICPC13 CAL C_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 C

444961
ID: ICPC13 CAL D_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 D

AccuScience
15520 Oakwood Street
Pierrefonds QC Canada H9H1Y2
877-723-2220
www.accuscience.com

Certificate of Analysis

Rev 0

Description: Custom 34 Element Mix (ICPC- 2013- Cal 2,3), #2366, 500 mL
mg/L in 10% HNO_3
Ag, Mo, Sb, Si, Sn, Ti, S, K, Na, P, Tl, Se, As, Be, Bi, Cd, Co, Cr, Cu, Mn, Ni shipped separately.

Catalog No:	Matrix:	Lot No:	Storage:	Exp. Date:	Date Received:
ACSM2366-01-500mlC	10% HNO_3	1064535	Ambient	1-Sep-2015	

Element	Symbol	CAS No	Purity %	Source Lot No	Concentration mg/L
Aluminum	Al	7429-90-5	99.9995	7001.46.8	10000 +/- 20
Calcium	Ca	7440-70-2	99.999	7006.29.2	10000 +/- 20
Iron	Fe	7439-89-6	99.99	7012.46.14	10000 +/- 20
Magnesium	Mg	7439-95-4	99.99	7016.46.5	10000 +/- 20
Boron	B	7440-42-8	99.999	7003.46.5	1000 +/- 3
Barium	Ba	7440-39-3	99.997	7004.29.3	1000 +/- 3
Lithium	Li	7439-93-2	99.999	7015.46.5	1000 +/- 3
Lead	Pb	7439-92-1	99.999	7023.29.2	1000 +/- 3
Strontium	Sr	7440-24-6	99.998	7030.46.4	1000 +/- 3
Thorium	Th	7440-29-1	99.98	7031.46.4	1000 +/- 3
Uranium	U	7440-61-1	99.8	7035.330.1	1000 +/- 3
Vanadium	V	7440-62-2	99.995	7036.46.6	1000 +/- 3
Zinc	Zn	7440-66-6	99.9995	7037.46.5	1000 +/- 3

Certified By: Carrie Bibbins

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

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444963
ID: ICPC13 CAL E_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 E

Certificate of Analysis

Rev 0

Description: Custom 34 Element Mix (ICPC- 2013- Cal 2,3), #2366, 500 mL mg/L in 10% HNO_3

Catalog No:	Matrix:	Lot No:	Storage:	Exp. Date:	Date Received:
ACSM2366-01-500mlE	10% HNO_3 + Tr HF	1064534	Ambient	1-Sep-2015	

Element	Symbol	CAS No	Purity %	Source Lot No	Concentration mg/L
Thallium	Tl	7440-28-0	99.99	7034.29.4	200 +/- .6
Selenium	Se	7782-49-2	99.999	7027.46.4	200 +/- .6
Arsenic	As	7440-38-2	99.9999	7002.46.5	1000 +/- 3
Beryllium	Be	7440-41-7	99.999	7005.46.5	1000 +/- 3
Bismuth	Bi	7440-69-9	99.999	7040.117.1	1000 +/- 3
Cadmium	Cd	7440-43-9	99.9999	7007.46.3	1000 +/- 3
Cobalt	Co	7440-48-4	99.995	7008.46.8	1000 +/- 3
Chromium	Cr	7440-47-3	99.998	7009.46.3	1000 +/- 3
Copper	Cu	7440-50-8	99.9995	7011.46.5	1000 +/- 3
Manganese	Mn	7439-96-5	99.95	7017.46.5	1000 +/- 3
Nickel	Ni	7440-02-0	99.995	7021.46.8	1000 +/- 3

Certified By: Carrie Bibbins

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

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Reagent

ICPC13 CAL B_00002

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877-723-2220
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444929
ID: ICPC13 CAL A_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 A

444944
ID: ICPC13 CAL B_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 B

Certificate of Analysis

Rev 0

Description: Custom 34 Element Mix (ICPC- 2013- Cal 2,3), #2366, 500 mL
mg/L in 10% HNO_3 + Tr HF
K, Na, P, Al, Ca, Fe, Mg, B, Ba, Li, Pb, Sr, Th, U, V, Zn, Tl, Se, As, Be, Bi, Cd, Co, Cr, Cu, Mn, Ni shipped separately.

Catalog No:	Matrix:	Lot No:	Storage:	Exp. Date:	Date Received:
ACSM2366-01-500ml	10% HNO_3 + Tr HF	1064528	Ambient	1-Sep-2015	

Element	Symbol	CAS No	Purity %	Source Lot No	Concentration mg/L
Silver	Ag	7440-22-4	99.999	7000.29.1	200 +/- .6
Molybdenum	Mo	7439-98-7	99.999	7018.29.3	200 +/- .6
Antimony	Sb	7440-36-0	99.999	7026.46.3	200 +/- .6
Silicon	Si	7440-21-3	99.999	7028.46.15	1000 +/- 3
Tin	Sn	7440-31-5	99.999	7029.46.4	1000 +/- 3
Titanium	Ti	7440-32-6	99.995	7033.343.1	1000 +/- 3
Sulfur	S	7704-34-9	95.9	7025.43.5	10000 +/- 30
Potassium	K	7440-09-7	99.999	7013.46.10	10000 +/- 20
Sodium	Na	7440-23-5	99.999	7020.46.7	10000 +/- 20
Phosphorus	P	7723-14-0	99.9999	7022.46.12	10000 +/- 20

Certified By: Carrie Bibbins

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

This standard was manufactured by an ISO 17025 Chemical Testing Lab (Certificate number 3031.01) accredited by The American Association of Laboratory Accreditation (A2LA). Manufacturer's Quality System audited and registered by NSF-ISR to ISO 9001:2008 (Certificate number IZ391-IS4).

444948
ID: ICPC13 CAL C_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 C

444961
ID: ICPC13 CAL D_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 D

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Certificate of Analysis

Rev 0

Description: Custom 34 Element Mix (ICPC- 2013- Cal 2,3), #2366, 500 mL
mg/L in 10% HNO_3
Ag, Mo, Sb, Si, Sn, Ti, S, K, Na, P, Tl, Se, As, Be, Bi, Cd, Co, Cr, Cu, Mn, Ni shipped separately.

Catalog No:	Matrix:	Lot No:	Storage:	Exp. Date:	Date Received:
ACSM2366-01-500mlC	10% HNO_3	1064535	Ambient	1-Sep-2015	

Element	Symbol	CAS No	Purity %	Source Lot No	Concentration mg/L
Aluminum	Al	7429-90-5	99.9995	7001.46.8	10000 +/- 20
Calcium	Ca	7440-70-2	99.999	7006.29.2	10000 +/- 20
Iron	Fe	7439-89-6	99.99	7012.46.14	10000 +/- 20
Magnesium	Mg	7439-95-4	99.99	7016.46.5	10000 +/- 20
Boron	B	7440-42-8	99.999	7003.46.5	1000 +/- 3
Barium	Ba	7440-39-3	99.997	7004.29.3	1000 +/- 3
Lithium	Li	7439-93-2	99.999	7015.46.5	1000 +/- 3
Lead	Pb	7439-92-1	99.999	7023.29.2	1000 +/- 3
Strontium	Sr	7440-24-6	99.998	7030.46.4	1000 +/- 3
Thorium	Th	7440-29-1	99.98	7031.46.4	1000 +/- 3
Uranium	U	7440-61-1	99.8	7035.330.1	1000 +/- 3
Vanadium	V	7440-62-2	99.995	7036.46.6	1000 +/- 3
Zinc	Zn	7440-66-6	99.9995	7037.46.5	1000 +/- 3

Certified By: Carrie Bibbins

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

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444963
ID: ICPC13 CAL E_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 E

Certificate of Analysis

Rev 0

Description: Custom 34 Element Mix (ICPC- 2013- Cal 2,3), #2366, 500 mL mg/L in 10% HNO_3

Catalog No:	Matrix:	Lot No:	Storage:	Exp. Date:	Date Received:
ACSM2366-01-500mlE	10% HNO_3 + Tr HF	1064534	Ambient	1-Sep-2015	

Element	Symbol	CAS No	Purity %	Source Lot No	Concentration mg/L
Thallium	Tl	7440-28-0	99.99	7034.29.4	200 +/- .6
Selenium	Se	7782-49-2	99.999	7027.46.4	200 +/- .6
Arsenic	As	7440-38-2	99.9999	7002.46.5	1000 +/- 3
Beryllium	Be	7440-41-7	99.999	7005.46.5	1000 +/- 3
Bismuth	Bi	7440-69-9	99.999	7040.117.1	1000 +/- 3
Cadmium	Cd	7440-43-9	99.9999	7007.46.3	1000 +/- 3
Cobalt	Co	7440-48-4	99.995	7008.46.8	1000 +/- 3
Chromium	Cr	7440-47-3	99.998	7009.46.3	1000 +/- 3
Copper	Cu	7440-50-8	99.9995	7011.46.5	1000 +/- 3
Manganese	Mn	7439-96-5	99.95	7017.46.5	1000 +/- 3
Nickel	Ni	7440-02-0	99.995	7021.46.8	1000 +/- 3

Certified By: Carrie Bibbins

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

This standard was manufactured by an ISO 17025 Chemical Testing Lab (Certificate number 3031.01) accredited by The American Association of Laboratory Accreditation (A2LA). Manufacturer's Quality System audited and registered by NSF-ISR to ISO 9001:2008 (Certificate number IZ391-IS4).

Reagent

ICPC13 CAL C_00002

AccuScience
15520 Oakwood Street
Pierrefonds QC Canada H9H1Y2
877-723-2220
www.accuscience.com

444929
ID: ICPC13 CAL A_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 A

444944
ID: ICPC13 CAL B_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 B

Certificate of Analysis

Rev 0

Description: Custom 34 Element Mix (ICPC- 2013- Cal 2,3), #2366, 500 mL
mg/L in 10% HNO_3 + Tr HF
K, Na, P, Al, Ca, Fe, Mg, B, Ba, Li, Pb, Sr, Th, U, V, Zn, Tl, Se, As, Be, Bi, Cd, Co, Cr, Cu, Mn, Ni shipped separately.

Catalog No:	Matrix:	Lot No:	Storage:	Exp. Date:	Date Received:
ACSM2366-01-500ml	10% HNO_3 + Tr HF	1064528	Ambient	1-Sep-2015	

Element	Symbol	CAS No	Purity %	Source Lot No	Concentration mg/L
Silver	Ag	7440-22-4	99.999	7000.29.1	200 +/- .6
Molybdenum	Mo	7439-98-7	99.999	7018.29.3	200 +/- .6
Antimony	Sb	7440-36-0	99.999	7026.46.3	200 +/- .6
Silicon	Si	7440-21-3	99.999	7028.46.15	1000 +/- 3
Tin	Sn	7440-31-5	99.999	7029.46.4	1000 +/- 3
Titanium	Ti	7440-32-6	99.995	7033.343.1	1000 +/- 3
Sulfur	S	7704-34-9	95.9	7025.43.5	10000 +/- 30
Potassium	K	7440-09-7	99.999	7013.46.10	10000 +/- 20
Sodium	Na	7440-23-5	99.999	7020.46.7	10000 +/- 20
Phosphorus	P	7723-14-0	99.9999	7022.46.12	10000 +/- 20

Certified By: Carrie Bibbins

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

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444948
ID: ICPC13 CAL C_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 C

444961
ID: ICPC13 CAL D_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 D

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Certificate of Analysis

Rev 0

Description: Custom 34 Element Mix (ICPC- 2013- Cal 2,3), #2366, 500 mL
mg/L in 10% HNO_3
Ag, Mo, Sb, Si, Sn, Ti, S, K, Na, P, Tl, Se, As, Be, Bi, Cd, Co, Cr, Cu, Mn, Ni shipped separately.

Catalog No:	Matrix:	Lot No:	Storage:	Exp. Date:	Date Received:
ACSM2366-01-500mlC	10% HNO_3	1064535	Ambient	1-Sep-2015	

Element	Symbol	CAS No	Purity %	Source Lot No	Concentration mg/L
Aluminum	Al	7429-90-5	99.9995	7001.46.8	10000 +/- 20
Calcium	Ca	7440-70-2	99.999	7006.29.2	10000 +/- 20
Iron	Fe	7439-89-6	99.99	7012.46.14	10000 +/- 20
Magnesium	Mg	7439-95-4	99.99	7016.46.5	10000 +/- 20
Boron	B	7440-42-8	99.999	7003.46.5	1000 +/- 3
Barium	Ba	7440-39-3	99.997	7004.29.3	1000 +/- 3
Lithium	Li	7439-93-2	99.999	7015.46.5	1000 +/- 3
Lead	Pb	7439-92-1	99.999	7023.29.2	1000 +/- 3
Strontium	Sr	7440-24-6	99.998	7030.46.4	1000 +/- 3
Thorium	Th	7440-29-1	99.98	7031.46.4	1000 +/- 3
Uranium	U	7440-61-1	99.8	7035.330.1	1000 +/- 3
Vanadium	V	7440-62-2	99.995	7036.46.6	1000 +/- 3
Zinc	Zn	7440-66-6	99.9995	7037.46.5	1000 +/- 3

Certified By: Carrie Bibbins

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

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444963
ID: ICPC13 CAL E_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 E

Certificate of Analysis

Rev 0

Description: Custom 34 Element Mix (ICPC- 2013- Cal 2,3), #2366, 500 mL mg/L in 10% HNO_3

Catalog No:	Matrix:	Lot No:	Storage:	Exp. Date:	Date Received:
ACSM2366-01-500mlE	10% HNO_3 + Tr HF	1064534	Ambient	1-Sep-2015	

Element	Symbol	CAS No	Purity %	Source Lot No	Concentration mg/L
Thallium	Tl	7440-28-0	99.99	7034.29.4	200 +/- .6
Selenium	Se	7782-49-2	99.999	7027.46.4	200 +/- .6
Arsenic	As	7440-38-2	99.9999	7002.46.5	1000 +/- 3
Beryllium	Be	7440-41-7	99.999	7005.46.5	1000 +/- 3
Bismuth	Bi	7440-69-9	99.999	7040.117.1	1000 +/- 3
Cadmium	Cd	7440-43-9	99.9999	7007.46.3	1000 +/- 3
Cobalt	Co	7440-48-4	99.995	7008.46.8	1000 +/- 3
Chromium	Cr	7440-47-3	99.998	7009.46.3	1000 +/- 3
Copper	Cu	7440-50-8	99.9995	7011.46.5	1000 +/- 3
Manganese	Mn	7439-96-5	99.95	7017.46.5	1000 +/- 3
Nickel	Ni	7440-02-0	99.995	7021.46.8	1000 +/- 3

Certified By: Carrie Bibbins

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

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Reagent

ICPC13 CAL D_00002

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www.accuscience.com

444929
ID: ICPC13 CAL A_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 A

444944
ID: ICPC13 CAL B_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 B

Certificate of Analysis

Rev 0

Description: Custom 34 Element Mix (ICPC- 2013- Cal 2,3), #2366, 500 mL
mg/L in 10% HNO_3 + Tr HF
K, Na, P, Al, Ca, Fe, Mg, B, Ba, Li, Pb, Sr, Th, U, V, Zn, Tl, Se, As, Be, Bi, Cd, Co, Cr, Cu, Mn, Ni shipped separately.

Catalog No:	Matrix:	Lot No:	Storage:	Exp. Date:	Date Received:
ACSM2366-01-500ml	10% HNO_3 + Tr HF	1064528	Ambient	1-Sep-2015	

Element	Symbol	CAS No	Purity %	Source Lot No	Concentration mg/L
Silver	Ag	7440-22-4	99.999	7000.29.1	200 +/- .6
Molybdenum	Mo	7439-98-7	99.999	7018.29.3	200 +/- .6
Antimony	Sb	7440-36-0	99.999	7026.46.3	200 +/- .6
Silicon	Si	7440-21-3	99.999	7028.46.15	1000 +/- 3
Tin	Sn	7440-31-5	99.999	7029.46.4	1000 +/- 3
Titanium	Ti	7440-32-6	99.995	7033.343.1	1000 +/- 3
Sulfur	S	7704-34-9	95.9	7025.43.5	10000 +/- 30
Potassium	K	7440-09-7	99.999	7013.46.10	10000 +/- 20
Sodium	Na	7440-23-5	99.999	7020.46.7	10000 +/- 20
Phosphorus	P	7723-14-0	99.9999	7022.46.12	10000 +/- 20

Certified By: Carrie Bibbins

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

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444948
ID: ICPC13 CAL C_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 C

444961
ID: ICPC13 CAL D_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 D

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Certificate of Analysis

Rev 0

Description: Custom 34 Element Mix (ICPC- 2013- Cal 2,3), #2366, 500 mL
mg/L in 10% HNO_3
Ag, Mo, Sb, Si, Sn, Ti, S, K, Na, P, Tl, Se, As, Be, Bi, Cd, Co, Cr, Cu, Mn, Ni shipped separately.

Catalog No:	Matrix:	Lot No:	Storage:	Exp. Date:	Date Received:
ACSM2366-01-500mlC	10% HNO_3	1064535	Ambient	1-Sep-2015	

Element	Symbol	CAS No	Purity %	Source Lot No	Concentration mg/L
Aluminum	Al	7429-90-5	99.9995	7001.46.8	10000 +/- 20
Calcium	Ca	7440-70-2	99.999	7006.29.2	10000 +/- 20
Iron	Fe	7439-89-6	99.99	7012.46.14	10000 +/- 20
Magnesium	Mg	7439-95-4	99.99	7016.46.5	10000 +/- 20
Boron	B	7440-42-8	99.999	7003.46.5	1000 +/- 3
Barium	Ba	7440-39-3	99.997	7004.29.3	1000 +/- 3
Lithium	Li	7439-93-2	99.999	7015.46.5	1000 +/- 3
Lead	Pb	7439-92-1	99.999	7023.29.2	1000 +/- 3
Strontium	Sr	7440-24-6	99.998	7030.46.4	1000 +/- 3
Thorium	Th	7440-29-1	99.98	7031.46.4	1000 +/- 3
Uranium	U	7440-61-1	99.8	7035.330.1	1000 +/- 3
Vanadium	V	7440-62-2	99.995	7036.46.6	1000 +/- 3
Zinc	Zn	7440-66-6	99.9995	7037.46.5	1000 +/- 3

Certified By: Carrie Bibbins

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

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444963
ID: ICPC13 CAL E_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 E

Certificate of Analysis

Rev 0

Description: Custom 34 Element Mix (ICPC- 2013- Cal 2,3), #2366, 500 mL mg/L in 10% HNO_3

Catalog No:	Matrix:	Lot No:	Storage:	Exp. Date:	Date Received:
ACSM2366-01-500mlE	10% HNO_3 + Tr HF	1064534	Ambient	1-Sep-2015	

Element	Symbol	CAS No	Purity %	Source Lot No	Concentration mg/L
Thallium	Tl	7440-28-0	99.99	7034.29.4	200 +/- .6
Selenium	Se	7782-49-2	99.999	7027.46.4	200 +/- .6
Arsenic	As	7440-38-2	99.9999	7002.46.5	1000 +/- 3
Beryllium	Be	7440-41-7	99.999	7005.46.5	1000 +/- 3
Bismuth	Bi	7440-69-9	99.999	7040.117.1	1000 +/- 3
Cadmium	Cd	7440-43-9	99.9999	7007.46.3	1000 +/- 3
Cobalt	Co	7440-48-4	99.995	7008.46.8	1000 +/- 3
Chromium	Cr	7440-47-3	99.998	7009.46.3	1000 +/- 3
Copper	Cu	7440-50-8	99.9995	7011.46.5	1000 +/- 3
Manganese	Mn	7439-96-5	99.95	7017.46.5	1000 +/- 3
Nickel	Ni	7440-02-0	99.995	7021.46.8	1000 +/- 3

Certified By: Carrie Bibbins

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

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Reagent

ICPC13 CAL E_00002

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877-723-2220
www.accuscience.com

444929
ID: ICPC13 CAL A_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 A

444944
ID: ICPC13 CAL B_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 B

Certificate of Analysis

Rev 0

Description: Custom 34 Element Mix (ICPC- 2013- Cal 2,3), #2366, 500 mL
mg/L in 10% HNO_3 + Tr HF
K, Na, P, Al, Ca, Fe, Mg, B, Ba, Li, Pb, Sr, Th, U, V, Zn, Tl, Se, As, Be, Bi, Cd, Co, Cr, Cu, Mn, Ni shipped separately.

Catalog No:	Matrix:	Lot No:	Storage:	Exp. Date:	Date Received:
ACSM2366-01-500ml	10% HNO_3 + Tr HF	1064528	Ambient	1-Sep-2015	

Element	Symbol	CAS No	Purity %	Source Lot No	Concentration mg/L
Silver	Ag	7440-22-4	99.999	7000.29.1	200 +/- .6
Molybdenum	Mo	7439-98-7	99.999	7018.29.3	200 +/- .6
Antimony	Sb	7440-36-0	99.999	7026.46.3	200 +/- .6
Silicon	Si	7440-21-3	99.999	7028.46.15	1000 +/- 3
Tin	Sn	7440-31-5	99.999	7029.46.4	1000 +/- 3
Titanium	Ti	7440-32-6	99.995	7033.343.1	1000 +/- 3
Sulfur	S	7704-34-9	95.9	7025.43.5	10000 +/- 30
Potassium	K	7440-09-7	99.999	7013.46.10	10000 +/- 20
Sodium	Na	7440-23-5	99.999	7020.46.7	10000 +/- 20
Phosphorus	P	7723-14-0	99.9999	7022.46.12	10000 +/- 20

Certified By: Carrie Bibbins

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

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444948
ID: ICPC13 CAL C_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 C

444961
ID: ICPC13 CAL D_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 D

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Certificate of Analysis

Rev 0

Description: Custom 34 Element Mix (ICPC- 2013- Cal 2,3), #2366, 500 mL
mg/L in 10% HNO_3
Ag, Mo, Sb, Si, Sn, Ti, S, K, Na, P, Tl, Se, As, Be, Bi, Cd, Co, Cr, Cu, Mn, Ni shipped separately.

Catalog No:	Matrix:	Lot No:	Storage:	Exp. Date:	Date Received:
ACSM2366-01-500mlC	10% HNO_3	1064535	Ambient	1-Sep-2015	

Element	Symbol	CAS No	Purity %	Source Lot No	Concentration mg/L
Aluminum	Al	7429-90-5	99.9995	7001.46.8	10000 +/- 20
Calcium	Ca	7440-70-2	99.999	7006.29.2	10000 +/- 20
Iron	Fe	7439-89-6	99.99	7012.46.14	10000 +/- 20
Magnesium	Mg	7439-95-4	99.99	7016.46.5	10000 +/- 20
Boron	B	7440-42-8	99.999	7003.46.5	1000 +/- 3
Barium	Ba	7440-39-3	99.997	7004.29.3	1000 +/- 3
Lithium	Li	7439-93-2	99.999	7015.46.5	1000 +/- 3
Lead	Pb	7439-92-1	99.999	7023.29.2	1000 +/- 3
Strontium	Sr	7440-24-6	99.998	7030.46.4	1000 +/- 3
Thorium	Th	7440-29-1	99.98	7031.46.4	1000 +/- 3
Uranium	U	7440-61-1	99.8	7035.330.1	1000 +/- 3
Vanadium	V	7440-62-2	99.995	7036.46.6	1000 +/- 3
Zinc	Zn	7440-66-6	99.9995	7037.46.5	1000 +/- 3

Certified By: Carrie Bibbins

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

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444963
ID: ICPC13 CAL E_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 CAL 2,3 E

Certificate of Analysis

Rev 0

Description: Custom 34 Element Mix (ICPC- 2013- Cal 2,3), #2366, 500 mL mg/L in 10% HNO_3

Catalog No:	Matrix:	Lot No:	Storage:	Exp. Date:	Date Received:
ACSM2366-01-500mlE	10% HNO_3 + Tr HF	1064534	Ambient	1-Sep-2015	

Element	Symbol	CAS No	Purity %	Source Lot No	Concentration mg/L
Thallium	Tl	7440-28-0	99.99	7034.29.4	200 +/- .6
Selenium	Se	7782-49-2	99.999	7027.46.4	200 +/- .6
Arsenic	As	7440-38-2	99.9999	7002.46.5	1000 +/- 3
Beryllium	Be	7440-41-7	99.999	7005.46.5	1000 +/- 3
Bismuth	Bi	7440-69-9	99.999	7040.117.1	1000 +/- 3
Cadmium	Cd	7440-43-9	99.9999	7007.46.3	1000 +/- 3
Cobalt	Co	7440-48-4	99.995	7008.46.8	1000 +/- 3
Chromium	Cr	7440-47-3	99.998	7009.46.3	1000 +/- 3
Copper	Cu	7440-50-8	99.9995	7011.46.5	1000 +/- 3
Manganese	Mn	7439-96-5	99.95	7017.46.5	1000 +/- 3
Nickel	Ni	7440-02-0	99.995	7021.46.8	1000 +/- 3

Certified By: Carrie Bibbins

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

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Reagent

ICPC13 ICSA 1_00002

AccuScience
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877-723-2220
www.accuscience.com

444894
ID: ICPC13 ICSA 1_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 ICSA 1

444908
ID: ICPC13 ICSA 2_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 ICSA 2

Certificate of Analysis

Rev 0

Description: Custom 8 Element Mix, #2367, 500 mL
20,000 mg/L in 5% HNO_3
Al, Ca, Fe, Mg shipped separately in 10% HNO_3.

Catalog No:	Matrix:	Lot No:	Storage:	Exp. Date:	Date Received:
ACSM2367-01-500ml	5% HNO3	1064353	Ambient	1-Sep-2015	

Element	Symbol	CAS No	Purity %	Source Lot No	Concentration mg/L
Potassium	K	7440-09-7	99.999	7013.46.10	20000 +/- 40
Sodium	Na	7440-23-5	99.999	7020.46.7	20000 +/- 40
Phosphorus	P	7723-14-0	99.9999	7022.46.12	20000 +/- 40
Sulfur	S	7704-34-9	95.9	7025.43.5	20000 +/- 70
Aluminum	Al	7429-90-5	99.9995	7001.46.8	20000 +/- 40
Calcium	Ca	7440-70-2	99.999	7006.29.2	20000 +/- 40
Iron	Fe	7439-89-6	99.99	7012.46.14	20000 +/- 40
Magnesium	Mg	7439-95-4	99.99	7016.46.5	20000 +/- 40

Certified By: Tiffany Kwasigroch

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

This standard was manufactured by an ISO 17025 Chemical Testing Lab (Certificate number 3031.01) accredited by The American Association of Laboratory Accreditation (A2LA). Manufacturer's Quality System audited and registered by NSF-ISR to ISO 9001:2008 (Certificate number IZ391-IS4).

Reagent

ICPC13 ICSA 2_00002

AccuScience
15520 Oakwood Street
Pierrefonds QC Canada H9H1Y2
877-723-2220
www.accuscience.com

444894
ID: ICPC13 ICSA 1_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 ICSA 1

444908
ID: ICPC13 ICSA 2_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 ICSA 2

Certificate of Analysis

Rev 0

Description: Custom 8 Element Mix, #2367, 500 mL
20,000 mg/L in 5% HNO_3
Al, Ca, Fe, Mg shipped separately in 10% HNO_3.

Catalog No:	Matrix:	Lot No:	Storage:	Exp. Date:	Date Received:
ACSM2367-01-500ml	5% HNO3	1064353	Ambient	1-Sep-2015	

Element	Symbol	CAS No	Purity %	Source Lot No	Concentration mg/L
Potassium	K	7440-09-7	99.999	7013.46.10	20000 +/- 40
Sodium	Na	7440-23-5	99.999	7020.46.7	20000 +/- 40
Phosphorus	P	7723-14-0	99.9999	7022.46.12	20000 +/- 40
Sulfur	S	7704-34-9	95.9	7025.43.5	20000 +/- 70
Aluminum	Al	7429-90-5	99.9995	7001.46.8	20000 +/- 40
Calcium	Ca	7440-70-2	99.999	7006.29.2	20000 +/- 40
Iron	Fe	7439-89-6	99.99	7012.46.14	20000 +/- 40
Magnesium	Mg	7439-95-4	99.99	7016.46.5	20000 +/- 40

Certified By: Tiffany Kwasigroch

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

This standard was manufactured by an ISO 17025 Chemical Testing Lab (Certificate number 3031.01) accredited by The American Association of Laboratory Accreditation (A2LA). Manufacturer's Quality System audited and registered by NSF-ISR to ISO 9001:2008 (Certificate number IZ391-IS4).

Reagent

ICPC13 LLC A_00003

AccuScience
15520 Oakwood Street
Pierrefonds QC Canada H9H1Y2
877-723-2220
www.accuscience.com

435178
ID: ICPC13 LLC A_00003
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC LLC 2013 solution A

435179
ID: ICPC13 LLC B_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 LLC B

Certificate of Analysis

Rev 0

Description: Custom 34 Element Mix, #2365, 250 mL
mg/L in 2% HNO_3
Ag, Sb, Ti, Mo, Sn, Si, S shipped separately.

Catalog No:	Matrix:	Lot No:	Storage:	Exp. Date:	Date Received:
ACSM2365-01-250ML	2% HNO_3 + Tr HF	1064407	Ambient	1-Sep-2015	

Element	Symbol	CAS No	Purity %	Source Lot No	Concentration mg/L	
Beryllium	Be	7440-41-7	99.999	7005.46.4	3	+/- .05
Cadmium	Cd	7440-43-9		7007.29.3	3	+/- .05
Strontium	Sr	7440-24-6		7030.46.2	3	+/- .05
Arsenic	As	7440-38-2		7002.46.5	5	+/- .2
Chromium	Cr	7440-47-3		7009.46.3	5	+/- .2
Lead	Pb	7439-92-1		7023.29.1	5	+/- .2
Selenium	Se	7782-49-2		7027.46.4	8	+/- .225
Manganese	Mn	7439-96-5		7017.46.4	8	+/- .225
Thallium	Tl	7440-28-0		7236.46.1	10	+/- .2
Zinc	Zn	7440-66-6		7037.46.5	10	+/- .2
Copper	Cu	7440-50-8		7011.46.4	13	+/- .25
Nickel	Ni	7440-02-0		7021.46.8	20	+/- .2
Boron	B	7440-42-8		7003.46.5	25	+/- .5
Barium	Ba	7440-39-3		7004.29.2	25	+/- .5
Cobalt	Co	7440-48-4		7008.46.8	25	+/- .5
Lithium	Li	7439-93-2		7015.46.5	25	+/- .5
Vanadium	V	7440-62-2		7036.46.5	25	+/- .5
Iron	Fe	7439-89-6		7012.46.13	50	+/- 1
Aluminum	Al	7429-90-5		7001.46.7	100	+/- 2
Bismuth	Bi	7440-69-9		7040.46.2	100	+/- 1
Thorium	Th	7440-29-1		7031.46.3	100	+/- .4
Phosphorus	P	7723-14-0		7022.46.11	125	+/- 2.5
Uranium	U	7440-61-1		7035.330.1	250	+/- 1
Calcium	Ca	7440-70-2		7006.46.12	500	+/- 2
Magnesium	Mg	7439-95-4		7016.46.5	500	+/- 2
Sodium	Na	7440-23-5		7020.46.6	500	+/- 2
Potassium	K	7440-09-7		7013.46.9	2500	+/- 10

Certified By: Carrie Bibbins

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

This standard was manufactured by an ISO 17025 Chemical Testing Lab (Certificate number 3031.01) accredited by The American Association of Laboratory Accreditation (A2LA). Manufacturer's quality system audited and registered by NSF-ISR to ISO 9001:2008 (Certificate number IZ391-IS4).

Silver	Ag	7440-22-4	7000.29.1	5	+/- .2
Antimony	Sb	7440-36-0	7026.46.3	5	+/- .2
Titanium	Ti	7440-32-6	7033.38.2	10	+/- .2
Molybdenum	Mo	7439-98-7	7018.29.3	20	+/- .2
Tin	Sn	7440-31-5	7029.46.4	50	+/- 1
Silicon	Si	7440-21-3	7028.46.12	200	+/- .8
Sulfur	S	7704-34-9	7025.43.5	2500	+/- 10

Certified By: Carrie Bibbins

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

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Reagent

ICPC13 LLC B_00002

AccuScience
15520 Oakwood Street
Pierrefonds QC Canada H9H1Y2
877-723-2220
www.accuscience.com

435178
ID: ICPC13 LLC A_00003
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC LLC 2013 solution A

435179
ID: ICPC13 LLC B_00002
Exp:09/01/15 Prpd:FLC Opn:09/08/14
ICPC 2013 LLC B

Certificate of Analysis

Rev 0

Description: Custom 34 Element Mix, #2365, 250 mL
mg/L in 2% HNO_3
Ag, Sb, Ti, Mo, Sn, Si, S shipped separately.

Catalog No:	Matrix:	Lot No:	Storage:	Exp. Date:	Date Received:
ACSM2365-01-250ML	2% HNO_3 + Tr HF	1064407	Ambient	1-Sep-2015	

Element	Symbol	CAS No	Purity %	Source Lot No	Concentration mg/L	
Beryllium	Be	7440-41-7	99.999	7005.46.4	3	+/- .05
Cadmium	Cd	7440-43-9		7007.29.3	3	+/- .05
Strontium	Sr	7440-24-6		7030.46.2	3	+/- .05
Arsenic	As	7440-38-2		7002.46.5	5	+/- .2
Chromium	Cr	7440-47-3		7009.46.3	5	+/- .2
Lead	Pb	7439-92-1		7023.29.1	5	+/- .2
Selenium	Se	7782-49-2		7027.46.4	8	+/- .225
Manganese	Mn	7439-96-5		7017.46.4	8	+/- .225
Thallium	Tl	7440-28-0		7236.46.1	10	+/- .2
Zinc	Zn	7440-66-6		7037.46.5	10	+/- .2
Copper	Cu	7440-50-8		7011.46.4	13	+/- .25
Nickel	Ni	7440-02-0		7021.46.8	20	+/- .2
Boron	B	7440-42-8		7003.46.5	25	+/- .5
Barium	Ba	7440-39-3		7004.29.2	25	+/- .5
Cobalt	Co	7440-48-4		7008.46.8	25	+/- .5
Lithium	Li	7439-93-2		7015.46.5	25	+/- .5
Vanadium	V	7440-62-2		7036.46.5	25	+/- .5
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Aluminum	Al	7429-90-5		7001.46.7	100	+/- 2
Bismuth	Bi	7440-69-9		7040.46.2	100	+/- 1
Thorium	Th	7440-29-1		7031.46.3	100	+/- .4
Phosphorus	P	7723-14-0		7022.46.11	125	+/- 2.5
Uranium	U	7440-61-1		7035.330.1	250	+/- 1
Calcium	Ca	7440-70-2		7006.46.12	500	+/- 2
Magnesium	Mg	7439-95-4		7016.46.5	500	+/- 2
Sodium	Na	7440-23-5		7020.46.6	500	+/- 2
Potassium	K	7440-09-7		7013.46.9	2500	+/- 10

Certified By: Carrie Bibbins

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

This standard was manufactured by an ISO 17025 Chemical Testing Lab (Certificate number 3031.01) accredited by The American Association of Laboratory Accreditation (A2LA). Manufacturer's quality system audited and registered by NSF-ISR to ISO 9001:2008 (Certificate number IZ391-IS4).

Silver	Ag	7440-22-4	7000.29.1	5	+/- .2
Antimony	Sb	7440-36-0	7026.46.3	5	+/- .2
Titanium	Ti	7440-32-6	7033.38.2	10	+/- .2
Molybdenum	Mo	7439-98-7	7018.29.3	20	+/- .2
Tin	Sn	7440-31-5	7029.46.4	50	+/- 1
Silicon	Si	7440-21-3	7028.46.12	200	+/- .8
Sulfur	S	7704-34-9	7025.43.5	2500	+/- 10

Certified By: Carrie Bibbins

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a k value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

This standard was manufactured by an ISO 17025 Chemical Testing Lab (Certificate number 3031.01) accredited by The American Association of Laboratory Accreditation (A2LA). Manufacturer's Quality System audited and registered by NSF-ISR to ISO 9001:2008 (Certificate number 1Z391-IS4).

Reagent

Sr-90_00001

Eckert & Ziegler
Analytics

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318
Tel 404·352·8677
Fax 404·352·2837
www.analyticsinc.com

CERTIFICATE OF CALIBRATION
Standard Radionuclide Source

80573-334
5 mL Liquid in Flame Sealed Vial

Customer: Test America St. Louis
P.O. No.: 2324797, Item 1

This standard radionuclide source was prepared gravimetrically from a calibrated master solution. The master solution was calibrated by liquid scintillation counting. Radionuclide purity and calibration were checked by germanium gamma-ray spectrometry and liquid scintillation counting. The nuclear decay rate and assay date for this source are given below. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 1, February, 1979, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Isotope	Half-Life, Days	Activity (Bq)	Uncertainty*, % Type u_A	u_B	U	Reference Date (12:00 PM EST)
Sr-90	10515.5	3.782E+04	0.1	0.9	1.8	09/17/2009

*Uncertainty: U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

Comments:
Impurities: γ-impurities <0.1%. 5.04317 grams 0.1M HCl solution with approximately 30 microg/g each of Sr and Y carriers. NOTE: This source also contains Y-90 in secular equilibrium with Sr-90. The Y-90 activity is equal to the Sr-90 activity. Since Sr-90 and Y-90 both decay 100% by beta emission, the total beta emission rate for the source is twice the certified Sr-90 activity. The half-life for Y-90 is 64.08 hours.

Source Prepared by: _____
W. Mao, Radiochemist

QA Approved: _____ Date: 9-22-09
D. M. Montgomery, QA Manager

ACCREDITED SOURCE CALIBRATION LABORATORY
HEALTH PHYSICS SOCIETY
FOUNDED 1956

Corporate Office
24937 Avenue Tibbitts Valencia, California 91355

Laboratory
1380 Seaboard Industrial Blvd. Atlanta, Georgia 30318

Reagent

Sr-90_00017

Eckert & Ziegler
Analytics

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318
Tel 404•352•8677
Fax 404•352•2837
www.analyticsinc.com

CERTIFICATE OF CALIBRATION
Standard Radionuclide Source

92352

Sr-90 5 mL Liquid in Flame Sealed Vial

Customer: TestAmerica St. Louis
P.O. No.: 2502682, Item 1 Product Code: 8090-5FSA-37kBq

This standard radionuclide source was prepared gravimetrically from a master solution, calibrated by Eckert & Ziegler Analytics. The master solution was calibrated by liquid scintillation counting. Radionuclide calibration and purity were checked by germanium gamma-ray spectrometry, liquid scintillation counting, and/or alpha spectrometry, as applicable. The nuclear decay rate and reference date for this source are given below. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 2, July 2007, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Isotope	Half-Life, Days	Activity (Bq)	Uncertainty* , % Type u_A	u_B	U	Reference Date (12:00 PM EST)
Sr-90	1.052E+04	3.749E+04	0.1	0.9	1.8	11/29/2012

***Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

Comments:
Impurities: γ-impurities<0.1%.
5.02357 g 0.1M HCl solution with approximately 30 µg/g each Sr and Y carriers.

NOTE: This source also contains Y-90 in secular equilibrium with Sr-90. The Y-90 activity is equal to the Sr-90 activity. Since Sr-90 and Y-90 both decay 100% by beta emission, the total activity for the source is twice the certified Sr-90 activity. The half-life for Y-90 is 64.08 hours.

Source Prepared by: _____
Z. Dimitrova, Radiochemist

QA Approved: _____ Date: 26 Nov 12
J.D. McCorvey, Counting Room Manager

RAD12-0042
Sr-90
hursts
None
Prep/Opened: 11/28/2012
Exp(1): 11/29/2062
Exp(2): 11/29/2062

51511
ID Sr-90_00017
Sr-90 Ampoule

ACCREDITED SOURCE CALIBRATION LABORATORY — HEALTH PHYSICS SOCIETY — FOUNDED 1956

Corporate Office
24937 Avenue Tibbitts Valencia, California 91355

Laboratory
1380 Seaboard Industrial Blvd. Atlanta, Georgia, 30318

Reagent

Sr-90_00018

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Reagent ID: Sr-90_00018

		Expiration Date:	11/29/2062
Description:	Sr-90 Calibration STD	Laboratory:	TestAmerica St. Louis
No. of Bottles:	1	Prepared By:	Hurst, Sarah
Storage Location:	RAD Separations Reagents - 1	Solvent:	0.1M HCL
Reagent Volume:	100.000 mL	Solvent Lot:	0
Creation Date:	11/28/2012		
Container(s):	51512		
Comment:	Rad12-0043		

Reagent Analyte Information

Analyte	Source ID	Source Exp. Date	Source Conc.	Source Conc. Units	Final Conc.	Final Conc. Units
Gross Beta	Sr-90_00017	11/29/2062	14925.64000	Bq/g	44774.23338	dpm/mL
Sr-90	Sr-90_00017	11/29/2062	7462.82000	Bq/g	22387.11669	dpm/mL

Source Reagents

Reagent	Description	Type	Expiration	Vendor	Vendor Lot #	Vendor Cat Lot #	Volume Used	Volume Units
Sr-90_00017	Sr-90 Ampoule	ASTD	11/29/62	Analytics	92352		4.99970	g

St. Louis Radiological Standard Reverification Form

Standard ID Number: Sr-90_00018 (51512)
True Value = 1976.75 pCi/sample or g
Date Analyzed: 2/10/2014

Radionuclide: Sr-90 (Low mass)

	Replicates	
#1	1935	pCi/sample or g
#2	1941	pCi/sample or g
#3	1924	pCi/sample or g

Mean = 1933.333

1 sigma = 8.621678 1.96 sigma = 16.89849

True Value minus 5% = 1877.913 (True Value - 5%)
True Value plus 5% = 2075.588 (True Value + 5%)

Accuracy:
Mean value within 5% of Certified (True) Value? **Yes** **(Acceptance Criteria)**

Precision:
1.96 sigma Value Within 10% of Mean Value? **Yes** **(Acceptance Criteria)**

Standard Reverification Acceptable? **Yes**

Note: Criteria for reverification of radiological standards is taken from the DOE QSAS and LANL Statements of Work

Reviewed By/Date: Jody Watson 2/10/14

SOP Reference: STL-QA-0002, Current Revision

St. Louis Radiological Standard Reverification Form

Standard ID Number: Sr-90_00018 (51512)
True Value = 1948.75 pCi/sample or g
Date Analyzed: 2/10/2014

Radionuclide: Sr-90 (Medium mass)

Replicates		
#1	1911	pCi/sample or g
#2	1945	pCi/sample or g
#3	1893	pCi/sample or g

Mean = 1916.333

1 sigma = 26.40707 1.96 sigma = 51.75786

True Value minus 5% = 1851.313 (True Value - 5%)
True Value plus 5% = 2046.188 (True Value + 5%)

Accuracy:
Mean value within 5% of Certified (True) Value? **Yes** **(Acceptance Criteria)**

Precision:
1.96 sigma Value Within 10% of Mean Value? **Yes** **(Acceptance Criteria)**

Standard Reverification Acceptable? **Yes**

Note: Criteria for reverification of radiological standards is taken from the DOE QSAS and LANL Statements of Work

Reviewed By/Date: Jody Watson 2/10/14

SOP Reference: STL-QA-0002, Current Revision

St. Louis Radiological Standard Reverification Form

Standard ID Number: Sr-90_00018 (51512)
True Value = 1992 pCi/sample or g
Date Analyzed: 2/10/2014

Radionuclide: Sr-90 (High mass)

Replicates

#1	1907	pCi/sample or g
#2	1930	pCi/sample or g
#3	1937	pCi/sample or g

Mean = 1924.667

1 sigma = 15.69501 1.96 sigma = 30.76222

True Value minus 5% = 1892.4 (True Value - 5%)
True Value plus 5% = 2091.6 (True Value + 5%)

Accuracy:
Mean value within 5% of Certified (True) Value? **Yes** **(Acceptance Criteria)**

Precision:
1.96 sigma Value Within 10% of Mean Value? **Yes** **(Acceptance Criteria)**

Standard Reverification Acceptable? **Yes**

Note: Criteria for reverification of radiological standards is taken from the DOE QSAS and LANL Statements of Work

Reviewed By/Date: Jody Watson 2/10/14

SOP Reference: STL-QA-0002, Current Revision

Protean Beta ICV-ACV recoveries from March 2013			
Protean Detector	**Low** pCi/sample	**Medium** pCi/sample	**High** pCi/sample
0	1962	1945	1971
1	2003	1947	1995
2	1960	1965	1998
3	1988	1942	1995
4	1977	1940	1997
5	1969	1949	2013
6	1986	1938	1986
7	1969	1964	1981
Average pCi/sample	1976.75	1948.75	1992

Protean Beta ICV-ACV recoveries from February 2014			
Protean Detector	**Low** pCi/sample	**Medium** pCi/sample	**High** pCi/sample
4	1935	1911	1907
5	1941	1945	1930
6	1924	1893	1937
Average pCi/sample	1933.33	1916.33	1924.67

Standard ID
Strontium 90
Sr-90_00018 #51512
Cert# 92352 Ref. date 11/29/12

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Analysis Report for Gross Alpha/Beta

Batch: M122640 **Operator:** 63903

Sample ID	WRKNO	Aliquot		Mass		Instr ID	CountTime		Ts	Tb	Dilution	Sigma	
	Analyte	Cs	Cb	XT		CPMs	CPMb	Eff	Activity	UncTot	UncCnt	MDA	DLC
ICVABT-51512;B1	NA	1.000E+000	sample	0.0513	g	Protean4	2/10/14 22:54		5.00	1000.00	1.00	2.00	
	Gross Alpha	0	49	0.00		0.000E+000	4.900E-002	0.1157	**-1.908E-001** pCi/sample	5.869E-002	5.452E-002	3.382E+000	8.968E-001
	Gross Beta	9072	417	0.00		1.814E+003	4.170E-001	0.4224	**1.935E+003** pCi/sample	1.977E+002	4.063E+001	1.594E+000	7.165E-001
ICVABT-51512;B2	NA	1.000E+000	sample	0.1114	g	Protean4	2/10/14 23:19		5.00	1000.00	1.00	2.00	
	Gross Alpha	1	49	0.00		2.000E-001	4.900E-002	0.0830	**8.194E-001** pCi/sample	2.174E+000	2.172E+000	4.713E+000	1.250E+000
	Gross Beta	8432	417	0.00		1.686E+003	4.170E-001	0.3973	**1.911E+003** pCi/sample	1.956E+002	4.164E+001	1.694E+000	7.616E-001
ICVABT-51512;B3	NA	1.000E+000	sample	0.1813	g	Protean4	2/10/14 23:04		5.00	1000.00	1.00	2.00	
	Gross Alpha	1	49	0.00		2.000E-001	4.900E-002	0.0540	**1.260E+000** pCi/sample	3.343E+000	3.340E+000	7.248E+000	1.922E+000
	Gross Beta	8054	417	0.00		1.611E+003	4.170E-001	0.3804	**1.907E+003** pCi/sample	1.954E+002	4.251E+001	1.770E+000	7.956E-001

Laboratory Control Sample Information

SampID	WRKNO	Analyte	Activity	StdAdded	Recovery %	LCL	UCL	ZFactor

Sample Duplicate Information

Sample ID	Dup Sample ID	Analyte	Sample Activity	Dup Activity	RPD	RER	DER	ZFactor

Matrix Spike Information

SampID	SampMSID	Analyte	Sample Activity	MS Activity	StdAdded	MSRecovery %	ZFactor

Blanks Information

SampID	WRKNO	Analyte	Activity	UncTotal	ZFactor

RadCapture, version 4.2.06, released 2/9/2012

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Analysis Report for Gross Alpha/Beta

Batch: M122640 **Operator:** 63903

Sample ID	WRKNO / Analyte	Aliquot Cs	Aliquot Cb	Mass XT	Mass	Instr ID CPMs	CountTime CPMb	CountTime Eff	Activity	Ts	Tb UncTot	Dilution UncCnt	Sigma MDA	DLC
ICVABT-51512;B1	NA	1.000E+000 sample		0.0513	g Protean5	2/10/14 23:04				5.00	1000.00	1.00	2.00	
	Gross Alpha	0	43	0.00	0.000E+000	4.300E-002	0.1145		**-1.692E-001** pCi/sample		5.510E-002	5.161E-002	3.337E+000	8.490E-001
	Gross Beta	9111	398	0.00	1.822E+003	3.980E-001	0.4228		**1.941E+003** pCi/sample		1.983E+002	4.068E+001	1.569E+000	6.992E-001
ICVABT-51512;B2	NA	1.000E+000 sample		0.1114	g Protean5	2/10/14 22:54				5.00	1000.00	1.00	2.00	
	Gross Alpha	0	43	0.00	0.000E+000	4.300E-002	0.0823		**-2.353E-001** pCi/sample		7.661E-002	7.176E-002	4.639E+000	1.180E+000
	Gross Beta	8552	398	0.00	1.710E+003	3.980E-001	0.3960		**1.945E+003** pCi/sample		1.990E+002	4.207E+001	1.675E+000	7.465E-001
ICVABT-51512;B3	NA	1.000E+000 sample		0.1813	g Protean5	2/10/14 23:19				5.00	1000.00	1.00	2.00	
	Gross Alpha	2	43	0.00	4.000E-001	4.300E-002	0.0532		**3.022E+000** pCi/sample		4.802E+000	4.790E+000	7.178E+000	1.826E+000
	Gross Beta	8046	398	0.00	1.609E+003	3.980E-001	0.3755		**1.930E+003** pCi/sample		1.977E+002	4.304E+001	1.766E+000	7.873E-001

Laboratory Control Sample Information

SampID	WRKNO	Analyte	Activity	StdAdded	Recovery %	LCL	UCL	ZFactor

Sample Duplicate Information

Sample ID	Dup Sample ID	Analyte	Sample Activity	Dup Activity	RPD	RER	DER	ZFactor

Matrix Spike Information

SampID	SampMSID	Analyte	Sample Activity	MS Activity	StdAdded	MSRecovery %	ZFactor

Blanks Information

SampID	WRKNO	Analyte	Activity	UncTotal	ZFactor

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Analysis Report for Gross Alpha/Beta

Batch: M122640 **Operator:** 63903

Sample ID	WRKNO	Aliquot		Mass		Instr ID	CountTime		Ts	Tb	Dilution	Sigma	
	Analyte	Cs	Cb	XT		CPMs	CPMb	Eff	Activity	UncTot	UncCnt	MDA	DLC
ICVABT-51512;B1	NA	1.000E+000	sample	0.0513	g	Protean6	2/10/14 23:19		5.00	1000.00	1.00	2.00	
	Gross Alpha	0	87	0.00	0.000E+000	8.700E-002	0.1165		-3.362E-001 pCi/sample	8.166E-002	7.210E-002	3.776E+000	1.186E+000
	Gross Beta	8992	520	0.00	1.798E+003	5.200E-001	0.4209		1.924E+003 pCi/sample	1.966E+002	4.059E+001	1.718E+000	8.029E-001
ICVABT-51512;B2	NA	1.000E+000	sample	0.1114	g	Protean6	2/10/14 23:04		5.00	1000.00	1.00	2.00	
	Gross Alpha	0	87	0.00	0.000E+000	8.700E-002	0.0842		-4.657E-001 pCi/sample	1.131E-001	9.985E-002	5.230E+000	1.642E+000
	Gross Beta	8356	520	0.00	1.671E+003	5.200E-001	0.3976		1.893E+003 pCi/sample	1.937E+002	4.142E+001	1.819E+000	8.499E-001
ICVABT-51512;B3	NA	1.000E+000	sample	0.1813	g	Protean6	2/10/14 22:54		5.00	1000.00	1.00	2.00	
	Gross Alpha	0	87	0.00	0.000E+000	8.700E-002	0.0559		-7.014E-001 pCi/sample	1.703E-001	1.504E-001	7.877E+000	2.474E+000
	Gross Beta	8127	520	0.00	1.625E+003	5.200E-001	0.3778		1.937E+003 pCi/sample	1.985E+002	4.300E+001	1.914E+000	8.945E-001

Laboratory Control Sample Information

SampID	WRKNO	Analyte	Activity	StdAdded	Recovery %	LCL	UCL	ZFactor

Sample Duplicate Information

Sample ID	Dup Sample ID	Analyte	Sample Activity	Dup Activity	RPD	RER	DER	ZFactor

Matrix Spike Information

SampID	SampMSID	Analyte	Sample Activity	MS Activity	StdAdded	MSRecovery %	ZFactor

Blanks Information

SampID	WRKNO	Analyte	Activity	UncTotal	ZFactor

TestAmerica St. Louis

Standards Preparation Logbook Record

Nov-28-2012

Logbook: \\Qstlmo01\Stdslog\RAD_STD.std

RAD12-0042, Sr-90 Sr-90_00017 #51511 Analyst: hursts

Vendor: Analytics Lot No.: 92352
Solvent: None
Date Prep./Opened: 11-28-2012
Date Expires(1): 11-29-2062 (50 Years)
Date Expires(2): 11-29-2062 (50 Years)
Cert: 92352 Activity: 37490Bq Mass: 5.02357 Ref. Date: 11/29/12

Component	Initial Conc (dpm/g)	Final Conc (dpm/g)
Sr-90	447,769	447,769

RAD12-0043, Sr-90 Calibration STD Sr-90_00018 #51512 Analyst: hursts

Solvent: None Volume (ml): 100.00
Date Prep./Opened: 11-28-2012
Date Expires(1): 11-29-2062 (50 Years)
Date Expires(2): 11-29-2062 (50 Years)

Parent Std No.: RAD12-0042, Sr-90 Aliquot Amount (g): 4.9997
Parent Date Expires(1): 11-29-2062 Parent Date Expires(2): 11-29-2062

Component	Initial Conc (dpm/g)	Final Conc (dpm/mL)
Sr-90	447,769	22,387

Reviewed By: SD

Page 1 of 1

St. Louis Radiological Standard Reverification Form

Standard ID Number: Rad12-0043
True Value = 2016.7 pCi/L or g
Date Analyzed: 11/30/2012

Radionuclide: Sr90

	Replicates	
#1	1964	pCi/L or g
#2	1958	pCi/L or g
#3	2015	pCi/L or g

Mean = 1979

1 sigma = 31.32092 1.96 sigma = 61.389

True Value minus 5% = 1915.865 (True Value - 5%)
True Value plus 5% = 2117.535 (True Value + 5%)

Accuracy:
Mean value within 5% of Certified (True) Value? **Yes** **(Acceptance Criteria)**

Precision:
1.96 sigma Value Within 10% of Mean Value? **Yes** **(Acceptance Criteria)**

Standard Reverification Acceptable? **Yes**

Note: Criteria for reverification of radiological standards is taken from the DOE QSAS and LANL Statements of Work

Reviewed By/Date: 11/30/12

SOP Reference: STL-QA-0002, Current Revision

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Analysis Report for Gross Alpha/Beta

Batch: M122629 **Operator:** 63903

Sample ID	WRKNO	Aliquot		Mass		Instr ID	CountTime		Ts	Tb	Dilution	Sigma	
	Analyte	Cs	Cb	XT		CPMs	CPMb	Eff	Activity	UncTot	UncCnt	MDA	DLC
verification-1b	NA	1.000E+000	sample	0.0536	g	Purple16	11/30/12 10:42		8.00	1000.00	1.00	1.00	
	Gross Alpha	123	175	0.00	1.538E+001	1.750E-001	0.4314	**1.587E+001**	pCi/sample	1.707E+000	1.448E+000	8.638E-001	3.593E-001
	Gross Beta	14954	485	0.00	1.869E+003	4.850E-001	0.4285	**1.964E+003**	pCi/sample	9.953E+001	1.607E+001	1.211E+000	6.021E-001
verification-2b	NA	1.000E+000	sample	0.0529	g	Purple17	11/30/12 10:43		8.00	1000.00	1.00	1.00	
	Gross Alpha	53	87	0.00	6.625E+000	8.700E-002	0.1306	**2.254E+001**	pCi/sample	3.391E+000	3.138E+000	2.356E+000	8.365E-001
	Gross Beta	15152	362	0.00	1.894E+003	3.620E-001	0.4356	**1.958E+003**	pCi/sample	9.919E+001	1.591E+001	1.077E+000	5.117E-001
verification-3b	NA	1.000E+000	sample	0.0528	g	Purple18	11/30/12 10:43		8.00	1000.00	1.00	1.00	
	Gross Alpha	85	62	0.00	1.063E+001	6.200E-002	0.1313	**3.624E+001**	pCi/sample	4.462E+000	3.954E+000	2.160E+000	7.027E-001
	Gross Beta	15378	395	0.00	1.922E+003	3.950E-001	0.4296	**2.015E+003**	pCi/sample	1.020E+002	1.625E+001	1.125E+000	5.420E-001

Laboratory Control Sample Information

SampID	WRKNO	Analyte	Activity	StdAdded	Recovery	LCL	UCL	ZFactor
					%			

Sample Duplicate Information

Sample ID	Dup Sample ID	Analyte	Sample Activity	Dup Activity	RPD	RER	DER	ZFactor

Matrix Spike Information

SampID	SampMSID	Analyte	Sample Activity	MS Activity	StdAdded	MSRecovery	ZFactor
						%	

Blanks Information

SampID	WRKNO	Analyte	Activity	UncTotal	ZFactor

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Prep Report for Gross Alpha/Beta

Batch: M122629 **Prep Analyst:** 250

SampID	WRKNO	Aliquot		purple Gross	Tare	Mass	Dilution
verification-1b	NA	1.000E+000	sample	8.7067 g	8.6531 g	0.0536 g	1.00
verification-2b	NA	1.000E+000	sample	8.6615 g	8.6086 g	0.0529 g	1.00
verification-3b	NA	1.000E+000	sample	8.6935 g	8.6407 g	0.0528 g	1.00

Spike Information

Sample ID	Standard ID	Analyte	Std Conc	Aliquot	Ref Date	StdAdded
	Rad12-0043	SR-90	22.387 dpm/mL	0.1mL	11-29-12	

MS — Spiked By

LM — Spike Verified By

11-28-12 — Spike Date

Standard Operating Procedures

SOPNumber	Title	Revision
☐		

Reviewed By — 11/30/12 Review Date

MS — Analyst/Relenquished By

11/28/12 — Release Date

Received By

11/28/12 — Receipt Date

MS 11-30-12 ~~112~~ 112343897/MS/11-28-12

Balance ID / Initials / Date

Reagent

Sr-90_00023

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sr - 90 - 00023

Reagent ID: Sr-90_00023

		Expiration Date:	04/23/2015
Description:	Sr-90 Gross Beta Spike	Laboratory:	TestAmerica St. Louis
No. of Bottles:	1	Prepared By:	Bernsen, Sarah C
Storage Location:	RAD Alpha/Beta STDs	Solvent:	0.1M HCl
Reagent Volume:	500.000 mL	Solvent Lot:	n/a
Creation Date:	04/22/2014		
Container(s):	351152		
Comment:	passed verification on 4/23/14		

351152
ID: Sr-90_00023
Exp: 04/23/15 Prpd: SCB Crt: 04/22/14
Sr-90 Gross Beta Spike

Reagent Analyte Information

Analyte	Source ID	Source Exp. Date	Source Conc.	Source Conc. Units	Final Conc.	Final Conc. Units
Gross Beta	Sr-90_00018	11/29/2062	44774.23300	dpm/mL	44.77423	dpm/mL
Sr-90	Sr-90_00018	11/29/2062	22387.11700	dpm/mL	22.38712	dpm/mL

Source Reagents

Reagent	Description	Type	Expiration	Vendor	Vendor Lot #	Vendor Cat Lot #	Volume Used	Volume Units
Sr-90_00018	Sr-90 Calibration STD		11/29/62				0.50000	mL

St. Louis Radiological Standard Reverification Form

Standard ID Number: Sr-90_00023
True Value = 97.47579 DPM/L or g
Date Analyzed: 4/23/2014

Radionuclide: Gross Beta

	Replicates	
#1	101.2	DPM/L or g
#2	100.4	DPM/L or g
#3	100	DPM/L or g

Mean = 100.5333

1 sigma = 0.61101

1.96 sigma = 1.19758

True Value minus 5% = 92.602 (True Value - 5%)
True Value plus 5% = 102.3496 (True Value + 5%)

Accuracy:
Mean value within 5% of Certified (True) Value? **Yes** **(Acceptance Criteria)**

Precision:
1.96 sigma Value Within 10% of Mean Value? **Yes** **(Acceptance Criteria)**

Standard Reverification Acceptable? **Yes**

Note: Criteria for reverification of radiological standards is taken from the DOE QSAS and LANL Statements of Work

Reviewed By/Date: Micha Korrinhizer 4/24/2014

SOP Reference: STL-QA-0002, Current Revision

$\frac{19.495 \text{ pCi}}{.2 \text{ L}} = 97.475 \frac{\text{pCi}}{\text{L}}$

For Gross Beta: ~~Always enter Sr90 value in to Decay Correct spreadsheet & use Sr90 value as true value~~ use corrected activity in pCi & divide by aliq.

Ex: $\frac{19.495 \text{ pCi/L}}{0.2 \text{ L}} = 97.475 \text{ pCi/L}$

on Decay Corr. spreadsheet

20 mL 4/23/14 400 mins.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Prep Report for Gross Alpha/Beta

Batch: M142830 **Prep Analyst:** 403651

SampID	WRKNO	Aliquot	Gross	Tare	Mass	Dilution
ver 1	NA Protean 13	2.000E+002 mL	8.6640 g	8.6220 g	0.0420 g	1.00
ver 2	NA 14	2.000E+002 mL	8.6411 g	8.5989 g	0.0422 g	1.00
ver 3	NA 15	2.000E+002 mL	8.6720 g	8.6307 g	0.0413 g	1.00

Spike Information

Sample ID	Standard ID	Analyte	Std Conc	Aliquot	Ref Date	StdAdded

SUB — Spiked By

NMP per SUB — Spike Verified By

4.23.14 — Spike Date

Standard Operating Procedures

SOPNumber	Title	Revision
☐		

Reviewed By — Review Date

SUB — Analyst/Relenquished By

4.23.14 — Release Date

mk — Received By

4/23/14 — Receipt Date

1121481615 | SUB | 4.23.14

Balance ID / Initials / Date

Sr-90 00023 1mL

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Analysis Report for Gross Alpha/Beta

Batch: M142830 **Operator:** 403135

Sample ID	WRKNO	Aliquot		Mass	Instr ID	CountTime		Ts	Tb	Dilution	Sigma	
	Analyte	Cs	Cb	XT	CPMs	CPMb	Eff	Activity	UncTot	UncCnt	MDA	DLC
ver 1	NA	2.000E+002mL		0.0420 g	Protean13	4/23/14 15:05		400.00	1000.00	1.00	2.00	
	Gross Alpha	28	50	3.27	7.000E-002	5.000E-002	0.1227	**3.672E-001**pCi/L	5.524E-001	5.508E-001	9.235E-001	4.775E-001
	Gross Beta	7890	450	3.27	1.973E+001	4.500E-001	0.4288	**1.012E+002**pCi/L	1.039E+001	2.344E+000	7.257E-001	4.117E-001
ver 2	NA	2.000E+002mL		0.0422 g	Protean14	4/23/14 15:06		400.00	1000.00	1.00	2.00	
	Gross Alpha	29	58	2.47	7.250E-002	5.800E-002	0.1202	**2.717E-001**pCi/L	5.806E-001	5.797E-001	1.005E+000	5.250E-001
	Gross Beta	7820	501	2.47	1.955E+001	5.010E-001	0.4274	**1.004E+002**pCi/L	1.030E+001	2.342E+000	7.649E-001	4.352E-001
ver 3	NA	2.000E+002mL		0.0413 g	Protean15	4/23/14 15:06		400.00	1000.00	1.00	2.00	
	Gross Alpha	38	68	4.40	9.500E-002	6.800E-002	0.1221	**4.982E-001**pCi/L	6.475E-001	6.450E-001	1.061E+000	5.597E-001
	Gross Beta	7736	507	4.40	1.934E+001	5.070E-001	0.4239	**1.000E+002**pCi/L	1.027E+001	2.350E+000	7.781E-001	4.425E-001

Laboratory Control Sample Information

SampID	WRKNO	Analyte	Activity	StdAdded	Recovery %	LCL	UCL	ZFactor

Sample Duplicate Information

Sample ID	Dup Sample ID	Analyte	Sample Activity	Dup Activity	RPD	RER	DER	ZFactor

Matrix Spike Information

SampID	SampMSID	Analyte	Sample Activity	MS Activity	StdAdded	MSRecovery %	ZFactor

Blanks Information

SampID	WRKNO	Analyte	Activity	UncTotal	ZFactor

RadCapture, version 4.2.06, released 2/9/2012

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Reagent ID: Sr-90_00023

Description:	Sr-90 Gross Beta Spike	Expiration Date:	09/10/2014
No. of Bottles:	1	Laboratory:	TestAmerica St. Louis
Storage Location:	RAD Alpha/Beta STDs	Prepared By:	Bernsen, Sarah C
Reagent Volume:	500.000 mL	Solvent:	0.1M HCl
Creation Date:	04/22/2014	Solvent Lot:	n/a
Container(s):	351152		
Comment:			

Reagent Analyte Information

Analyte	Source ID	Source Exp. Date	Source Conc.	Source Conc. Units	Final Conc.	Final Conc. Units
Gross Beta	Sr-90_00018	11/29/2062	44774.23300	dpm/mL	44.77423	dpm/mL
Sr-90	Sr-90_00018	11/29/2062	22387.11700	dpm/mL	22.38712	dpm/mL

Source Reagents

Reagent	Description	Type	Expiration	Vendor	Vendor Lot #	Vendor Cat Lot #	Volume Used	Volume Units
Sr-90_00018	Sr-90 Calibration STD		11/29/62				0.50000	mL

Strontium 90

Initial Activity:	44.77423	dpm				
Reference Date:	11/29/2012					
Current Date:	4/23/2014		(or date at which you wish to determine activity)			
Elapsed Time:	510.000	days				
Half Life:	10409.625	days				
Exponential Term:	0.966610707					
Corrected Activity:	43.27925012	dpm	19.49515771	pCi	0.721321	Bq
Activity (Sr/Y-90)	86.55850024	dpm	38.99031542	pCi	1.442642	Bq

Reagent

STD SI_00009

INORGANIC VENTURES™
CERTIFICATE OF ANALYSIS
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tel: 800.669.6799 | 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number (010105).

ACCREDITED Testing Laboratory Certificate 863.01
ACCREDITED Reference Material Producer Certificate 863.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGSI1
Lot Number:	G2-SI03029
Matrix:	tr. HNO3 / tr. HF
Value/Analyte(s):	1 000 µg/mL Silicon
Starting Material:	SiO2
Starting Material Lot#:	1551
Starting Material Purity:	99.9993%

468740
ID: STD SI_00009
Exp:10/01/15 Prpd:CCB Opn:10/08/14
SI 1000PPM

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1,004 ± 5 µg/mL weighted mean

Certified Density: 1.003 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **1,005 ± 3 µg/mL**
ICP Assay NIST SRM 3150 Lot Number: 071204

Assay Method #2 **1,000 ± 5 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.004820	M	Er	<	0.012050	M	Mn	<	0.009640	O	S	<	0.042951	O	V	<	0.001546
O	Al	<	0.005154	M	Eu	<	0.007230	M	Mo	<	0.004820	M	Sb	<	0.001205	O	W	<	0.006872
M	As	<	0.024100	O	Fe		0.000689	n	Na	<		O	Sc	<	0.000344	M	Y	<	0.096401
M	Au	<	0.007230	M	Ga	<	0.002410	M	Nb	<	0.001205	M	Se	<	0.019280	M	Yb	<	0.002410
n	B	<		M	Gd	<	0.002410	M	Nd	<	0.004820	s	Si	<		O	Zn	<	0.000344
M	Ba	<	0.024100	M	Ge	<	0.014460	O	Ni	<	0.003951	M	Sm	<	0.002410	M	Zr	<	0.012050
O	Be	<	0.000344	M	Hf	<	0.004820	n	Os	<		M	Sn		0.000677				
M	Bi	<	0.000964	O	Hg	<	0.018898	O	P	<	0.008590	O	Sr	<	0.000120				
O	Ca		0.003102	M	Ho	<	0.001205	M	Pb	<	0.007230	O	Ta	<	0.010308				
M	Cd	<	0.007230	M	In	<	0.024100	M	Pd	<	0.012050	M	Tb	<	0.000723				
M	Ce	<	0.012050	M	Ir	<	0.012050	M	Pr	<	0.000723	M	Te	<	0.072301				
M	Co	<	0.007230	O	K		0.002757	M	Pt	<	0.004820	M	Th	<	0.002410				
O	Cr	<	0.002577	M	La	<	0.001205	M	Rb	<	0.002410	O	Ti		0.000689				
M	Cs	<	0.000723	O	Li	<	0.000034	M	Re	<	0.002410	M	Tl	<	0.002410				
O	Cu	<	0.001718	M	Lu	<	0.000964	M	Rh	<	0.002410	M	Tm	<	0.000964				
M	Dy	<	0.014460	O	Mg		0.000207	M	Ru	<	0.004820	M	U	<	0.004820				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Keep tightly sealed when not in use. Store and use at 20 ± 4°C. Do not pipette from the container. Do not return removed aliquots to container.

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 28.09 +4 6 Si(OH)x(F)y2-

Chemical Compatibility -Soluble in HCl, HF, H3PO4 H2SO4 and HNO3 as the Si(OH)x(F)y2-. Avoid neutral to basic media. Unstable at ppm levels with metals that would pull F- away (i.e. Do not mix with Alkaline or Rare Earths, or high levels of transition elements unless they are fluorinated. Stable with most inorganic anions with a tendency to hydrolyze forming silicic acid (silicic acid is soluble up to ∼100 ppm in water) in all dilute acids except HF.
Stability - 2-100 ppb levels - stability unknown - (alone or mixed with all other metals) as the Si(OH)x(F)y2-. 1-10,000 ppm single element solutions as the Si(OH)x(F)y2- chemically stable for years in 2-5 % HNO3 / trace HF in a LDPE container.
Si Containing Samples (Preparation and Solution) -Metal (Soluble in 1:1:1 H2O / HF / HNO3); Oxide - SiO2, amorphic (dissolve by heating in 1:1:1 H2O / HF / HNO3); Oxide - quartz (fuse in Pt0 with Na2CO3); Geological Samples(fuse in Pt0with Na2CO3 followed by HCl solution of the fuseate); Organic Matrices containing silicates and non volatile silicon compounds (dry ash at 4500C in Pt0 and dissolve by gently warming with 1:1:1 H2O / HF / H2SO4 or fuse / ash with Na2CO3 and dissolve fuseate with HCl / H2O); Silicone Oils - dimethyl silicones depolymerize to form volatile monomer units when heated (Measure directly in alcoholic KOH / xylene mixture where sample is treated first with the KOH at 60-1000C to "unzip" the Si- O-Si polymeric structure or digest with conc. H2SO4 / H2O2 followed by cooling and dissolution of the dehydrated silica with HF.) Note that the direct analysis of silicone oils in an organic solvent will result in false high results due to high vapor pressure of volatile monomer units like hexamethylcyclotrisiloxane. The KOH forms the K2+Si(CH3)2O= salt which is not volatile at room temperature.

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 28 amu	4000 - 8000 ppt	N/A	N2, 12C16O
ICP-OES 212.412 nm	0.02/0.01 µg/mL	1	Hf, Os, Mo, Ta
ICP-OES 251.611 nm	0.012/0.003 µg/mL	1	Ta, U, Zn, Th
ICP-OES 288.158 nm	0.03/0.004 µg/mL	1	Ta, Ce, Cr, Cd, Th

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

January 24, 2014

11.2 Expiration Date

EXPIRES
1 FEB 2015

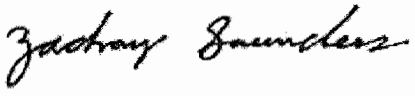
11.3 Period of Validity

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is handled and stored in accordance with instructions given in Sec 7.0 and used prior to the date given in Sec 11.2. This certification is nullified if the CRM/RM is damaged, contaminated, or otherwise modified.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

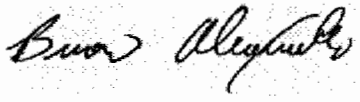
Certificate Prepared By:

Zach Saunders
Product Documentation Technician



Certificate Approved By:

Brian Alexander
PhD., Technical Process Director



Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

Th-229_00018

St. Louis Radiological Standard Reverification Form

Standard ID Number: Th-229_00018 (A)
True Value = 67.229 DPM/L or g
Date Analyzed: 9/2/2014

Radionuclide: Th-229

	Replicates	
#1	65.538	DPM/L or g
#2	64.749	DPM/L or g
#3	62.033	DPM/L or g

Mean = 64.10667

1 sigma = 1.838668 1.96 sigma = 3.603789

True Value minus 5% = 63.86755 (True Value - 5%)
True Value plus 5% = 70.59045 (True Value + 5%)

Accuracy:
Mean value within 5% of Certified (True) Value? **Yes** **(Acceptance Criteria)**

Precision:
1.96 sigma Value Within 10% of Mean Value? **Yes** **(Acceptance Criteria)**

Standard Reverification Acceptable? **Yes**

Note: Criteria for reverification of radiological standards is taken from the DOE QSAS and LANL Statements of Work

Reviewed By/Date: RTM 9/2/2014

SOP Reference: STL-QA-0002, Current Revision

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

960mins.

Aliquot Only

Batch No. : —

Balance ID : —

No.	Sample Number	Aliquot (g / mL)	Crucible ID	Dilution
248 ~~183~~ 1	Ver 1	0.1	RC = 115	
249 ~~185~~ 2	2	1	RC = 116	
250 ~~181~~ 3	3		RC = 117	
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				

Note: If a section below is not used, marked the N/A box and initial & date next to the N/A.
i.e. Mark the N/A box if a tracer is not added to the sample(s) then initial and date next to the N/A

Tracer ☐ N/A

Initials / Date

Isotope : Th-230
Std Sol'n No. : Th-230.00023
Vol (mL) : 0.3
Ref Activity (dpm/mL) :
Act Ref Date :

Samples Spiked and Traced By: SLB 8/27/14 (Initials / Date)

Verification Signature & Date: MBP/SLB 8/27/14 (Initials / Date)

LCS Standard ☐ N/A

Initials / Date

Isotope : Th-229
Std Sol'n ID. : Th-229.00018 BothLCA
Vol (mL) : 0.1
Ref Activity (dpm/mL) : 67.229
Act Ref Date :

SOP's applied in preparing these samples. Mark box to left for all that apply:

☐	ST-RC-0003 Rev.	☐	ST-RC-0040 Rev.	☐	ST-RC-0110 Rev.
☐	ST-RC-0004 Rev.	☐	ST-RC-0041 Rev.	☐	ST-RC-0120 Rev.
☐	ST-RC-0014 Rev.	☐	ST-RC-0050 Rev.	☐	ST-RC-0232 Rev.
☐	ST-RC-0020 Rev.	☐	ST-RC-0090 Rev.	☐	ST-RC-0238 Rev.
☐	ST-RC-0021 Rev.	☐	ST-RC-0100 Rev.	☐	ST-RC-0240 Rev.
				☐	ST-RC-0241 Rev.
				☐	ST-RC-0242 Rev.
				☐	ST-RC-5016 Rev.
				☐	
				☐	

Isotope(s)

αβ ☐	Iso Pu ☐	Tc-99 ☐	Iso Cm ☐
Iso Am ☐	Ra ☐	Iso Th ☑	Pu-241 ☐
KPA ☐	Sr ☐	Iso U ☐	Th-229 ☐
Np ☐	TAR ☐	C-14 ☐	Cl-36 ☐

Count Time	Matrix
Long Count ☐	Soil ☐
Short Count ☐	H_2O ☐

Prepared By : SLB
Date : 8/27/14

Reviewed by:
Date:

\\Slsvr01\RAD\MasterForms\RAD-0045 Rev(3)

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Reagent ID: Th-229_00018

Description:	Th-229 Tracer	Expiration Date:	08/20/2015
No. of Bottles:	2	Laboratory:	TestAmerica St. Louis
Storage Location:	RAD Actinide STDs	Prepared By:	Bernsen, Sarah C
Reagent Volume:	500.000 mL	Solvent:	0.1M HNO3
Creation Date:	08/20/2014	Solvent Lot:	n/a
Container(s):	430571, 430625		
Comment:	500 mL split between bottle A and bottle B.		

Reagent Analyte Information

Analyte	Source ID	Source Exp. Date	Source Conc.	Source Conc. Units	Final Conc.	Final Conc. Units
Th-229	Th-229_00017	08/06/2064	2240.98600	dpm/mL	67.22958	dpm/mL

Source Reagents

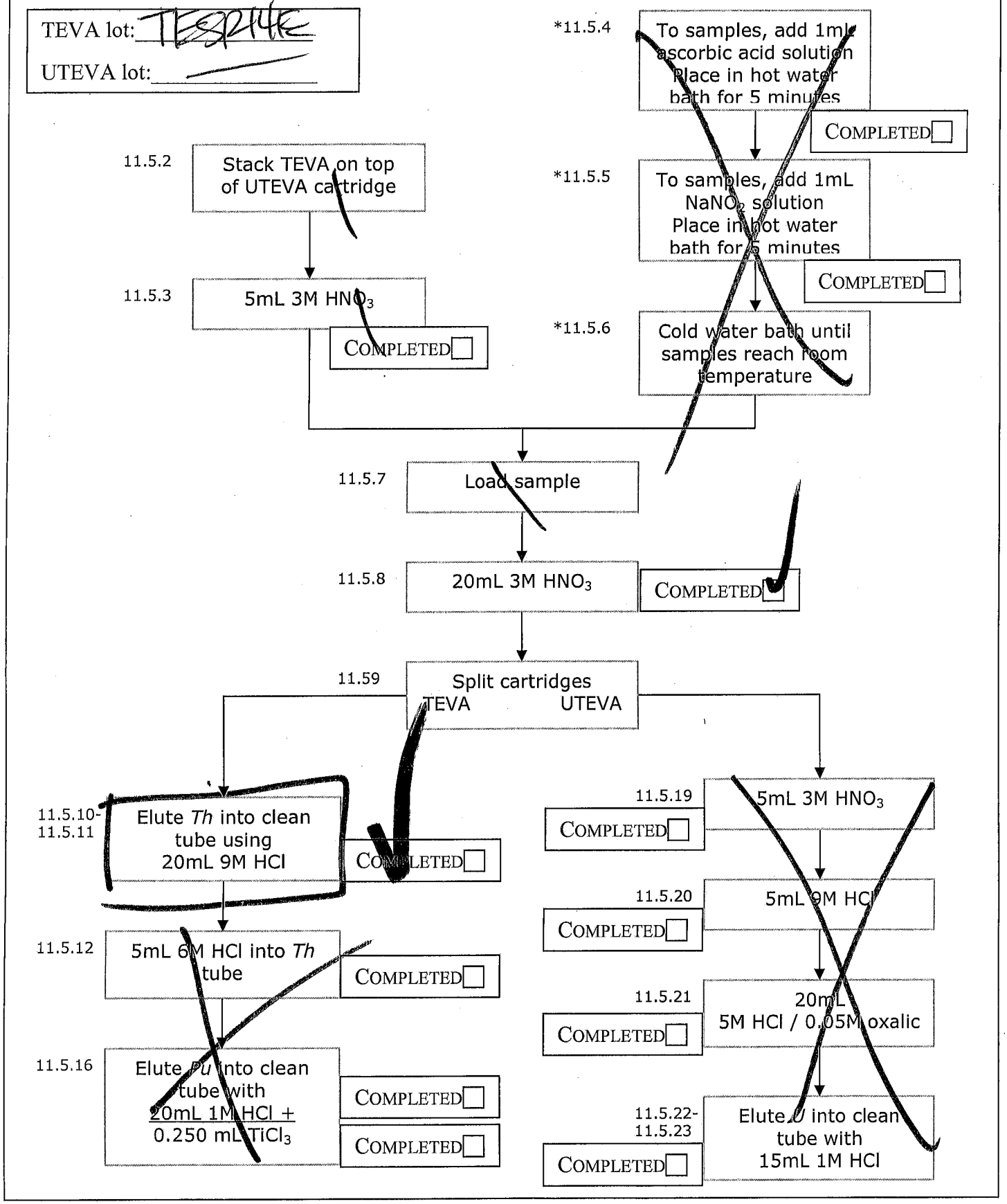
Reagent	Description	Type	Expiration	Vendor	Vendor Lot #	Vendor Cat Lot #	Volume Used	Volume Units
Th-229_00017	Th-229 Parent		08/06/64				15.00000	mL

Sequential Thorium, Plutonium and Uranium via TEVA/UTEVA ST-RC-0242

Batch: ver Th

All rinses should flow at 1 mL/minute (only 3M HNO_3 may be done at 3 mL/minute)

*only necessary when analyzing for *Pu*



Thorium-229

Initial Activity:		67.229	dpm					
Reference Date:		8/6/2014						
Current Date:		9/2/2014		(or date at which you wish to determine activity)				
Elapsed Time:		27	days					
Half Life:		2680935	days	64342440				
Exponential Term:		0.999993019						
Corrected Activity:		67.22853069	dpm	30.28312193	pCi			

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
8:35:28PM 9/2/2014

Sample

Sample Name: Verification 1
SampleType: Sample
:
Sample Collection Date:

Spectrum #1 Analysis #1
Sample Volume : 0.1000mL
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: Th-229_00018(a)
AnalysisID: 620409

Analyst: 60040

Tracer

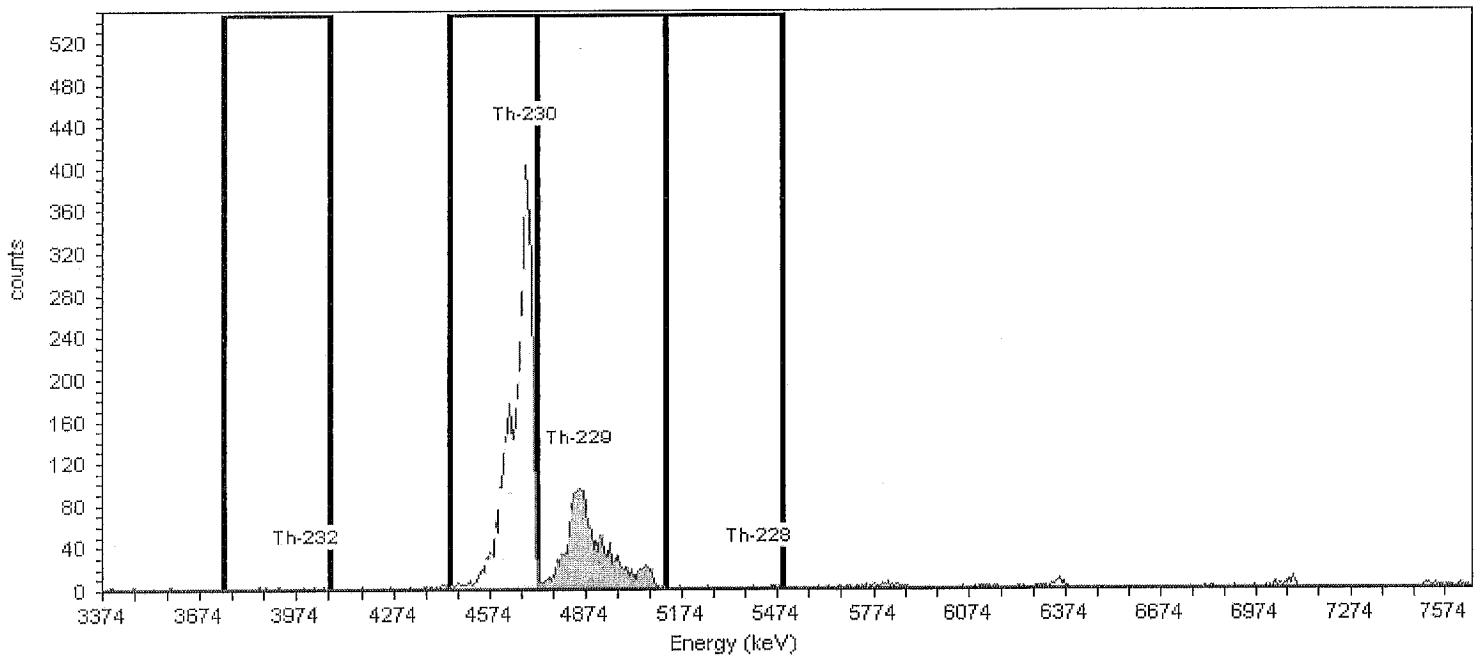
Tracer Name: Th-230_00023
Tracer Activity: 47.94 DPM/mL x (Vol.)0.30 mL = 14.38 DPM
Tracer Ref. Date: 4/11/2011 11:00:10AM

Tracer Nuclide: Th-230
Tracer Recovery: 98.42%

Acquisition

Detector: AV115
Serial Number: 49-037E4
Acquisition Start Date: 9/2/2014 2:33:49AM
Live Time: 960.00 min.
Real Time: 960.02 min.
Background Date: 8/20/2014 11:43:50PM
Background Info: Sample: ICB;AV115; Det: AV115; Spectrum #1; Aug-20-2014 23:43

Calibration Name: IC-9817;AV115-20140507
Calibration Date: 5/7/2014 10:49:29PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 26.26% +/- 0.32% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = Th-230_Tracer
Decay Correction: 9/2/2014 2:32:45AM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Thorium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
Th-232	3999.0	4,010.0	-11.0	3743.0	4072.0	11.4	100.2	7	3.0000	4.00	0.161	DPM/mL
Th-230	4688.0	4,687.5	0.5	4448.3	4724.2	27.6	99.7	3560	2.0000	3558.00	141.553	DPM/mL
Th-229	4848.0	4,845.3	2.7	4724.2	5119.5	80.8	99.8	1624	1.0000	1623.00	65.538	DPM/mL
Th-228	5420.0	5,423.3	-3.3	5119.0	5493.0	.0	99.8	6	3.0000	3.13	0.126	DPM/mL

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
8:35:42PM 9/2/2014

Sample

Sample Name: Verification 2
SampleType: Sample
:
Sample Collection Date:

Spectrum #1 Analysis #1
Sample Volume : 0.1000mL
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: Th-229_00018(a)
AnalysisID: 620383

Analyst: 60040

Tracer

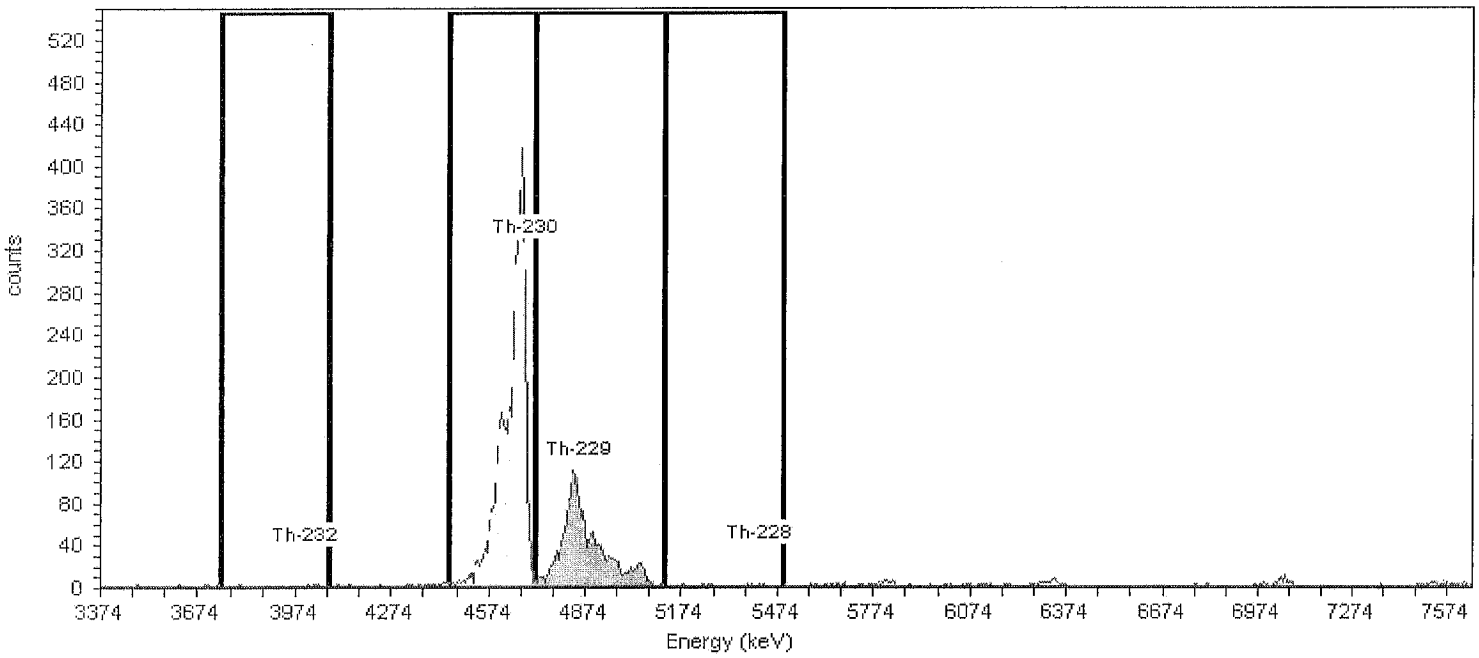
Tracer Name: Th-230_00023
Tracer Activity: 47.94 DPM/mL x (Vol.)0.30 mL = 14.38 DPM
Tracer Ref. Date: 4/11/2011 11:00:10AM

Tracer Nuclide: Th-230
Tracer Recovery: 95.43%

Acquisition

Detector: AV116
Serial Number: 49-034G1
Acquisition Start Date: 9/2/2014 2:33:51AM
Live Time: 960.00 min.
Real Time: 960.02 min.
Background Date: 8/20/2014 11:43:51PM
Background Info: Sample: ICB;AV116; Det: AV116; Spectrum #1; Aug-20-2014 23:43

Calibration Name: IC-9792;AV116-20140430
Calibration Date: 5/1/2014 1:16:57PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 27.04% +/- 0.31% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = Th-230_Tracer
Decay Correction: 9/2/2014 2:32:45AM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Thorium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
Th-232	3999.0	4,010.0	-11.0	3743.0	4072.0	25.7	100.2	6	0.0000	6.00	0.242	DPM/mL
Th-230	4688.0	4,687.5	0.5	4446.0	4717.0	25.1	99.7	3554	1.0000	3552.66	137.251	DPM/mL
Th-229	4848.0	4,845.3	2.7	4717.0	5119.0	80.5	99.8	1602	1.0000	1601.03	64.749	DPM/mL
Th-228	5420.0	5,423.3	-3.3	5119.0	5493.0	.0	99.8	9	3.0000	6.15	0.249	DPM/mL

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
8:36:23PM 9/2/2014

Sample

Sample Name: Verification 3
SampleType: Sample
:
Sample Collection Date:

Spectrum #1 Analysis #1
Sample Volume : 0.1000mL
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: Th-229_00018(a)
AnalysisID: 620410

Analyst: 60040

Tracer

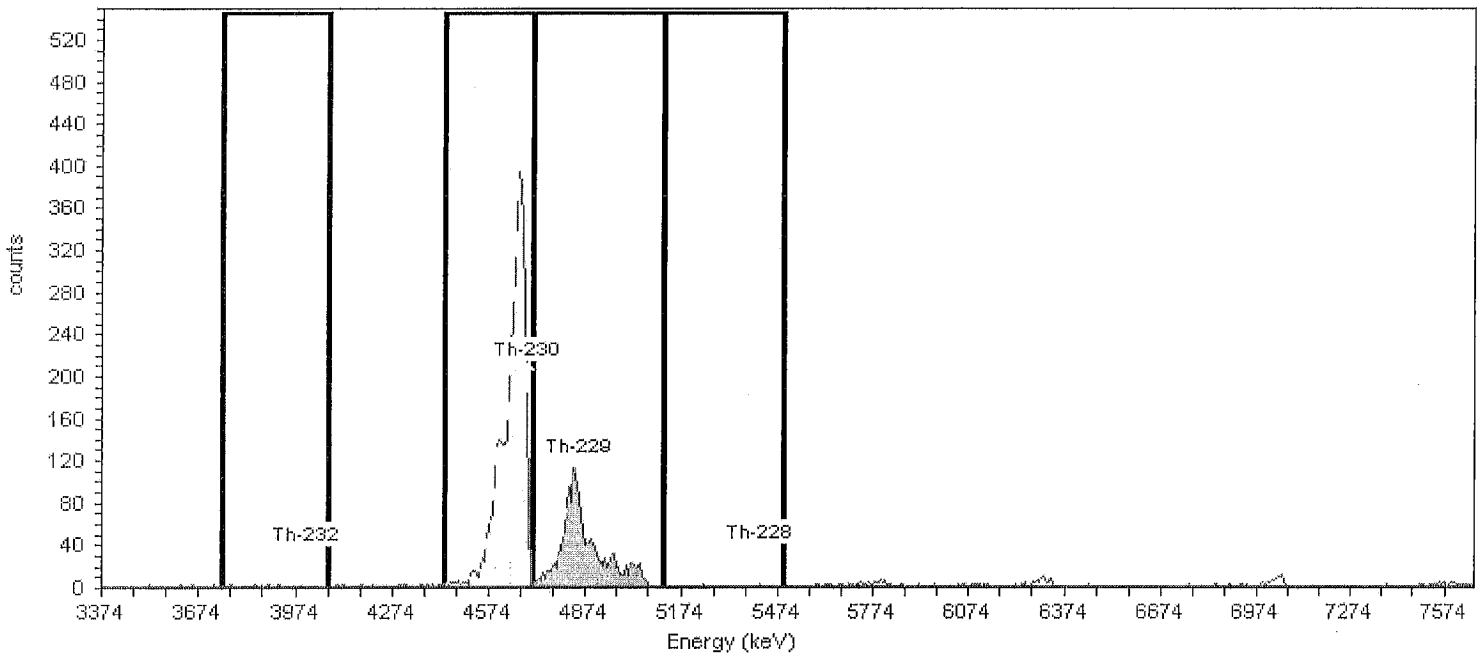
Tracer Name: Th-230_00023
Tracer Activity: 47.94 DPM/mL x (Vol.)0.30 mL = 14.38 DPM
Tracer Ref. Date: 4/11/2011 11:00:10AM

Tracer Nuclide: Th-230
Tracer Recovery: 98.20%

Acquisition

Detector: AV117
Serial Number: 49-037X4
Acquisition Start Date: 9/2/2014 2:33:53AM
Live Time: 960.00 min.
Real Time: 960.02 min.
Background Date: 8/20/2014 11:43:53PM
Background Info: Sample: ICB;AV117; Det: AV117; Spectrum #1; Aug-20-2014 23:43

Calibration Name: IC-9793;AV117-20140430
Calibration Date: 5/1/2014 1:17:04PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 25.86% +/- 0.32% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = Th-230_Tracer
Decay Correction: 9/2/2014 2:32:45AM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Thorium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
Th-232	3999.0	4,010.0	-11.0	3743.0	4072.0	120.6	100.2	5	2.0000	3.00	0.123	DPM/mL
Th-230	4688.0	4,687.5	0.5	4433.4	4709.3	21.9	99.7	3496	1.0000	3495.00	141.226	DPM/mL
Th-229	4848.0	4,845.3	2.7	4709.3	5119.5	70.8	99.8	1510	1.0000	1509.00	62.033	DPM/mL
Th-228	5420.0	5,423.3	-3.3	5119.0	5493.0	44.5	99.8	2	3.0000	-1.00	-0.041	DPM/mL

Reagent

Th-230_00001

Eckert & Ziegler
Analytics

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318
Tel 404·352·8677
Fax 404·352·2837
www.analyticsinc.com

CERTIFICATE OF CALIBRATION
Standard Radionuclide Source

84460-334
5 mL Liquid in Flame Sealed Vial

Customer: Test America/Earth City, MO
P.O. No.: 2414204, Item 1

This standard radionuclide source was prepared gravimetrically from a master solution, calibrated by Eckert & Ziegler Analytics. The master solution was calibrated by liquid scintillation counting. Radionuclide purity and calibration were checked by germanium gamma-ray spectrometry and liquid scintillation counting. The nuclear decay rate and reference date for this source are given below. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 1, February, 1979, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Isotope	Half-Life, Days	Activity (Bq)	Uncertainty*, % Type u_A	u_B	U	Reference Date (12:00 PM EST)
Th-230	2.753E+07	4.016E+03	0.1	0.9	1.8	04/11/2011

***Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

Comments:
Impurities: γ-impurities < 0.1 %, α-impurities < 0.01 %. 5.11451 grams 0.5M HNO3 solution.

Source Prepared by: _____
W. Mao, Radiochemist

QA Approved: _____ Date: 4/11/11
J. D. McCorvey, QA Manager Alternate

ACCREDITED SOURCE CALIBRATION LABORATORY
HEALTH PHYSICS SOCIETY
FOUNDED 1958

Corporate Office
24937 Avenue Tibbitts Valencia, California 91355

Laboratory
1380 Seaboard Industrial Blvd. Atlanta, Georgia, 30318

Reagent

Th-230_00003

Eckert & Ziegler
Analytics

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318
Tel 404·352·8677
Fax 404·352·2837
www.analyticsinc.com

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

84460-334
5 mL Liquid in Flame Sealed Vial

Customer: Test America/Earth City, MO
P.O. No.: 2414204, Item 1

This standard radionuclide source was prepared gravimetrically from a master solution, calibrated by Eckert & Ziegler Analytics. The master solution was calibrated by liquid scintillation counting. Radionuclide purity and calibration were checked by germanium gamma-ray spectrometry and liquid scintillation counting. The nuclear decay rate and reference date for this source are given below. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 1, February, 1979, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

			Uncertainty*, %			
	Half-Life,	Activity	Type			Reference Date
Isotope	Days	(Bq)	u_A	u_B	U	(12:00 PM EST)
Th-230	2.753E+07	4.016E+03	0.1	0.9	1.8	04/11/2011

*Uncertainty: U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

Comments:
Impurities: γ-impurities < 0.1 %, α-impurities < 0.01 %. 5.11451 grams 0.5M HNO3 solution.

Source Prepared by: _____
W. Mao, Radiochemist

QA Approved: _____ Date: 4/11/11
J. D. McCorvey, QA Manager Alternate

ACCREDITED SOURCE CALIBRATION LABORATORY HEALTH PHYSICS SOCIETY

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Reagent ID: Th-230_00003

		Expiration Date:	04/11/2061
Description:	Th-230 Parent	Laboratory:	TestAmerica St. Louis
No. of Bottles:	1	Prepared By:	Hurst, Sarah
Storage Location:	RAD Separations Reagents - 1	Solvent:	1M HNO3
Reagent Volume:	100.000 mL	Solvent Lot:	0
Creation Date:	06/24/2011		
Container(s):	6340		
Comment:			

Reagent Analyte Information

Analyte	Source ID	Source Exp. Date	Source Conc.	Source Conc. Units	Final Conc.	Final Conc. Units
Gross Alpha	Th-230_00001	04/11/2061	785.21700	Bq/g	2397.01383	dpm/mL
Th-230	Th-230_00001	04/11/2061	785.21700	Bq/g	2397.01383	dpm/mL

Source Reagents

Reagent	Description	Type	Expiration	Vendor	Vendor Lot #	Vendor Cat Lot #	Volume Used	Volume Units
Th-230_00001	Th-230 Ampoule	ASTD	04/11/61	Eckert & Ziegler	84460-334		5.08780	g

St. Louis Radiological Standard Reverification Form

Standard ID Number: Th-230_00003 (6340)
True Value = 921.43 pCi/sample or g
Date Analyzed: 2/11/2014

Radionuclide: Th-230 (High mass)

	Replicates	
#1	909.2	pCi/sample or g
#2	919.3	pCi/sample or g
#3	911.7	pCi/sample or g

Mean = 913.4

1 sigma = 5.260228 1.96 sigma = 10.31005

True Value minus 5% = 875.3585 (True Value - 5%)
True Value plus 5% = 967.5015 (True Value + 5%)

Accuracy:
Mean value within 5% of Certified (True) Value? **Yes** **(Acceptance Criteria)**

Precision:
1.96 sigma Value Within 10% of Mean Value? **Yes** **(Acceptance Criteria)**

Standard Reverification Acceptable? **Yes**

Note: Criteria for reverification of radiological standards is taken from the DOE QSAS and LANL Statements of Work

Reviewed By/Date: Jody Watson 2/18/14

SOP Reference: STL-QA-0002, Current Revision

St. Louis Radiological Standard Reverification Form

Standard ID Number: Th-230_00003 (6340)
Radionuclide: Th-230 (Medium mass
True Value = 1100.25 pCi/sample or g
Date Analyzed: 2/11/2014

	Replicates	
#1	1100	pCi/sample or g
#2	1109	pCi/sample or g
#3	1098	pCi/sample or g

Mean = 1102.333

1 sigma = 5.859465 1.96 sigma = 11.48455

True Value minus 5% = 1045.238 (True Value - 5%)
True Value plus 5% = 1155.263 (True Value + 5%)

Accuracy:
Mean value within 5% of Certified (True) Value? **Yes** **(Acceptance Criteria)**

Precision:
1.96 sigma Value Within 10% of Mean Value? **Yes** **(Acceptance Criteria)**

Standard Reverification Acceptable? **Yes**

Note: Criteria for reverification of radiological standards is taken from the DOE QSAS and LANL Statements of Work

Reviewed By/Date: Jody Watson 2/18/14

SOP Reference: STL-QA-0002, Current Revision

St. Louis Radiological Standard Reverification Form

Standard ID Number: Th-230_00003 (6340)
True Value = 1319.88 pCi/sample or g
Date Analyzed: 2/11/2014

Radionuclide: Th-230 (Low mass)

	Replicates	
#1	1320	pCi/sample or g
#2	1304	pCi/sample or g
#3	1306	pCi/sample or g

Mean = 1310

1 sigma = 8.717798 1.96 sigma = 17.08688

True Value minus 5% = 1253.886 (True Value - 5%)
True Value plus 5% = 1385.874 (True Value + 5%)

Accuracy:
Mean value within 5% of Certified (True) Value? **Yes** **(Acceptance Criteria)**

Precision:
1.96 sigma Value Within 10% of Mean Value? **Yes** **(Acceptance Criteria)**

Standard Reverification Acceptable? **Yes**

Note: Criteria for reverification of radiological standards is taken from the DOE QSAS and LANL Statements of Work

Reviewed By/Date: Jody Watson 2/18/14

SOP Reference: STL-QA-0002, Current Revision

Protean Alpha ICV-ACV recoveries from August 2013			
Protean Detector	**Low** pCi/sample	**Medium** pCi/sample	**High** pCi/sample
0	1338	1095	923.3
1	1320	1121	931.5
2	1308	1081	921.6
3	1294	1118	925.7
4	1310	1091	930.4
5	1332	1093	908.8
6	1346	1099	926.5
7	1311	1104	903.6
Average pCi/sample	1319.875	1100.25	921.425

Protean Alpha ICV-ACV recoveries from February 2014			
Protean Detector	**Low** pCi/sample	**Medium** pCi/sample	**High** pCi/sample
0	1320	1100	909.2
1	1304	1109	919.3
2	1306	1098	911.7
Average pCi/sample	1310.00	1102.33	913.40

Standard ID
Thorium-230
Th-230_00003 #6340
Cert # 84460-334 Ref. date 4/11/11

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Analysis Report for Gross Alpha/Beta

Batch: M132736 **Operator:** 63903

Sample ID	WRKNO / Analyte	Aliquot Cs	Cb	Mass XT	Instr ID CPMs	CPMb	CountTime Eff	Ts Activity	Tb UncTot	Dilution UncCnt	Sigma MDA	DLC
ICVABT-6340;A1	NA	1.000E+000sample		0.0220 g	Protean0		2/10/14 22:54	30.00	1000.00	1.00	2.00	
	Gross Alpha	12315	39	0.00	4.105E+002	3.900E-002	0.1401	**1.320E+003**pCi/sample	1.524E+002	2.379E+001	6.777E-001	2.698E-001
	Gross Beta	4342	529	0.00	1.447E+002	5.290E-001	0.4365	**1.488E+002**pCi/sample	1.555E+001	4.533E+000	5.507E-001	3.188E-001
ICVABT-6340;A2	NA	1.000E+000sample		0.0542 g	Protean0		2/11/14 0:01	30.00	1000.00	1.00	2.00	
	Gross Alpha	8755	39	0.00	2.918E+002	3.900E-002	0.1195	**1.100E+003**pCi/sample	1.276E+002	2.352E+001	7.944E-001	3.162E-001
	Gross Beta	3314	529	0.00	1.105E+002	5.290E-001	0.4211	**1.176E+002**pCi/sample	1.246E+001	4.106E+000	5.709E-001	3.304E-001
ICVABT-6340;A3	NA	1.000E+000sample		0.0718 g	Protean0		2/10/14 23:30	30.00	1000.00	1.00	2.00	
	Gross Alpha	6609	39	0.00	2.203E+002	3.900E-002	0.1091	**9.092E+002**pCi/sample	1.060E+002	2.237E+001	8.698E-001	3.462E-001
	Gross Beta	2866	529	0.00	9.553E+001	5.290E-001	0.4135	**1.035E+002**pCi/sample	1.105E+001	3.888E+000	5.813E-001	3.365E-001

Laboratory Control Sample Information

SampID	WRKNO	Analyte	Activity	StdAdded	Recovery %	LCL	UCL	ZFactor

Sample Duplicate Information

Sample ID	Dup Sample ID	Analyte	Sample Activity	Dup Activity	RPD	RER	DER	ZFactor

Matrix Spike Information

SampID	SampMSID	Analyte	Sample Activity	MS Activity	StdAdded	MSRecovery %	ZFactor

Blanks Information

SampID	WRKNO	Analyte	Activity	UncTotal	ZFactor

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Analysis Report for Gross Alpha/Beta

Batch: M132736 **Operator:** 63903

Sample ID	WRKNO	Aliquot		Mass	Instr ID	CountTime		Ts	Tb	Dilution	Sigma	
	Analyte	Cs	Cb	XT	CPMs	CPMb	Eff	Activity	UncTot	UncCnt	MDA	DLC
ICVABT-6340;A1	NA	1.000E+000sample		0.0220 g	Protean1	2/10/14 23:30		30.00	1000.00	1.00	2.00	
	Gross Alpha	12345	58	0.00	4.115E+002	5.800E-002	0.1421	**1.304E+003**pCi/sample	1.505E+002	2.347E+001	7.515E-001	3.242E-001
	Gross Beta	4337	490	0.00	1.446E+002	4.900E-001	0.4378	**1.482E+002**pCi/sample	1.550E+001	4.518E+000	5.320E-001	3.059E-001
ICVABT-6340;A2	NA	1.000E+000sample		0.0542 g	Protean1	2/10/14 22:54		30.00	1000.00	1.00	2.00	
	Gross Alpha	8943	58	0.00	2.981E+002	5.800E-002	0.1211	**1.109E+003**pCi/sample	1.286E+002	2.345E+001	8.822E-001	3.805E-001
	Gross Beta	3334	490	0.00	1.111E+002	4.900E-001	0.4221	**1.181E+002**pCi/sample	1.250E+001	4.108E+000	5.518E-001	3.173E-001
ICVABT-6340;A3	NA	1.000E+000sample		0.0718 g	Protean1	2/11/14 0:01		30.00	1000.00	1.00	2.00	
	Gross Alpha	6776	58	0.00	2.259E+002	5.800E-002	0.1107	**9.193E+002**pCi/sample	1.071E+002	2.234E+001	9.654E-001	4.164E-001
	Gross Beta	2787	490	0.00	9.290E+001	4.900E-001	0.4146	**1.004E+002**pCi/sample	1.074E+001	3.824E+000	5.617E-001	3.230E-001

Laboratory Control Sample Information

SampID	WRKNO	Analyte	Activity	StdAdded	Recovery %	LCL	UCL	ZFactor

Sample Duplicate Information

Sample ID	Dup Sample ID	Analyte	Sample Activity	Dup Activity	RPD	RER	DER	ZFactor

Matrix Spike Information

SampID	SampMSID	Analyte	Sample Activity	MS Activity	StdAdded	MSRecovery %	ZFactor

Blanks Information

SampID	WRKNO	Analyte	Activity	UncTotal	ZFactor

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Analysis Report for Gross Alpha/Beta

Batch: M132736 **Operator:** 63903

Sample ID	WRKNO / Analyte	Aliquot Cs	Aliquot Cb	Mass XT	Instr ID CPMs	CountTime CPMb	CountTime Eff	Ts Activity	Tb UncTot	Dilution UncCnt	Sigma MDA	DLC
ICVABT-6340;A1	NA	1.000E+000sample		0.0220 g	Protean2	2/11/14 0:01		30.00	1000.00	1.00	2.00	
	Gross Alpha	12227	43	0.00	4.076E+002	4.300E-002	0.1406	**1.306E+003**pCi/sample	1.507E+002	2.362E+001	6.946E-001	2.822E-001
	Gross Beta	4402	583	0.00	1.467E+002	5.830E-001	0.4392	**1.499E+002**pCi/sample	1.566E+001	4.536E+000	5.700E-001	3.326E-001
ICVABT-6340;A2	NA	1.000E+000sample		0.0542 g	Protean2	2/10/14 23:30		30.00	1000.00	1.00	2.00	
	Gross Alpha	8755	43	0.00	2.918E+002	4.300E-002	0.1197	**1.098E+003**pCi/sample	1.273E+002	2.347E+001	8.155E-001	3.314E-001
	Gross Beta	3355	583	0.00	1.118E+002	5.830E-001	0.4218	**1.188E+002**pCi/sample	1.258E+001	4.125E+000	5.936E-001	3.464E-001
ICVABT-6340;A3	NA	1.000E+000sample		0.0718 g	Protean2	2/10/14 22:54		30.00	1000.00	1.00	2.00	
	Gross Alpha	6627	43	0.00	2.209E+002	4.300E-002	0.1091	**9.117E+002**pCi/sample	1.063E+002	2.240E+001	8.947E-001	3.636E-001
	Gross Beta	2857	583	0.00	9.523E+001	5.830E-001	0.4134	**1.031E+002**pCi/sample	1.102E+001	3.883E+000	6.057E-001	3.534E-001

Laboratory Control Sample Information

SampID	WRKNO	Analyte	Activity	StdAdded	Recovery %	LCL	UCL	ZFactor

Sample Duplicate Information

Sample ID	Dup Sample ID	Analyte	Sample Activity	Dup Activity	RPD	RER	DER	ZFactor

Matrix Spike Information

SampID	SampMSID	Analyte	Sample Activity	MS Activity	StdAdded	MSRecovery %	ZFactor

Blanks Information

SampID	WRKNO	Analyte	Activity	UncTotal	ZFactor

Reagent

Th-230_00015

Eckert & Ziegler
Analytics

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318
Tel 404•352•8677
Fax 404•352•2837
www.analyticsinc.com

CERTIFICATE OF CALIBRATION
Standard Radionuclide Source

92523
Th-230 5 mL Liquid in Flame Sealed Vial

Customer: TestAmerica St. Louis
P.O. No.: 2502650, Item 2 Product Code: 8230-5FSA-4kBq

This standard radionuclide source was prepared gravimetrically from a master solution, calibrated by Eckert & Ziegler Analytics. The master solution was calibrated by liquid scintillation counting. Radionuclide calibration and purity were checked by germanium gamma-ray spectrometry, liquid scintillation counting, and/or alpha spectrometry, as applicable. The nuclear decay rate and reference date for this source are given below. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 2, July 2007, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Isotope	Half-Life, Days	Activity (Bq)	Uncertainty* , % Type u_A	u_B	U	Reference Date (12:00 PM EST)
Th-230	2.753E+07	3.979E+03	0.1	0.9	1.8	11/29/2012

***Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

Comments:
Impurities: α-impurities 1.5915 Bq; γ-impurities (other than decay products)<0.1%.
5.07636 g 0.5M HNO3 solution. Carrier free.

Source Prepared by: M. I. Taskaeva, Radiochemist

QA Approved: J.D. McCorvey, Counting Room Manager Date: 27 Nov 12

51464
ID Th-230_00015
Th-230 Ampoule

RAD12-0040
Th-230 Ampoule
hursts
None
Prep/Opened: 11/28/2012
Exp(1): 11/28/2062
Exp(2): 11/28/2062

ACCREDITED SOURCE CALIBRATION LABORATORY HEALTH PHYSICS SOCIETY FOUNDED 1956

Single Isotope Certificate Rev 3, 23 August 2012

Reagent

Th-230_00016

Eckert & Ziegler
Analytics

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318
Tel 404•352•8677
Fax 404•352•2837
www.analyticsinc.com

CERTIFICATE OF CALIBRATION
Standard Radionuclide Source

92523

Th-230 5 mL Liquid in Flame Sealed Vial

Customer: TestAmerica St. Louis
P.O. No.: 2502650, Item 2 Product Code: 8230-5FSA-4kBq

This standard radionuclide source was prepared gravimetrically from a master solution, calibrated by Eckert & Ziegler Analytics. The master solution was calibrated by liquid scintillation counting. Radionuclide calibration and purity were checked by germanium gamma-ray spectrometry, liquid scintillation counting, and/or alpha spectrometry, as applicable. The nuclear decay rate and reference date for this source are given below. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 2, July 2007, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Isotope	Half-Life, Days	Activity (Bq)	Uncertainty*, % Type u_A	u_B	U	Reference Date (12:00 PM EST)
Th-230	2.753E+07	3.979E+03	0.1	0.9	1.8	11/29/2012

*Uncertainty: U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

Comments:
Impurities: α-impurities 1.5915 Bq; γ-impurities (other than decay products)<0.1%.
5.07636 g 0.5M HNO3 solution. Carrier free.

Source Prepared by: M. I. Taskaeva, Radiochemist

QA Approved: J.D. McCorvey, Counting Room Manager Date: 27 Nov 12

51464
ID Th-230_00015
Th-230 Ampoule

RAD12-0040
Th-230 Ampoule
hursts
None
Prep/Opened: 11/28/2012
Exp(1): 11/28/2062
Exp(2): 11/28/2062

ACCREDITED SOURCE CALIBRATION LABORATORY — HEALTH PHYSICS SOCIETY — FOUNDED 1958

Corporate Office
24937 Avenue Tibbitts Valencia, California 91355

Laboratory
1380 Seaboard Industrial Blvd. Atlanta, Georgia, 30318

TestAmerica St. Louis

Standards Preparation Logbook Record

Nov-28-2012

Logbook: \\Qstlmo01\Stdslog\RAD_STD.std

RAD12-0040, Th-230 Ampoule Th-230_00015 # 51464 Analyst: hursts

Vendor: Analytics Lot No.: 92523
Solvent: None
Date Prep./Opened: 11-28-2012 Date Consumed: 11-28-2012
Date Expires(1): 11-28-2062 (50 Years)
Date Expires(2): 11-28-2062 (50 Years)
Cert: 92523 Activity: 3979Bq Reference Date: 11/29/12 Mass: 5.07636

Component	Initial Conc (dpm/g)	Final Conc (dpm/g)
Th-230	47,030	47,030

RAD12-0041, Th-230 Calibration Standard Th-230_00016 # 51465 Analyst: hursts

Solvent: 0.5M HNO3 Volume (ml): 100.00
Date Prep./Opened: 11-28-2012
Date Expires(1): 11-29-2062 (50 Years)
Date Expires(2): 11-29-2062 (50 Years)

Parent Std No.: RAD12-0040, Th-230 Ampoule Aliquot Amount (g): 5.0489
Parent Date Expires(1): 11-28-2062 Parent Date Expires(2): 11-28-2062

Component	Initial Conc (dpm/g)	Final Conc (dpm/mL)
Th-230	47,030	2,374.5

Reviewed By: SH

St. Louis Radiological Standard Reverification Form

Standard ID Number: Rad12-0041
True Value = 1069.59 pCi/mL
Date Analyzed: 11/30/2012

Radionuclide: Th-230 Gross Alpha

	Replicates	
#1	1071	pCi/mL
#2	1027	pCi/mL
#3	1085	pCi/mL

Mean = 1061

1 sigma = 30.26549 1.96 sigma = 59.32036

True Value minus 5% = 1016.111 (True Value - 5%)
True Value plus 5% = 1123.07 (True Value + 5%)

Accuracy:
Mean value within 5% of Certified (True) Value? Yes **(Acceptance Criteria)**

Precision:
1.96 sigma Value Within 10% of Mean Value? Yes **(Acceptance Criteria)**

Standard Reverification Acceptable? Yes

Note: Criteria for reverification of radiological standards is taken from the DOE QSAS and LANL Statements of Work

Reviewed By/Date: JL 11/30/12

SOP Reference: STL-QA-0002, Current Revision

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Analysis Report for Gross Alpha/Beta

Batch: M122628 **Operator:** 63903

Sample ID	WRKNO	*Aliquot*		*Mass*	*Instr ID*	*CountTime*		*Ts*	*Tb*	*Dilution*	*Sigma*	
	Analyte	Cs	Cb	XT	CPMs	CPMb	Eff	Activity	UncTot	UncCnt	MDA	DLC
verification 1a	NA	*1.000E+000mL*		*0.0546 g*	*Purple16*	*11/30/12 13:03*		*8.00*	*1000.00*	*1.00*	*1.00*	
	Gross Alpha	2528	175	0.00	3.160E+002	1.750E-001	0.1328	**1.071E+006**pCi/L	6.469E+004	2.132E+004	2.807E+003	1.167E+003
	Gross Beta	792	485	0.00	9.900E+001	4.850E-001	0.4280	**1.037E+005**pCi/L	6.370E+003	3.702E+003	1.212E+003	6.028E+002
verification 2a	NA	*1.000E+000mL*		*0.0536 g*	*Purple17*	*11/30/12 13:03*		*8.00*	*1000.00*	*1.00*	*1.00*	
	Gross Alpha	2364	87	0.00	2.955E+002	8.700E-002	0.1295	**1.027E+006**pCi/L	6.225E+004	2.113E+004	2.376E+003	8.436E+002
	Gross Beta	764	362	0.00	9.550E+001	3.620E-001	0.4353	**9.846E+004**pCi/L	6.084E+003	3.576E+003	1.078E+003	5.121E+002
verification 3a	NA	*1.000E+000mL*		*0.0531 g*	*Purple18*	*11/30/12 13:04*		*8.00*	*1000.00*	*1.00*	*1.00*	
	Gross Alpha	2521	62	0.00	3.151E+002	6.200E-002	0.1308	**1.085E+006**pCi/L	6.551E+004	2.161E+004	2.168E+003	7.052E+002
	Gross Beta	788	395	0.00	9.850E+001	3.950E-001	0.4295	**1.029E+005**pCi/L	6.325E+003	3.680E+003	1.125E+003	5.421E+002

Laboratory Control Sample Information

SampID	WRKNO	Analyte	Activity	StdAdded	Recovery %	LCL	UCL	ZFactor

Sample Duplicate Information

Sample ID	Dup Sample ID	Analyte	Sample Activity	Dup Activity	RPD	RER	DER	ZFactor

Matrix Spike Information

SampID	SampMSID	Analyte	Sample Activity	MS Activity	StdAdded	MSRecovery %	ZFactor

Blanks Information

SampID	WRKNO	Analyte	Activity	UncTotal	ZFactor

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Prep Report for Gross Alpha/Beta

Batch: M122628 **Prep Analyst:** 250

SampID	WRKNO	Aliquot	Gross	Tare	Mass	Dilution
verification 1a	NA	6.500E-001 mL	8.6982 g	8.6436 g	0.0546 g	1.00
		Orange 5	protean 14		16	
verification 2a	NA	6.500E-001 mL	8.6698 g	8.6162 g	0.0536 g	1.00
		7	15		17	
verification 3a	NA	6.500E-001 mL	8.6466 g	8.5935 g	0.0531 g	1.00
		8			18	

Spike Information

Sample ID	Standard ID	Analyte	Std Conc	Aliquot	Ref Date	StdAdded
	Rad12-0041	Th-230	2374.5 dpm/mL	1.00 mL	11-29-12	

MS — Spiked By

LM per MS — Spike Verified By

11-28-12 — Spike Date

Standard Operating Procedures

SOPNumber	Title	Revision
☐		

Reviewed By — 11/30/12 Review Date

MS — Analyst/Relenquished By — 11-28-12 Release Date — Received By — 11/28/12 Receipt Date

11234333897/MS/11-28-12

Balance ID / Initials / Date

Reagent

Th-230_00019

TestAmerica St. Louis

Standards Preparation Logbook Record

Aug-13-2013

Logbook: \\Qstlmo01\Stdslog\RAD_STD.std

RAD13-0028, Th-230 Ampoule — Analyst: marrss

Vendor: Analytics Lot No.: 92776
Solvent: None
Date Prep./Opened: 08-13-2013
Date Expires(1): 08-08-2063 (50 Years)
Date Expires(2): 08-08-2063 (50 Years)
Activity: 3.728 E+03 Bq, Ref date: 08/08/2013, Solution mass: 5.09261g, Source ID: 92776

Component	Initial Conc (dpm/g)	Final Conc (dpm/g)
Th-230	43,922	43,922

Th-230-00019 #181198

RAD13-0029, Th-230 Parent — Analyst: marrss

Solvent: ~~None~~ 1M HNO3 SUB 8/13/13 Volume (ml): 100.00
Date Prep./Opened: 08-13-2013
Date Expires(1): 08-08-2063 (50 Years)
Date Expires(2): 08-08-2063 (50 Years)

Parent Std No.: RAD13-0028, Th-230 Ampoule Aliquot Amount (g): 5.0731
Parent Date Expires(1): 08-08-2063 Parent Date Expires(2): 08-08-2063

Component	Initial Conc (dpm/g)	Final Conc (dpm/mL)
Th-230	43,922	2,228.2

Reviewed By: SUB

Page 1 of 1

Th-230 Parent

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Reagent ID: Th-230_00019

		Expiration Date:	08/08/2063
Description:	Th-230 Parent	Laboratory:	TestAmerica St. Louis
No. of Bottles:	1	Prepared By:	Bernsen, Sarah C
Storage Location:	RAD Actinide STDs	Solvent:	1M HNO3
Reagent Volume:	100.000 mL	Solvent Lot:	n/a
Creation Date:	08/13/2013		
Container(s):	181198		
Comment:			

Reagent Analyte Information

Analyte	Source ID	Source Expiration Date	Source Conc.	Source Conc. Units	Final Conc.	Final Conc. Units
Th-230	Th-230_00018	08/08/2063	43922.46	dpm/g	2228.23072	dpm/mL

Source Reagents

Reagent	Description	Type	Expiration	Vendor	Vendor Lot #	Vendor Cat Lot #	Volume Used	Volume Units
Th-230_00018	Th-230 Ampoule	ASTD	08/08/63	Eckert & Ziegler	92776		5.07310	mL

Eckert & Ziegler
Analytics

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318
Tel 404•352•8677
Fax 404•352•2837
www.analyticsinc.com

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

92776

Th-230 5 mL Liquid in Flame Sealed Vial

Customer: TestAmerica
P.O. No.: 2532686, Item 1 Product Code: 8230-5FSA-4kBq

This standard radionuclide source was prepared gravimetrically from a master solution, calibrated by Eckert & Ziegler Analytics. The master solution was calibrated by liquid scintillation counting. Radionuclide calibration and purity were checked by germanium gamma-ray spectrometry, liquid scintillation counting, and/or alpha spectrometry, as applicable. The nuclear decay rate and reference date for this source are given below. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 2, July 2007, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Isotope	Half-Life, Days	Activity (Bq)	Uncertainty* , % Type u_A	u_B	U	Reference Date (12:00 PM EST)
Th-230	2.753E+07	3.728E+03	0.1	0.9	1.8	08/08/2013

***Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

Comments:
Impurities: α-impurities 0.04%; γ-impurities (other than decay products)<0.1%.
5.09261 g 0.5M HNO3 solution. Carrier free.

Source Prepared by: R. Ormsby
R. Ormsby, Radiochemist

QA Approved:
J.D. McCorvey, Counting Room Manager

Date: 6AUG13

RAD13-0029
Th-230 Parent
marrss
None
Prep/Opened: 8/13/2013
Exp(1): 8/8/2063
Exp(2): 8/8/2063

181198
ID: Th-230_00019
Exp: 08/08/63 Prpd: SH Cal. 08/13/13
Th-230 Parent

ACCREDITED SOURCE CALIBRATION LABORATORY HEALTH PHYSICS SOCIETY FOUNDED 1956

Single Isotope Certificate Rev 3, 23 August 2012

Corporate Office
24937 Avenue Tibbitts Valencia, California 91355

Laboratory
1380 Seaboard Industrial Blvd. Atlanta, Georgia, 30318

Reagent

Th-230_00024

455587
ID: Th-230_00024
Exp: 09/25/15 Prpd: SCB Crt: 09/22/14
Th-230 Gross Alpha Spike

St. Louis Radiological Standard Reverification Form

Standard ID Number: Th-230_00024
True Value = 22.282 DPM/L or g
Date Analyzed: 9/25/2014

Radionuclide: Th-230

	Replicates	
#1	22.16	DPM/L or g
#2	22.8	DPM/L or g
#3	24.12	DPM/L or g

Mean = 23.02667

1 sigma = 0.999467 1.96 sigma = 1.958954

True Value minus 5% = 21.1679 (True Value - 5%)
True Value plus 5% = 23.3961 (True Value + 5%)

Accuracy:
Mean value within 5% of Certified (True) Value? Yes **(Acceptance Criteria)**

Precision:
1.96 sigma Value Within 10% of Mean Value? Yes **(Acceptance Criteria)**

Standard Reverification Acceptable? Yes

Note: Criteria for reverification of radiological standards is taken from the DOE QSAS and LANL Statements of Work

Reviewed By/Date: RTM 9/30/2014

SOP Reference: STL-QA-0002, Current Revision

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:28:07AM 9/30/2014

Sample

Sample Name: Verification1 Type: Sample
Spectrum #2 Analysis #1
:
Sample Collection Date:
Comment:

Sample Volume : 0.30 Sample Units: mL
First Stage Dilution: N/A
Aliquot: N/A Aliquot Fraction: N/A
Dilution 2: N/A
Lab Preparation:

Batch

Batch Name: Th-230_00024
:
Description:

Client Name: Undefined
Client Contact:
Analyst: 60040

Tracer

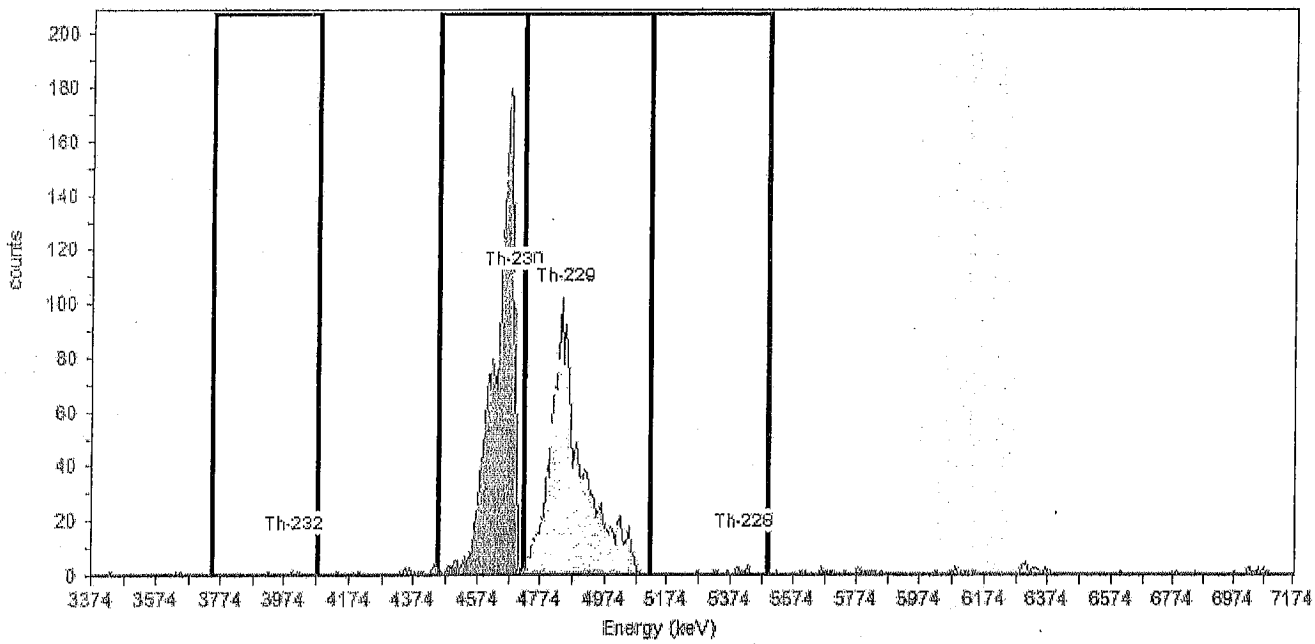
Tracer Name: Th-229_00018
Tracer Activity: 67.23 DPM / mL x (Vol.) 0.10 mL = 6.72 DPM
Tracer Ref. Date: 8/6/2014 4:36:53PM

Tracer Nuclide: Th-229
Tracer Recovery: 88.98%

Acquisition

Detector: AV247 SN: 51-027F3
Acquisition Start Date: 9/25/2014 8:58:54PM
Live Time: 960.00 min.
Real Time: 960.00 min.
Background Date: 9/14/2014 7:35:50PM
Bkgd Info: Sample: ICB;AV247; Det: AV247; Spectrum #1; 9/14/2014 7:35:50 PM

Energy Calibration: IC-8875;AV247-20140701
Efficiency Calibration:IC-8875;AV247-20140701
Calibration Date: 7/1/2014 5:29:01PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 26.06% +/- 0.36% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = Th2007_ROI
Decay Correction:9/23/2014 7:22:45PM
MDA Constants: Kα = 1.64 , Kβ = 1.64

Nuclide Library: Thorium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
Th-232	3999.0	4,010.0	-11.0	3743.0	4072.0	117.3	100.2	3	3.0000	0.00	0.000E+000	DPM/mL
Th-230	4688.0	4,687.5	0.5	4446.0	4717.0	23.3	99.7	1606	0.0000	1605.92	2.412E+001	DPM/mL
Th-229	4848.0	4,845.3	2.7	4717.0	5119.0	81.6	99.6	1492	1.0000	1491.00	1.994E+001	DPM/mL
Th-228	5420.0	5,423.3	-3.3	5119.0	5493.0	52.8	99.8	12	6.9134	5.09	7.652E-002	DPM/mL

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:28:13AM 9/30/2014

Sample

Sample Name: Verification2 Type: Sample
Spectrum #2 Analysis #1
:
Sample Collection Date:
Comment:

Sample Volume : 0.30 Sample Units: mL
First Stage Dilution: N/A
Aliquot: N/A Aliquot Fraction: N/A
Dilution 2: N/A
Lab Preparation:

Batch

Batch Name: Th-230_00024
:
Description:

Client Name: Undefined
Client Contact:
Analyst: 60040

Tracer

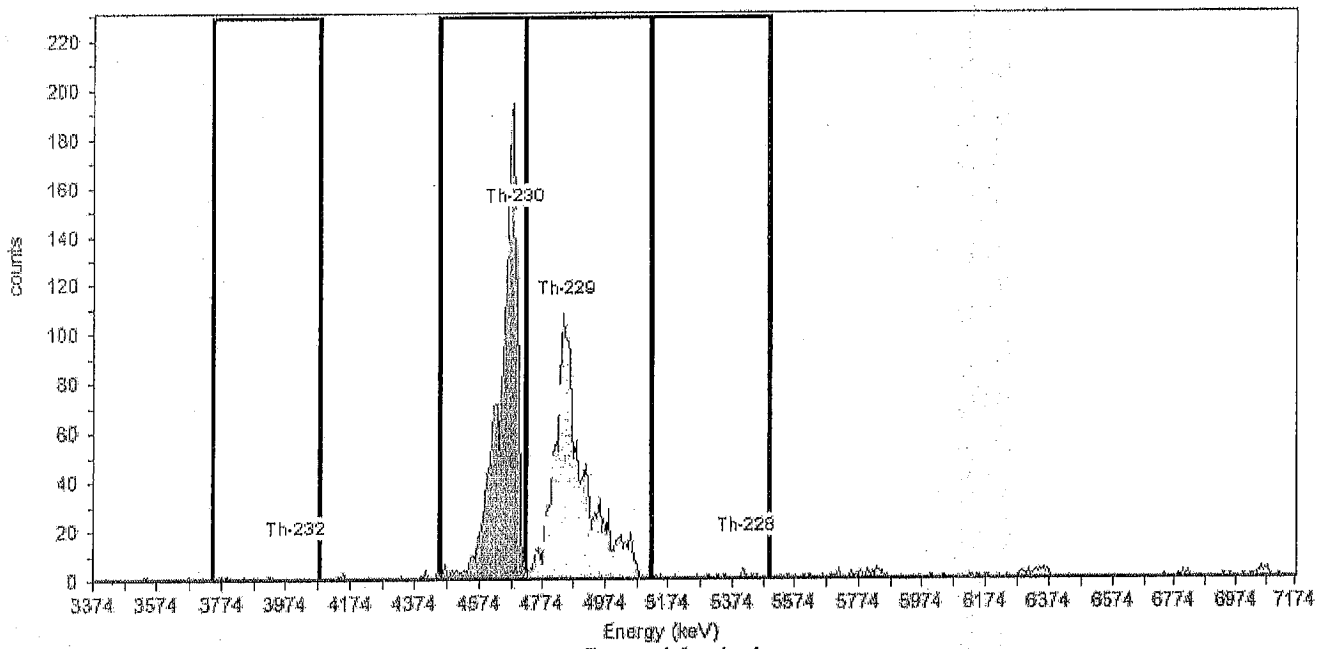
Tracer Name: Th-229_00018
Tracer Activity: 67.23 DPM / mL x (Vol.) 0.10 mL = 6.72 DPM
Tracer Ref. Date: 8/6/2014 4:36:53PM

Tracer Nuclide: Th-229
Tracer Recovery: 91.61%

Acquisition

Detector: AV248 SN: 51-005P4
Acquisition Start Date: 9/25/2014 8:58:54PM
Live Time: 960.00 min.
Real Time: 960.01 min.
Background Date: 9/14/2014 7:35:50PM
Bkgd Info: Sample: ICB;AV248; Det: AV248; Spectrum #1; 9/14/2014 7:35:50 PM

Energy Calibration: IC-8876;AV248-20140701
Efficiency Calibration:IC-8876;AV248-20140701
Calibration Date: 7/1/2014 5:29:05PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 25.83% +/- 0.30% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = Th2007_ROI
Decay Correction:9/23/2014 7:22:45PM
MDA Constants: Kα = 1.64 , Kβ = 1.64

Nuclide Library: Thorium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
Th-232	3999.0	4,010.0	-11.0	3743.0	4072.0	54.9	100.2	4	0.0000	4.43	6.480E-002	DPM/mL
Th-230	4688.0	4,687.5	0.5	4446.0	4717.0	27.0	99.7	1551	2.0000	1548.94	2.280E+001	DPM/mL
Th-229	4848.0	4,845.3	2.7	4717.0	5119.0	79.2	99.6	1522	0.0639	1521.87	2.063E+001	DPM/mL
Th-228	5420.0	5,423.3	-3.3	5119.0	5493.0	57.3	99.8	13	18.0639	-5.06	-7.463E-002	DPM/mL

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:28:19AM 9/30/2014

Sample

Sample Name: Verification3 Type: Sample
Spectrum #2 Analysis #1
:
Sample Collection Date:
Comment:

Sample Volume : 0.30 Sample Units: mL
First Stage Dilution: N/A
Aliquot: N/A Aliquot Fraction: N/A
Dilution 2: N/A
Lab Preparation:

Batch

Batch Name: Th-230_00024
:
Description:

Client Name: Undefined
Client Contact:
Analyst: 60040

Tracer

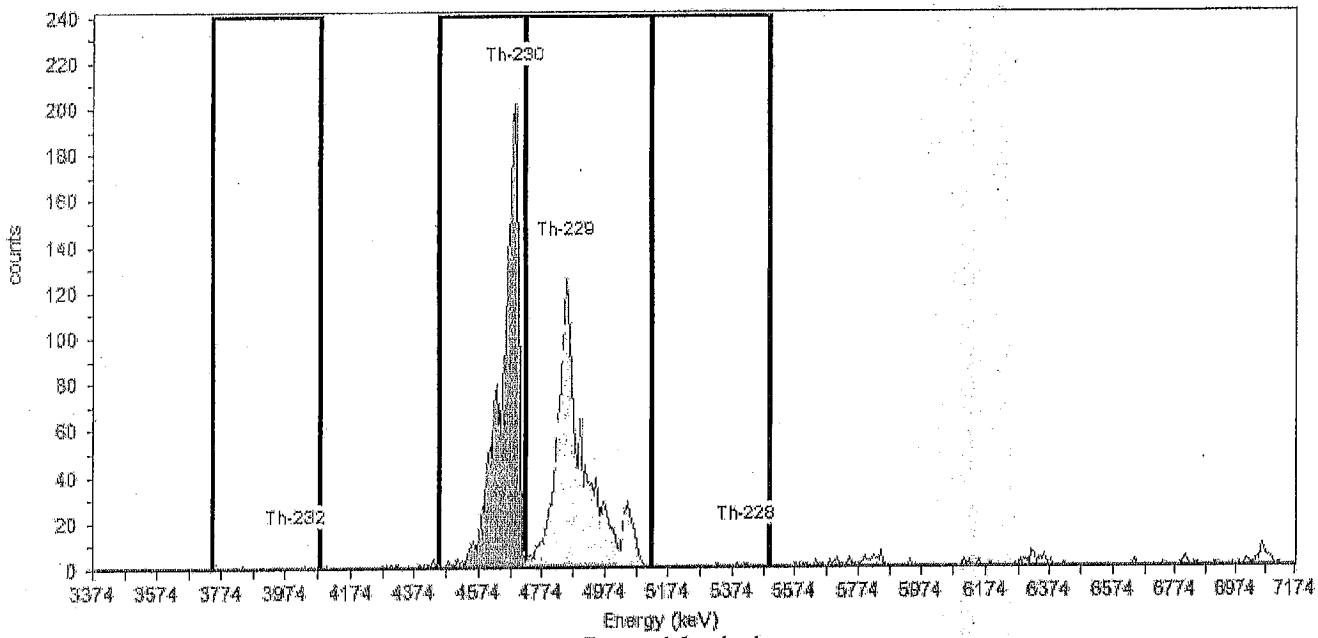
Tracer Name: Th-229_00018
Tracer Activity: 67.23 DPM / mL x (Vol.) 0.10 mL = 6.72 DPM
Tracer Ref. Date: 8/6/2014 4:36:53PM

Tracer Nuclide: Th-229
Tracer Recovery: 95.42%

Acquisition

Detector: AV250 SN: 51-027F2
Acquisition Start Date: 9/25/2014 8:58:54PM
Live Time: 960.00 min.
Real Time: 960.01 min.
Background Date: 9/14/2014 7:35:51PM
Bkgd Info: Sample: ICB;AV250; Det: AV250; Spectrum #1; 9/14/2014 7:35:51 PM

Energy Calibration: IC-9520;AV250-20140701
Efficiency Calibration:IC-9520;AV250-20140701
Calibration Date: 7/1/2014 5:29:13PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 26.40% +/- 0.36% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = Th2007_ROI
Decay Correction:9/23/2014 7:22:45PM
MDA Constants: Kα = 1.64 , Kβ = 1.64

Nuclide Library: Thorium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
Th-232	3999.0	4,010.0	-11.0	3743.0	4072.0	9.7	100.2	2	0.0000	2.00	2.751E-002	DPM/mL
Th-230	4688.0	4,687.5	0.5	4446.0	4717.0	31.9	99.7	1603	0.0000	1602.72	2.216E+001	DPM/mL
Th-229	4848.0	4,845.3	2.7	4717.0	5119.0	68.4	99.6	1621	1.0000	1620.03	2.138E+001	DPM/mL
Th-228	5420.0	5,423.3	-3.3	5119.0	5493.0	50.4	99.8	4	13.0000	-9.00	-1.246E-001	DPM/mL

Gross Alpha (Th-230) verification

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Actinide Prep ✓

Batch No.: —

Balance ID: —

960min

No.	Sample Number	Aliquot (g / mL)	Crucible ID	Dilution
192 ✗	verification-1	0.3	RC-247	
195 2	2	1	RC-248	
196 ✗	3	1	RC-250	
4			5% Mean Failed	
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				

Note: If a section below is not used, marked the N/A box and initial & date next to the N/A. i.e. Mark the N/A box if a tracer is not added to the sample(s) then initial and date next to the N/A

Tracer ☐ N/A

Initials / Date

Isotope: Th-229
Std Sol'n No.: Th-229_00018
Vol (mL): 0.1
Ref Activity (dpm/mL): 67.22958
Act Ref Date: 08-06-14

Samples Spiked and Traced By: SMD 9-22-14 (Initials / Date)

Verification Signature & Date: MB 9-22-14 (Initials / Date)

LCS Standard ☐ N/A

Initials / Date

Isotope: Th-230
Std Sol'n ID.: Th-230_00024
Vol (mL): 0.3
Ref Activity (dpm/mL): 22.282
Act Ref Date: 08-08-13

SOP's applied in preparing these samples. Mark box to left for all that apply:

☐	ST-RC-0003 Rev.	☐	ST-RC-0040 Rev.	☐	ST-RC-0110 Rev.
☐	ST-RC-0004 Rev.	☐	ST-RC-0041 Rev.	☐	ST-RC-0120 Rev.
☐	ST-RC-0014 Rev.	☐	ST-RC-0050 Rev.	☐	ST-RC-0232 Rev.
☐	ST-RC-0020 Rev.	☐	ST-RC-0090 Rev.	☐	ST-RC-0238 Rev.
☐	ST-RC-0021 Rev.	☑	ST-RC-0100 Rev.	☐	ST-RC-0240 Rev.
				☐	ST-RC-0241 Rev.
				☑	ST-RC-0242 Rev.
				☐	ST-RC-5016 Rev.
				☐	
				☐	

Isotope(s)

αβ ☐	Iso Pu ☐	Tc-99 ☐	Iso Cm ☐
Iso Am ☐	Ra ☐	Iso Th ☑	Pu-241 ☐
KPA ☐	Sr ☐	Iso U ☐	Th-229 ☐
Np ☐	TAR ☐	C-14 ☐	Cl-36 ☐

Count Time	Matrix
Long Count ☐	Soil ☐
Short Count ☐	H_2O ☐

Prepared By: SMB
Date: 9-22-14
SMB 9-22-14

Page 1

Reviewed by: _____
Date: _____

\\Slsvr01\RAD\MasterForms\RAD-0045 Rev(3)

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Th - 230 _ 00024

Reagent ID: Th-230_00024

Description:	Th-230 Gross Alpha Spike	Expiration Date:	02/06/2015
No. of Bottles:	1	Laboratory:	TestAmerica St. Louis
Storage Location:	RAD Alpha/Beta STDs	Prepared By:	Bernsen, Sarah C
Reagent Volume:	250.000 mL	Solvent:	1M HNO3
Creation Date:	09/22/2014	Solvent Lot:	0
Container(s):	455587		
Comment:			

Reagent Analyte Information

Analyte	Source ID	Source Exp. Date	Source Conc.	Source Conc. Units	Final Conc.	Final Conc. Units
Gross Alpha	Th-230_00019	08/08/2063	2228.23100	dpm/mL	22.28231	dpm/mL
Th-230	Th-230_00019	08/08/2063	2228.23100	dpm/mL	22.28231	dpm/mL

Source Reagents

Reagent	Description	Type	Expiration	Vendor	Vendor Lot #	Vendor Cat Lot #	Volume Used	Volume Units
Th-230_00019	Th-230 Parent		08/08/63				2.50000	mL

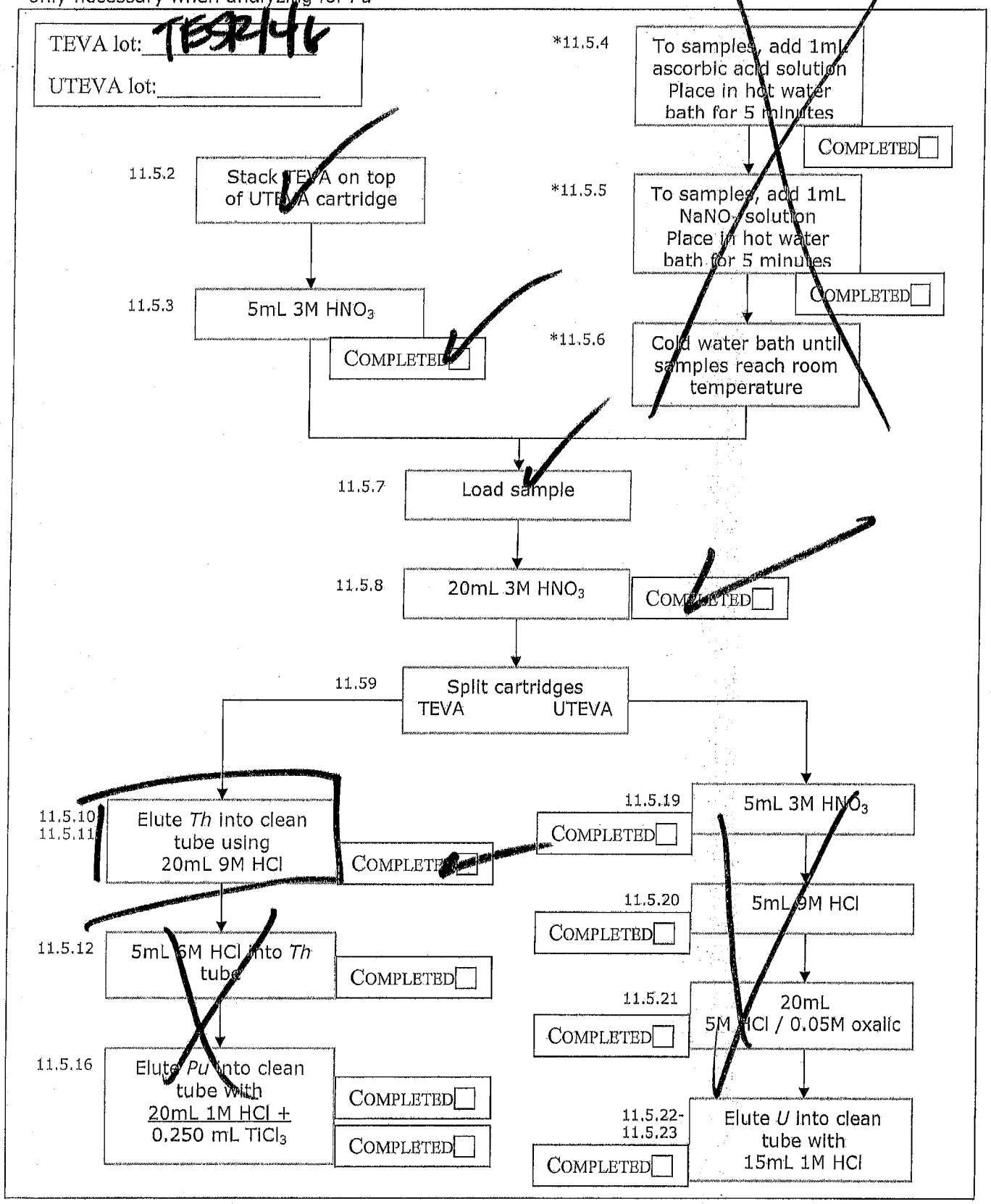
Sequential Thorium, Plutonium and Uranium via TEVA/UTEVA ST-RC-0242

Batch: Th Ur.

MB 9/23

All rinses should flow at 1 mL/minute (only 3M HNO_3 may be done at 3 mL/minute)

*only necessary when analyzing for *Pu*

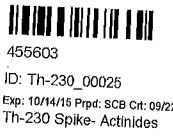


Form: RAD-0063, Revised 09/18/13

Reagent

Th-230_00025

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING



Reagent ID: Th-230_00025

Description:	Th-230 Spike- Actinides	Expiration Date:	10/14/2015
No. of Bottles:	1	Laboratory:	TestAmerica St. Louis
Storage Location:	RAD Actinide STDs	Prepared By:	Bernsen, Sarah C
Reagent Volume:	200.000 mL	Solvent:	1M HNO3
Creation Date:	09/22/2014	Solvent Lot:	0
Container(s):	455603		
Comment:			

Reagent Analyte Information

Analyte	Source ID	Source Exp. Date	Source Conc.	Source Conc. Units	Final Conc.	Final Conc. Units
Gross Alpha	Th-230_00019	08/08/2063	2228.23100	dpm/mL	44.56461	dpm/mL
Th-230	Th-230_00019	08/08/2063	2228.23100	dpm/mL	44.56461	dpm/mL

Source Reagents

Reagent	Description	Type	Expiration	Vendor	Vendor Lot #	Vendor Cat Lot #	Volume Used	Volume Units
Th-230_00019	Th-230 Parent		08/08/63				4.00000	mL

St. Louis Radiological Standard Reverification Form

Standard ID Number: Th-230_00025
True Value = 44.564 DPM/L or g
Date Analyzed: 10/14/2014

Radionuclide: Th-230

	Replicates	
#1	44.35	DPM/L or g
#2	46.6	DPM/L or g
#3	47.34	DPM/L or g

Mean = 46.09667

1 sigma = 1.557252

1.96 sigma = 3.052214

True Value minus 5% = 42.3358 (True Value - 5%)
True Value plus 5% = 46.7922 (True Value + 5%)

Accuracy:
Mean value within 5% of Certified (True) Value? Yes **(Acceptance Criteria)**

Precision:
1.96 sigma Value Within 10% of Mean Value? Yes **(Acceptance Criteria)**

Standard Reverification Acceptable? Yes

Note: Criteria for reverification of radiological standards is taken from the DOE QSAS and LANL Statements of Work

Reviewed By/Date: RTM

SOP Reference: STL-QA-0002, Current Revision

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
9:46:06PM 10/14/2014

Sample

Sample Name: Verification1 Type: Sample
Spectrum #1 Analysis #1
:
Sample Collection Date:
Comment:

Sample Volume : 0.30 Sample Units: mL
First Stage Dilution: N/A
Aliquot: N/A Aliquot Fraction: N/A
Dilution 2: N/A
Lab Preparation:

Batch

Batch Name: TH-230_00025
:
Description:

Client Name: Undefined
Client Contact:
Analyst: 60040

Tracer

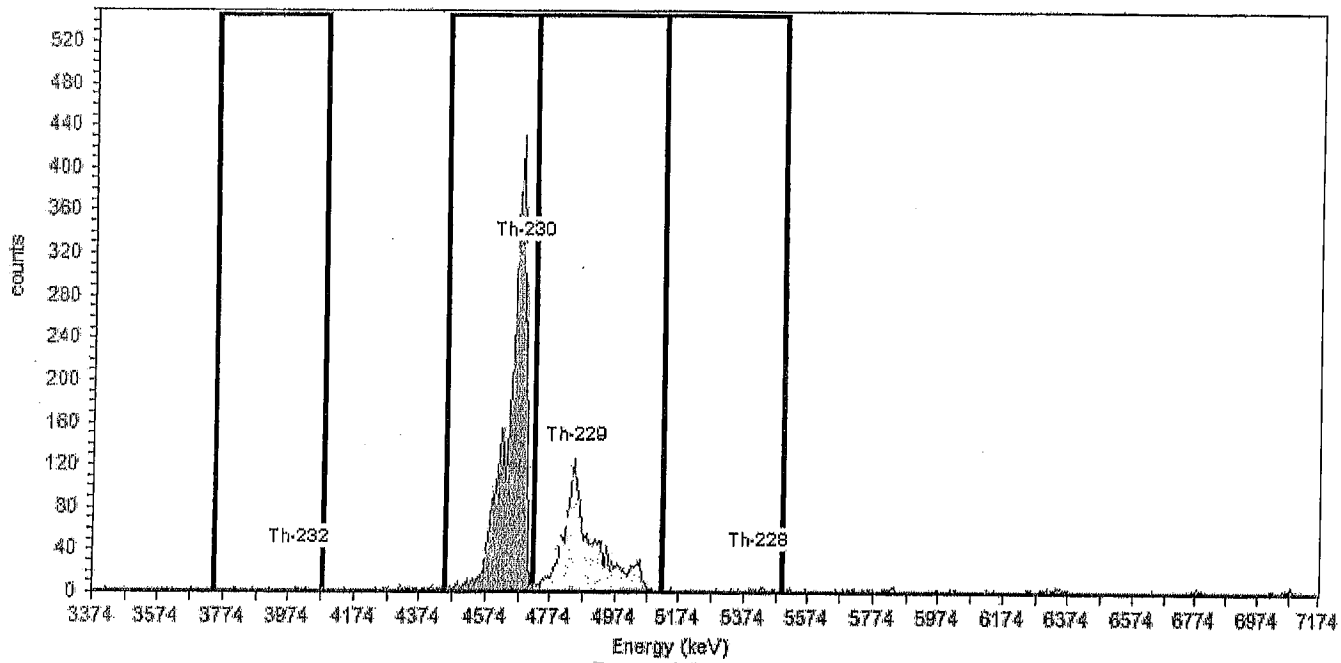
Tracer Name: Th-229_00018
Tracer Activity: 67.23 DPM / mL x (Vol.) 0.10 mL = 6.72 DPM
Tracer Ref. Date: 8/6/2014 4:36:53PM

Tracer Nuclide: Th-229
Tracer Recovery: 99.85%

Acquisition

Detector: AV247 SN: 51-027F3
Acquisition Start Date: 10/14/2014 1:33:02AM
Live Time: 960.00 min.
Real Time: 960.00 min.
Background Date: 9/14/2014 7:35:50PM
Bkgd Info: Sample: ICB;AV247; Det: AV247; Spectrum #1; 9/14/2014 7:35:50 PM

Energy Calibration: IC-8875;AV247-20140701
Efficiency Calibration:IC-8875;AV247-20140701
Calibration Date: 7/1/2014 5:29:01PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 26.06% +/- 0.36% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = Th2007_ROI
Decay Correction:10/14/2014 1:31:04AM
MDA Constants: Kα = 1.64 , Kβ = 1.64

Nuclide Library: Thorium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
Th-232	3999.0	4,010.0	-11.0	3743.0	4072.0	39.6	100.2	9	3.0000	5.54	7.381E-002	DPM/mL
Th-230	4688.0	4,687.5	0.5	4446.0	4717.0	25.9	99.7	3313	0.0000	3313.12	4.435E+001	DPM/mL
Th-229	4848.0	4,845.3	2.7	4717.0	5119.0	68.6	99.6	1674	1.0000	1673.12	2.238E+001	DPM/mL
Th-228	5420.0	5,423.3	-3.3	5119.0	5493.0	47.1	99.8	18	6.9134	11.09	1.483E-001	DPM/mL

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
9:46:18PM 10/14/2014

Sample

Sample Name: Verification2 Type: Sample
Spectrum #1 Analysis #1
:
Sample Collection Date:
Comment:

Sample Volume : 0.30 Sample Units: mL
First Stage Dilution: N/A
Aliquot: N/A Aliquot Fraction: N/A
Dilution 2: N/A
Lab Preparation:

Batch

Batch Name: TH-230_00025
:
Description:

Client Name: Undefined
Client Contact:
Analyst: 60040

Tracer

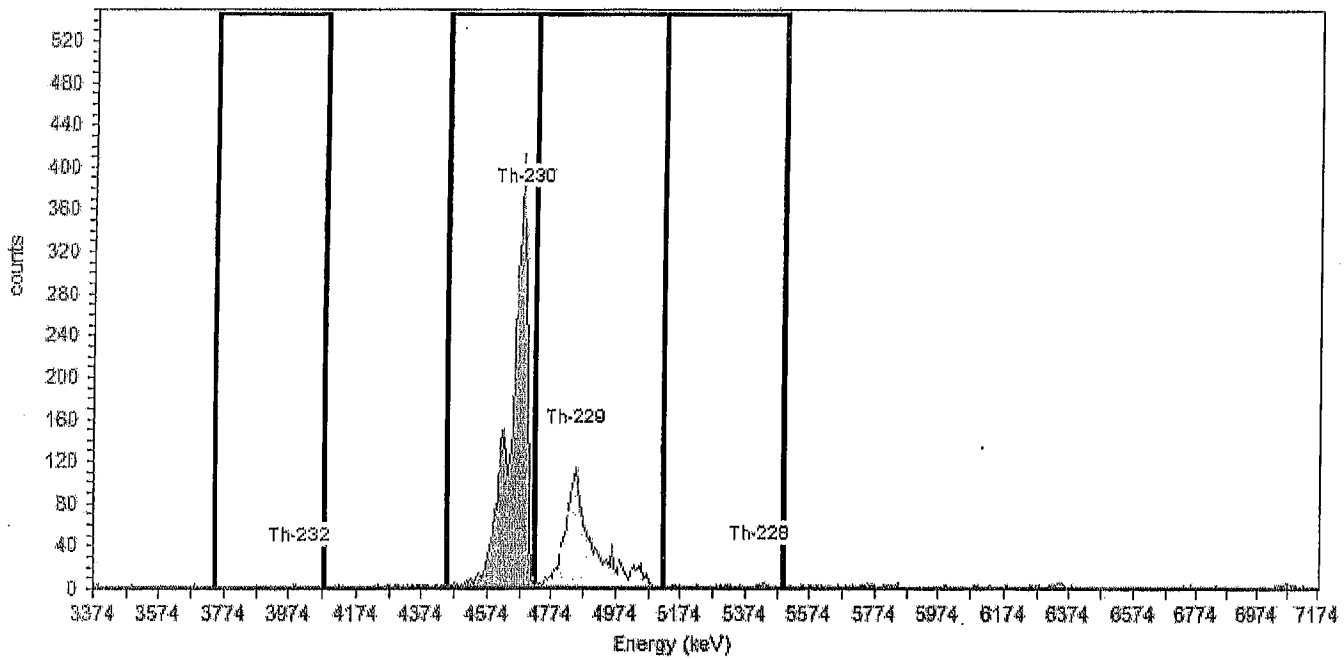
Tracer Name: Th-229_00018
Tracer Activity: 67.23 DPM / mL x (Vol.) 0.10 mL = 6.72 DPM
Tracer Ref. Date: 8/6/2014 4:36:53PM

Tracer Nuclide: Th-229
Tracer Recovery: 87.77%

Acquisition

Detector: AV248 SN: 51-005P4
Acquisition Start Date: 10/14/2014 1:33:02AM
Live Time: 960.00 min.
Real Time: 960.00 min.
Background Date: 9/14/2014 7:35:50PM
Bkgd Info: Sample: ICB;AV248; Det: AV248; Spectrum #1; 9/14/2014 7:35:50 PM

Energy Calibration: IC-8876;AV248-20140701
Efficiency Calibration:IC-8876;AV248-20140701
Calibration Date: 7/1/2014 5:29:05PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 25.83% +/- 0.30% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = Th2007_ROI
Decay Correction:10/14/2014 1:31:04AM
MDA Constants: Kα = 1.64 , Kβ = 1.64

Nuclide Library: Thorium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
Th-232	3999.0	4,010.0	-11.0	3743.0	4072.0	44.5	100.2	1	0.0000	1.00	1.529E-002	DPM/mL
Th-230	4688.0	4,687.5	0.5	4446.0	4717.0	29.3	99.7	3035	2.0000	3033.37	4.660E+001	DPM/mL
Th-229	4848.0	4,845.3	2.7	4717.0	5119.0	72.1	99.6	1458	0.0639	1458.00	1.967E+001	DPM/mL
Th-228	5420.0	5,423.3	-3.3	5119.0	5493.0	146.1	99.8	19	18.0639	0.94	1.437E-002	DPM/mL

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
9:46:30PM 10/14/2014

Sample

Sample Name: Verification3 Type: Sample
Spectrum #1 Analysis #1
:
Sample Collection Date:
Comment:

Sample Volume : 0.30 Sample Units: mL
First Stage Dilution: N/A
Aliquot: N/A Aliquot Fraction: N/A
Dilution 2: N/A
Lab Preparation:

Batch

Batch Name: TH-230_00025
:
Description:

Client Name: Undefined
Client Contact:
Analyst: 60040

Tracer

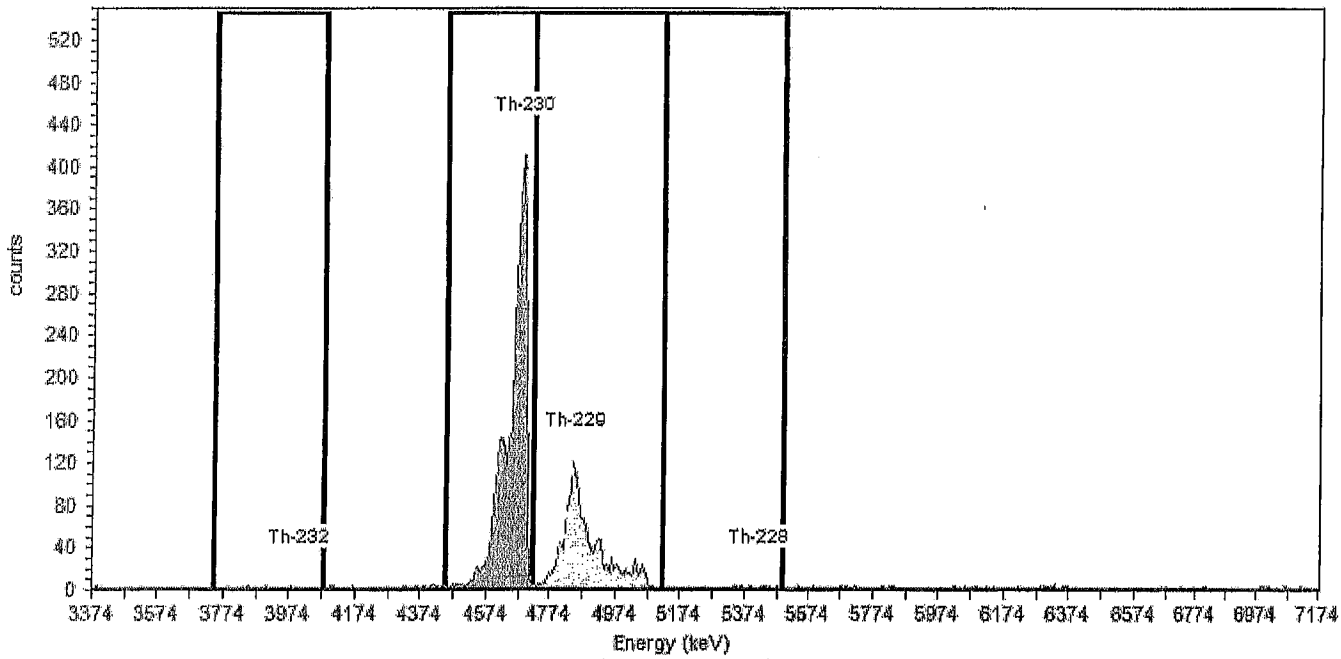
Tracer Name: Th-229_00018
Tracer Activity: 67.23 DPM / mL x (Vol.) 0.10 mL = 6.72 DPM
Tracer Ref. Date: 8/6/2014 4:36:53PM

Tracer Nuclide: Th-229
Tracer Recovery: 87.56%

Acquisition

Detector: AV249 SN: 51-005EE5
Acquisition Start Date: 10/14/2014 1:33:02AM
Live Time: 960.00 min.
Real Time: 960.00 min.
Background Date: 9/14/2014 7:35:51PM
Bkgd Info: Sample: ICB;AV249; Det: AV249; Spectrum #1; 9/14/2014 7:35:51 PM

Energy Calibration: IC-8877;AV249-20140701
Efficiency Calibration:IC-8877;AV249-20140701
Calibration Date: 7/1/2014 5:29:09PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 27.35% +/- 0.32% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = Th2007_ROI
Decay Correction:10/14/2014 1:31:04AM
MDA Constants: Kα = 1.64 , Kβ = 1.64

Nuclide Library: Thorium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
Th-232	3999.0	4,010.0	-11.0	3743.0	4072.0	39.9	100.2	3	0.4586	2.54	3.678E-002	DPM/mL
Th-230	4688.0	4,687.5	0.5	4446.0	4717.0	30.5	99.7	3256	1.0000	3255.03	4.734E+001	DPM/mL
Th-229	4848.0	4,845.3	2.7	4717.0	5119.0	69.6	99.6	1542	2.0639	1539.97	1.962E+001	DPM/mL
Th-228	5420.0	5,423.3	-3.3	5119.0	5493.0	38.0	99.8	10	6.0639	3.94	5.721E-002	DPM/mL

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Actinide Prep — Th-230 ver.

Batch No. : —

Balance ID : —

AKS 10/13/14

No.	Sample Number	Aliquot (g / mL)	Crucible ID	Dilution
1	Vel. 1 247	0.3		
2	L2 248	1		
3	L3 249	1		
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				

Note: If a section below is not used, marked the N/A box and initial & date next to the N/A. i.e. Mark the N/A box if a tracer is not added to the sample(s) then initial and date next to the N/A

Tracer ☐ N/A (Initials / Date)

Isotope : Th-229
Std Sol'n No. : Th-229-00018
Vol (mL) : 0.1
Ref Activity (dpm/mL) :
Act Ref Date :

Samples Spiked and Traced By: SUB 10/10/14 (Initials / Date)

Verification Signature & Date: NMN per SUB 10/10/14 (Initials / Date)

LCS Standard ☐ N/A (Initials / Date)

Isotope : Th-230
Std Sol'n ID. : Th-230-00025
Vol (mL) : 0.3
Ref Activity (dpm/mL) : 44.504
Act Ref Date : 8/8/13

SOP's applied in preparing these samples. Mark box to left for all that apply:

☐ ST-RC-0003 Rev.		☐ ST-RC-0040 Rev.		☐ ST-RC-0110 Rev.	
☑ ST-RC-0004 Rev.		☐ ST-RC-0041 Rev.		☐ ST-RC-0120 Rev.	
☐ ST-RC-0014 Rev.		☐ ST-RC-0050 Rev.		☐ ST-RC-0232 Rev.	
☐ ST-RC-0020 Rev.		☐ ST-RC-0090 Rev.		☐ ST-RC-0238 Rev.	
☐ ST-RC-0021 Rev.		☑ ST-RC-0100 Rev.		☐ ST-RC-0240 Rev.	
				☐ ST-RC-0241 Rev.	
				☑ ST-RC-0242 Rev.	
				☐ ST-RC-5016 Rev.	

Isotope(s)

αβ ☐	Iso Pu ☐	Tc-99 ☐	Iso Cm ☐
Iso Am ☐	Ra ☐	Iso Th ☑	Pu-241 ☐
KPA ☐	Sr ☐	Iso U ☐	Th-229 ☐
Np ☐	TAR ☐	C-14 ☐	Cl-36 ☐

Count Time	Matrix
Long Count ☐	Soil ☐
Short Count ☐	H_2O ☐

Prepared By : SUB
Date : 10/13/14

Reviewed by: _____
Date: _____

\\Slsvr01\RAD\MasterForms\RAD-0045 Rev(3)

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Reagent ID: Th-230_00025

		Expiration Date:	01/28/2015
Description:	Th-230 Spike- Actinides	Laboratory:	TestAmerica St. Louis
No. of Bottles:	1	Prepared By:	Bernsen, Sarah C
Storage Location:	RAD Actinide STDs	Solvent:	1M HNO3
Reagent Volume:	200.000 mL	Solvent Lot:	0
Creation Date:	09/22/2014		
Container(s):	455603		
Comment:			

Reagent Analyte Information

Analyte	Source ID	Source Exp. Date	Source Conc.	Source Conc. Units	Final Conc.	Final Conc. Units
Gross Alpha	Th-230_00019	08/08/2063	2228.23100	dpm/mL	44.56461	dpm/mL
Th-230	Th-230_00019	08/08/2063	2228.23100	dpm/mL	44.56461	dpm/mL

Source Reagents

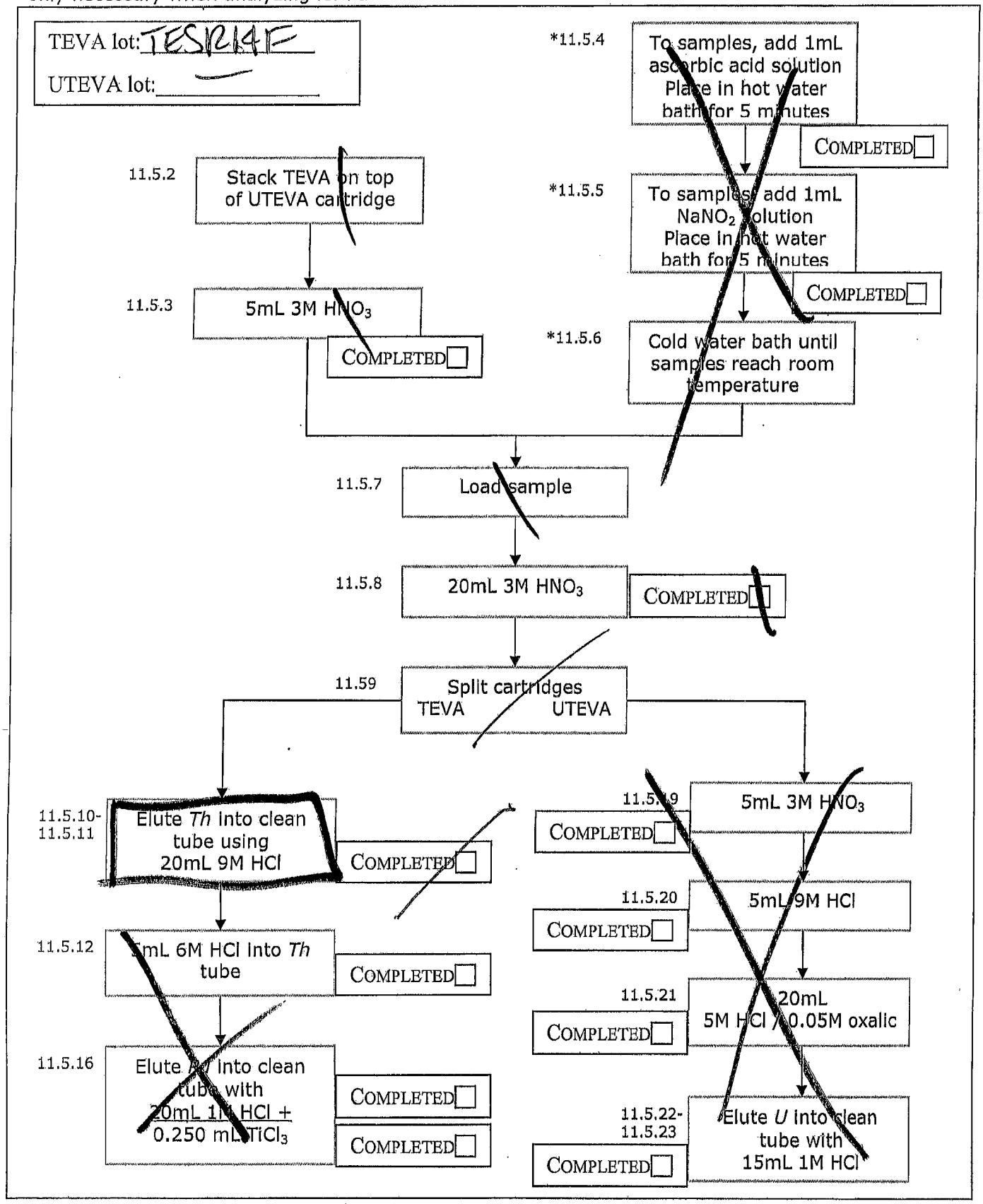
Reagent	Description	Type	Expiration	Vendor	Vendor Lot #	Vendor Cat Lot #	Volume Used	Volume Units
Th-230_00019	Th-230 Parent		08/08/63				4.00000	mL

Sequential Thorium, Plutonium and Uranium via TEVA/UTEVA ST-RC-0242

Batch:_____

All rinses should flow at 1 mL/minute (only 3M HNO_3 may be done at 3 mL/minute)

*only necessary when analyzing for *Pu*



Form: RAD-0063, Revised 09/18/13

Reagent

U-232_00003

Eckert & Ziegler
Analytics

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318
Tel 404·352·8677
Fax 404·352·2837
www.analyticsinc.com

CERTIFICATE OF CALIBRATION
Standard Radionuclide Source

85539-334

5 mL Liquid in Flame Sealed Vial

Customer: Test America/Earth City, MO
P.O. No.: 2434448, Item 1

This standard radionuclide source was prepared gravimetrically from a master solution, calibrated by Eckert & Ziegler Analytics. The master solution was calibrated by liquid scintillation counting. Radionuclide purity and calibration were checked by germanium gamma-ray spectrometry and liquid scintillation counting. The nuclear decay rate and reference date for this source are given below. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 1, February, 1979, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Isotope	Half-Life, Days	Activity (Bq)	Uncertainty*, % Type u_A	u_B	U	Reference Date (12:00 PM EST)
U-232	2.517E+04	1.725E+04	0.5	2.4	4.9	08/25/2011

***Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

Comments:
Impurities: U-232 daughters, γ-impurities (other than decay products) < 0.1 %.

Source Prepared by: M. I. Taskaeva, Radiochemist

QA Approved: J. D. McCorvey, QA Manager Alternate Date: 8/25/11

ACCREDITED SOURCE CALIBRATION LABORATORY HEALTH PHYSICS SOCIETY FOUNDED 1956

Corporate Office
24937 Avenue Tibbitts Valencia, California 91355

Laboratory
1380 Seaboard Industrial Blvd. Atlanta, Georgia, 30318

Reagent

U-232_00028

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Reagent ID: U-232_00028

		Expiration Date:	09/30/2015
Description:	U-232 Clean Tracer	Laboratory:	TestAmerica St. Louis
No. of Bottles:	1	Prepared By:	Bernsen, Sarah C
Storage Location:	RAD Actinide STDs	Solvent:	DI Water
Reagent Volume:	250.000 mL	Solvent Lot:	0
Creation Date:	09/23/2014		
Container(s):	456736		
Comment:	Prepared according to SOP ST-RC-0244, Rev.16 section 7.28 to different volume. 2 mL of parent to ~100 mL, 3g potassium sulfate, pH adjusted with 2M sulfuric acid. 25 mL of 1% lead nitrate. pH checked. Final volume 250 mL (instead of 100 mL).		

Reagent Analyte Information

Analyte	Source ID	Source Exp. Date	Source Conc.	Source Conc. Units	Final Conc.	Final Conc. Units
U-232	U-232_00009	08/25/2061	10280.70700	dpm/mL	82.24566	dpm/mL

Source Reagents

Reagent	Description	Type	Expiration	Vendor	Vendor Lot #	Vendor Cat Lot #	Volume Used	Volume Units
U-232_00009	U-232 Parent		08/25/61				2.00000	mL

St. Louis Radiological Standard Reverification Form

Standard ID Number: U-232_00028
True Value = 79.72088 DPM/L or g
Date Analyzed: 9/30/2014

Radionuclide: U-232 clean

	Replicates	
#1	78.189	DPM/L or g
#2	74.447	DPM/L or g
#3	77.297	DPM/L or g

Mean = 76.64433

1 sigma = 1.954513

1.96 sigma = 3.830846

True Value minus 5% = 75.73483 (True Value - 5%)
True Value plus 5% = 83.70692 (True Value + 5%)

Accuracy:
Mean value within 5% of Certified (True) Value? **Yes** **(Acceptance Criteria)**

Precision:
1.96 sigma Value Within 10% of Mean Value? **Yes** **(Acceptance Criteria)**

Standard Reverification Acceptable? **Yes**

Note: Criteria for reverification of radiological standards is taken from the DOE QSAS and LANL Statements of Work

Reviewed By/Date: Michaela L. Korrinhizer 10/1/2014

SOP Reference: STL-QA-0002, Current Revision

Uranium-232					
Initial Activity:	82.24565	dpm			
Reference Date:	8/25/2011				
Current Date:	9/30/2014		(or date at which you wish to determine activity)		
Elapsed Time:	1132	days			
Half Life:	25165.725	days	603977.4		
Exponential Term:	0.969302034				
Corrected Activity:	79.72087587	dpm	35.91030445	pCi	

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
5:12:13PM 10/1/2014

Sample

Sample Name: Verification 1
SampleType: Sample
:
Sample Collection Date:

Spectrum #1 Analysis #1
Sample Volume : 0.1000mL
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: U-232_00028_Clean
AnalysisID: 621980

Analyst: 60040

Tracer

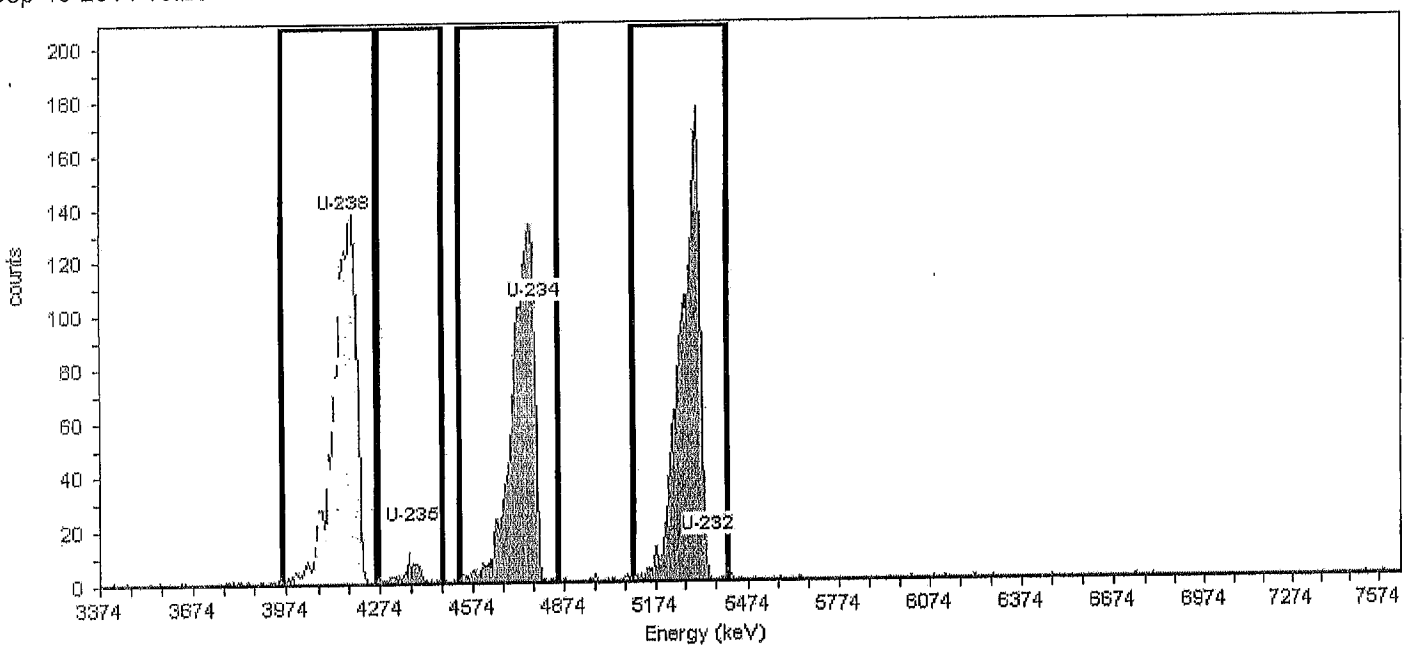
Tracer Name: UNAT Spike_00001
Tracer Activity: 72.27 DPM/mL x (Vol.)0.10 mL = 7.23 DPM
Tracer Ref. Date: 3/30/2008 11:00:22AM

Tracer Nuclide: U-238
Tracer Recovery: 84.88%

Acquisition

Detector: AV103
Serial Number: 49-037F3
Acquisition Start Date: 9/30/2014 7:28:49PM
Live Time: 960.00 min.
Real Time: 960.01 min.
Background Date: 9/19/2014 3:26:33PM
Background Info: Sample: ICB;AV103; Det: AV103; Spectrum #1; Sep-19-2014 15:26

Calibration Name: IC-9794;AV103-20140501
Calibration Date: 5/1/2014 5:53:36PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 26.03% +/- 0.32% TPU(2 sigma)



General Analysis

Analysis Method: ROI Analysis, Set Name = UROI
Decay Correction: 9/30/2014 7:27:32PM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Uranium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
U-238	4157.5	4,196.0	-38.5	3956.1	4261.9	76.6	100.0	1533	0.0000	1533.00	61.340	DPM/mL
U-235	4381.2	4,396.0	-14.8	4269.3	4470.7	48.5	80.2	64	2.0000	62.00	3.644	DPM/mL
U-234	4776.4	4,775.8	0.6	4530.3	4851.0	77.4	99.8	1472	2.0000	1470.00	69.434	DPM/mL
U-232	5343.2	5,320.3	22.9	5097.1	5410.3	63.8	100.1	1662	2.0000	1660.00	78.189	DPM/mL

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
5:12:04PM 10/1/2014

Sample

Sample Name: Verification 2
SampleType: Sample
:
Sample Collection Date:

Spectrum #1 Analysis #1
Sample Volume : 0.1000mL
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: U-232_00028_Clean
AnalysisID: 621981

Analyst: 60040

Tracer

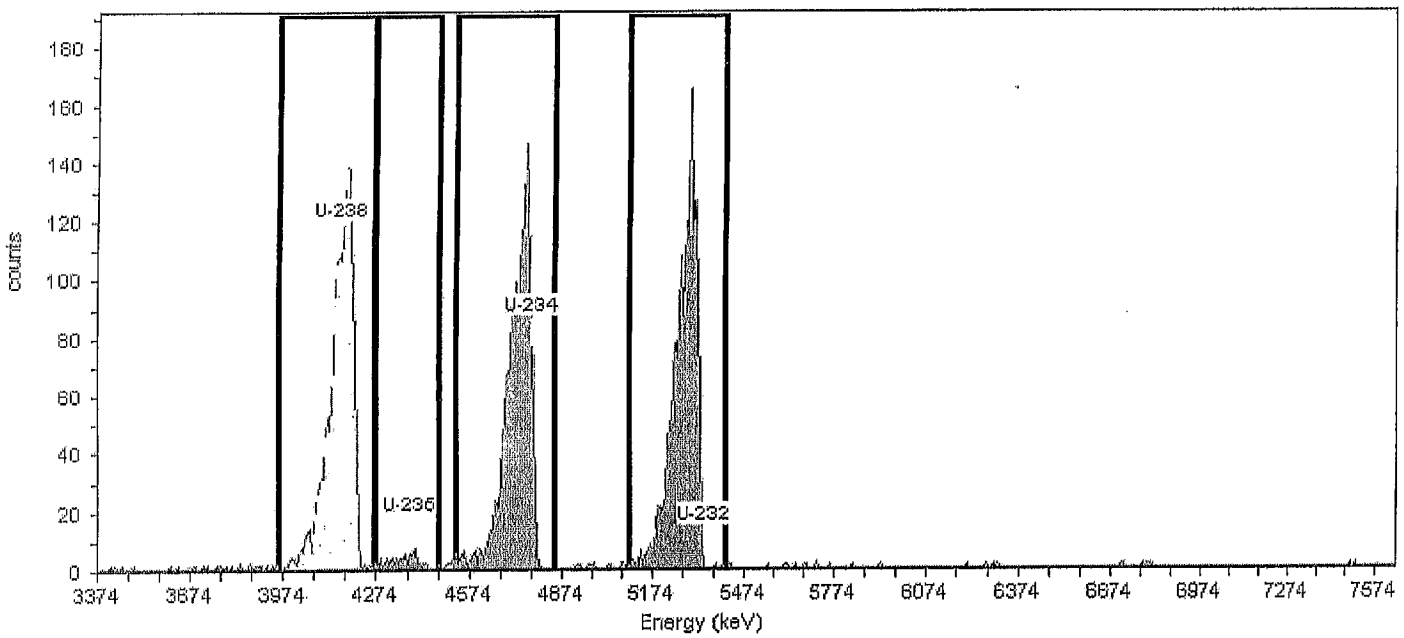
Tracer Name: UNAT Spike_00001
Tracer Activity: 72.27 DPM/mL x (Vol.)0.10 mL = 7.23 DPM
Tracer Ref. Date: 3/30/2008 11:00:22AM

Tracer Nuclide: U-238
Tracer Recovery: 82.24%

Acquisition

Detector: AV104
Serial Number: 49-037E5
Acquisition Start Date: 9/30/2014 7:28:49PM
Live Time: 960.00 min.
Real Time: 960.01 min.
Background Date: 9/19/2014 3:26:35PM
Background Info: Sample: ICB;AV104; Det: AV104; Spectrum #1; Sep-19-2014 15:26

Calibration Name: IC-9795;AV104-20140501
Calibration Date: 5/1/2014 5:53:43PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 25.99% +/- 0.34% TPU(2 sigma)



General Analysis

Analysis Method: ROI Analysis, Set Name = UROI
Decay Correction: 9/30/2014 7:27:32PM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Uranium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
U-238	4157.5	4,196.0	-38.5	3956.1	4261.9	76.7	100.0	1489	6.0000	1483.00	59.433	DPM/mL
U-235	4381.2	4,396.0	-14.8	4269.3	4470.7	96.9	80.2	68	0.0000	68.00	4.132	DPM/mL
U-234	4776.4	4,775.8	0.6	4530.3	4851.0	85.2	99.8	1492	3.0000	1489.00	72.703	DPM/mL
U-232	5343.2	5,320.3	22.9	5097.1	5410.3	80.3	100.1	1532	3.0000	1529.00	74.447	DPM/mL

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
5:11:54PM 10/1/2014

Sample

Sample Name: Verification 3
SampleType: Sample
:
Sample Collection Date:

Spectrum #1 Analysis #1
Sample Volume : 0.1000mL
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: U-232_00028_Clean
AnalysisID: 621982

Analyst: 60040

Tracer

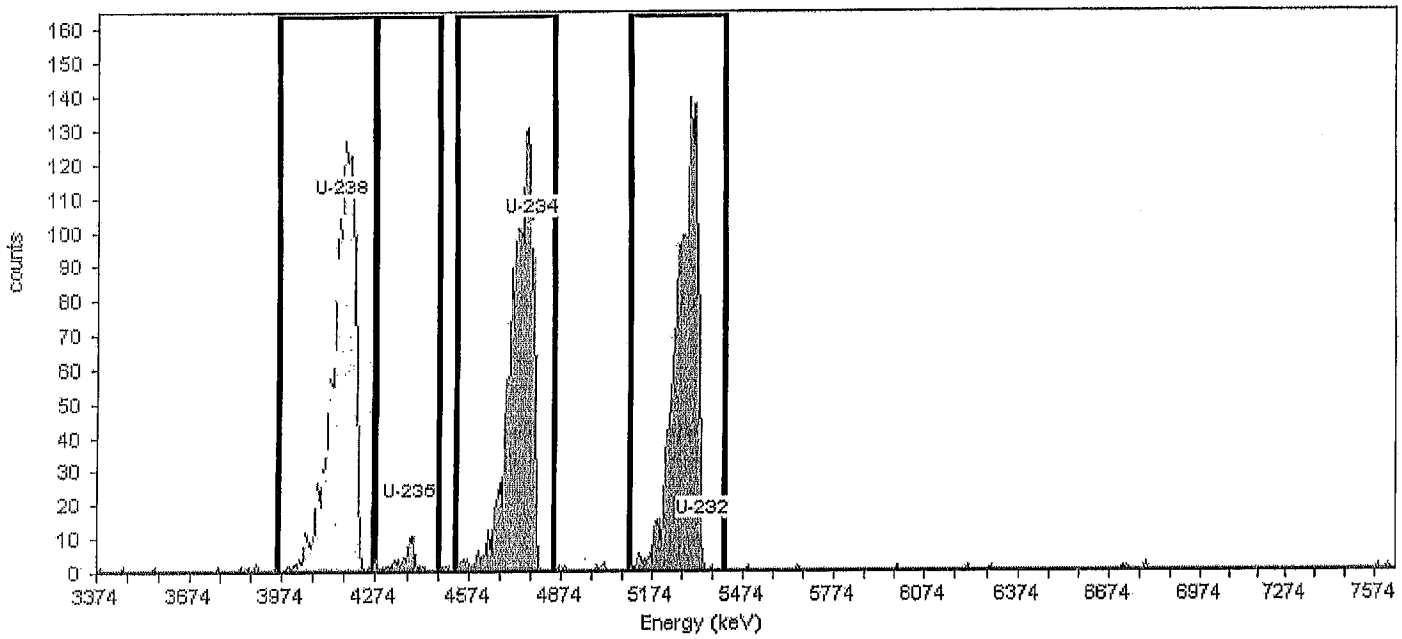
Tracer Name: UNAT Spike_00001
Tracer Activity: 72.27 DPM/mL x (Vol.)0.10 mL = 7.23 DPM
Tracer Ref. Date: 3/30/2008 11:00:22AM

Tracer Nuclide: U-238
Tracer Recovery: 82.46%

Acquisition

Detector: AV105
Serial Number: 49-037F1
Acquisition Start Date: 9/30/2014 7:28:50PM
Live Time: 960.00 min.
Real Time: 960.01 min.
Background Date: 9/19/2014 3:26:37PM
Background Info: Sample: ICB;AV105; Det: AV105; Spectrum #1; Sep-19-2014 15:26

Calibration Name: IC-9817;AV105-20140501
Calibration Date: 5/1/2014 5:53:50PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 24.05% +/- 0.30% TPU(2 sigma)



General Analysis

Analysis Method: ROI Analysis, Set Name = UROI
Decay Correction: 9/30/2014 7:27:32PM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Uranium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
U-238	4157.5	4,196.0	-38.5	3956.1	4261.9	73.2	100.0	1377	1.0000	1376.00	59.593	DPM/mL
U-235	4381.2	4,396.0	-14.8	4269.3	4470.7	23.1	80.2	52	1.0000	51.00	3.340	DPM/mL
U-234	4776.4	4,775.8	0.6	4530.3	4851.0	81.9	99.8	1393	1.0000	1392.00	73.252	DPM/mL
U-232	5343.2	5,320.3	22.9	5097.1	5410.3	87.1	100.1	1478	5.0000	1473.00	77.297	DPM/mL

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
11:10:20PM 10/1/2014

Sample

Sample Name: Verification 1
SampleType: Sample
:
Sample Collection Date:

Spectrum #1 Analysis #1
Sample Volume : 1.0000mL
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: U-232_00028_Th_Clean
AnalysisID: 621985

Analyst: 60040

Tracer

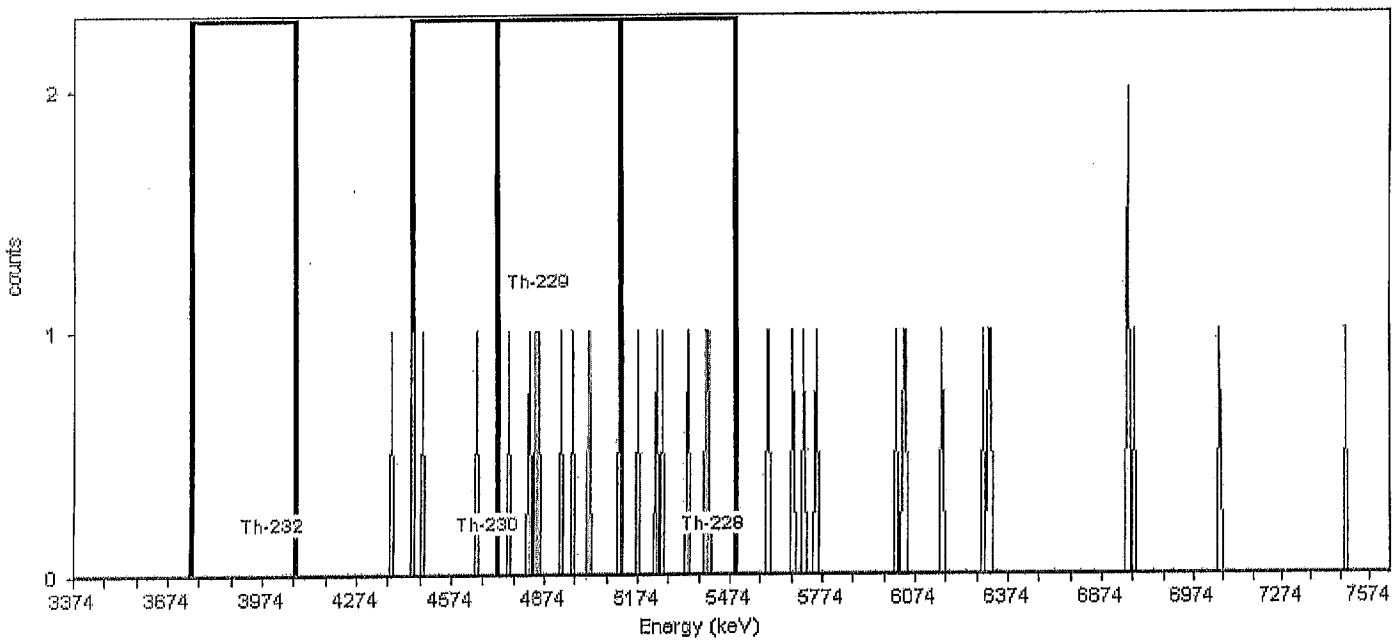
Tracer Name: Undefined
Tracer Activity:
Tracer Ref. Date:

Tracer Nuclide: External Recovery
Tracer Recovery: 100.00%

Acquisition

Detector: AV106
Serial Number: 49-037F6
Acquisition Start Date: 9/30/2014 7:30:38PM
Live Time: 960.00 min.
Real Time: 960.01 min.
Background Date: 9/19/2014 3:26:39PM
Background Info: Sample: ICB;AV106; Det: AV106; Spectrum #1; Sep-19-2014 15:26

Calibration Name: IC-9884;AV106-20140501
Calibration Date: 5/1/2014 5:53:57PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 26.42% +/- 0.37% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = Th2007_ROI
Decay Correction: 9/30/2014 7:29:07PM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Thorium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
Th-232	3999.0	4,010.0	-11.0	3743.0	4072.0	.0	100.2	0	2.0000	-2.00	-0.008	DPM/mL
Th-230	4688.0	4,687.5	0.5	4446.0	4717.0	39.9	99.7	3	3.0000	-0.31	-0.001	DPM/mL
Th-229	4848.0	4,845.3	2.7	4717.0	5119.0	.3	99.8	7	5.0000	2.06	0.008	DPM/mL
Th-228	5420.0	5,423.3	-3.3	5119.0	5493.0	.0	99.8	6	3.0000	3.06	0.012	DPM/mL

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
11:10:38PM 10/1/2014

Sample

Sample Name: Verification 2
SampleType: Sample
:
Sample Collection Date:

Spectrum #1 Analysis #1
Sample Volume : 1.0000mL
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: U-232_00028_Th_Clean
AnalysisID: 621983

Analyst: 60040

Tracer

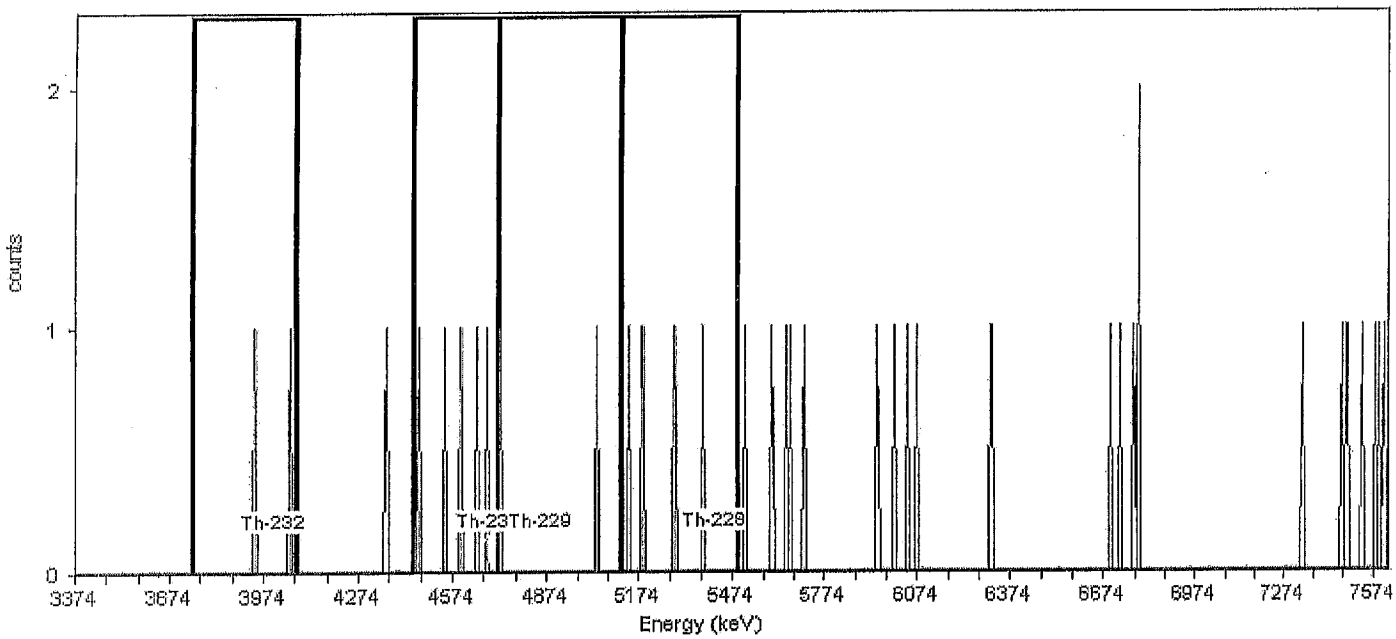
Tracer Name: Undefined
Tracer Activity:
Tracer Ref. Date:

Tracer Nuclide: External Recovery
Tracer Recovery: 100.00%

Acquisition

Detector: AV107
Serial Number: 49-037X7
Acquisition Start Date: 9/30/2014 7:30:39PM
Live Time: 960.00 min.
Real Time: 960.00 min.
Background Date: 9/19/2014 3:26:41PM
Background Info: Sample: ICB;AV107; Det: AV107; Spectrum #1; Sep-19-2014 15:26

Calibration Name: IC-9885;AV107-20140501
Calibration Date: 5/1/2014 5:54:04PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 25.60% +/- 0.38% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = Th2007_ROI
Decay Correction: 9/30/2014 7:29:07PM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Thorium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
Th-232	3999.0	4,010.0	-11.0	3743.0	4072.0	10.7	100.2	2	0.0000	2.00	0.008	DPM/mL
Th-230	4688.0	4,687.5	0.5	4446.0	4717.0	10.1	99.7	5	1.0000	4.03	0.016	DPM/mL
Th-229	4848.0	4,845.3	2.7	4717.0	5119.0	18.0	99.8	1	1.0000	0.03	0.000	DPM/mL
Th-228	5420.0	5,423.3	-3.3	5119.0	5493.0	20.4	99.8	4	2.0000	2.00	0.008	DPM/mL

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
11:10:49PM 10/1/2014

Sample

Sample Name: Verification 3
SampleType: Sample
:
Sample Collection Date:

Spectrum #1 Analysis #1
Sample Volume : 1.0000mL
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: U-232_00028_Th_Clean
AnalysisID: 621984

Analyst: 60040

Tracer

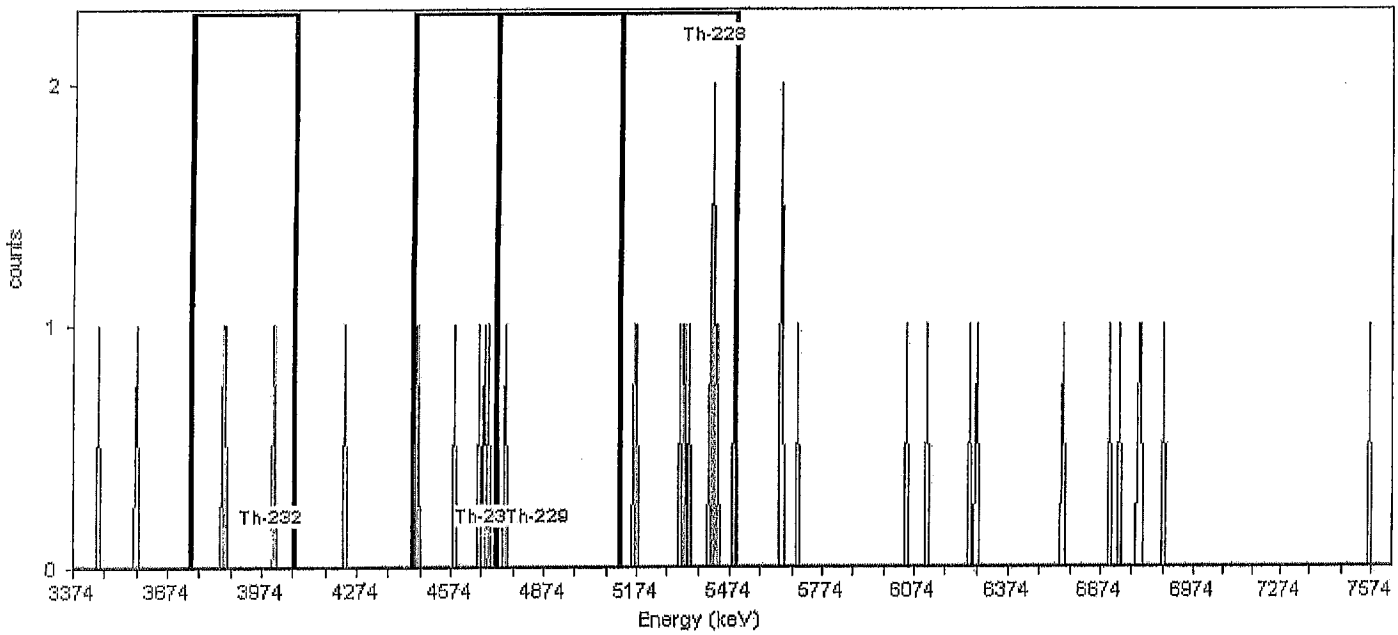
Tracer Name: Undefined
Tracer Activity:
Tracer Ref. Date:

Tracer Nuclide: External Recovery
Tracer Recovery: 100.00%

Acquisition

Detector: AV108
Serial Number: 49-037W1
Acquisition Start Date: 9/30/2014 7:30:41PM
Live Time: 960.00 min.
Real Time: 960.00 min.
Background Date: 9/19/2014 3:26:42PM
Background Info: Sample: ICB;AV108; Det: AV108; Spectrum #1; Sep-19-2014 15:26

Calibration Name: IC-9886;AV108-20140501
Calibration Date: 5/1/2014 5:54:10PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 26.31% +/- 0.35% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = Th2007_ROI
Decay Correction: 9/30/2014 7:29:07PM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Thorium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
Th-232	3999.0	4,010.0	-11.0	3743.0	4072.0	44.6	100.2	3	3.0000	0.00	0.000	DPM/mL
Th-230	4688.0	4,687.5	0.5	4446.0	4717.0	10.9	99.7	5	2.0310	2.97	0.012	DPM/mL
Th-229	4848.0	4,845.3	2.7	4717.0	5119.0	34.6	99.8	1	1.0310	-0.03	0.000	DPM/mL
Th-228	5420.0	5,423.3	-3.3	5119.0	5493.0	75.9	99.8	11	4.0000	7.00	0.028	DPM/mL

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

U-232 clean verification

Actinide Prep

Batch No. : —

Balance ID : —

No.	Sample Number	Aliquot (g / mL)	Crucible ID	Dilution
103 1	verification - 1	0.1	102	
104 2	2	1	107	
105 3	3	1	108	
4				
5				
6				
7				
8				
9				
10				
11				
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14				
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16				
17				
18				
19				
20				
21				
22				
23				
24				

Note: If a section below is not used, marked the N/A box and initial & date next to the N/A. i.e. Mark the N/A box if a tracer is not added to the sample(s) then initial and date next to the N/A.

Tracer ☐ N/A — Initials / Date

Isotope : UNAT
Std Sol'n No. : UNAT Spike -00001
Vol (mL) : 0.1
Ref Activity (dpm/mL) : 234- 70.691 / 235- 3.370 / 238- 72.264
Act Ref Date : 03-30-08

Samples Spiked and Traced By:

Initials / Date

Verification Signature & Date:

Initials / Date

LCS Standard ☐ N/A — Initials / Date

Isotope : U-232 clean
Std Sol'n ID. : U-232-00028
Vol (mL) : 0.1
Ref Activity (dpm/mL) : 82.24565
Act Ref Date : 08-25-11

SOP's applied in preparing these samples. Mark box to left for all that apply:

☐ ST-RC-0003 Rev.	☐ ST-RC-0040 Rev.	☐ ST-RC-0110 Rev.
☐ ST-RC-0004 Rev.	☐ ST-RC-0041 Rev.	☐ ST-RC-0120 Rev.
☐ ST-RC-0014 Rev.	☐ ST-RC-0050 Rev.	☐ ST-RC-0232 Rev.
☐ ST-RC-0020 Rev.	☐ ST-RC-0090 Rev.	☐ ST-RC-0238 Rev.
☐ ST-RC-0021 Rev.	☐ ST-RC-0100 Rev.	☐ ST-RC-0240 Rev.
		☐ ST-RC-0241 Rev.
		☐ ST-RC-0242 Rev.
		☐ ST-RC-5016 Rev.

Isotope(s)

αβ ☐	Iso Pu ☐	Tc-99 ☐	Iso Cm ☐
Iso Am ☐	Ra ☐	Iso Th ☐	Pu-241 ☐
KPA ☐	Sr ☐	Iso U ☑	Th-229 ☐
Np ☐	TAR ☐	C-14 ☐	Cl-36 ☐

Count Time	Matrix
Long Count ☑	Soil ☐
Short Count ☐	H_2O ☐

Prepared By : SNB
Date : 9-25-14

Reviewed by: _____
Date: _____

\\Slsvr01\RAD\MasterForms\RAD-0045 Rev(3)

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Reagent ID: U-232_00028

		Expiration Date:	05/11/2015
Description:	U-232 Clean Tracer	Laboratory:	TestAmerica St. Louis
No. of Bottles:	1	Prepared By:	Bernsen, Sarah C
Storage Location:	RAD Actinide STDs	Solvent:	DI Water
Reagent Volume:	250.000 mL	Solvent Lot:	0
Creation Date:	09/23/2014		
Container(s):	456736		
Comment:	Prepared according to SOP ST-RC-0244, Rev.16 section 7.28 to different volume. 2 mL of parent to ~100 mL, 3g potassium sulfate, pH adjusted with 2M sulfuric acid. 25 mL of 1% lead nitrate. pH checked. Final volume 250 mL (instead of 100 mL).		

Reagent Analyte Information

Analyte	Source ID	Source Exp. Date	Source Conc.	Source Conc. Units	Final Conc.	Final Conc. Units
U-232	U-232_00009	08/25/2061	10280.70700	dpm/mL	82.24566	dpm/mL

Source Reagents

Reagent	Description	Type	Expiration	Vendor	Vendor Lot #	Vendor Cat Lot #	Volume Used	Volume Units
U-232_00009	U-232 Parent		08/25/61				2.00000	mL

Sequential Thorium, Plutonium and Uranium via TEVA/UTEVA ST-RC-0242

Batch: U232 Clean Ur.

MB 9/26

All rinses should flow at 1 mL/minute (only 3M HNO_3 may be done at 3 mL/minute)

*only necessary when analyzing for *Pu*

TEVA lot: TES214G

UTEVA lot: UTB214D

*11.5.4 To samples, add 1mL ascorbic acid solution Place in hot water bath for 5 minutes — COMPLETED ☐

*11.5.5 To samples, add 1mL $NaNO_2$ solution Place in hot water bath for 5 minutes — COMPLETED ☐

*11.5.6 Cold water bath until samples reach room temperature

11.5.2 Stack TEVA on top of UTEVA cartridge

11.5.3 5mL 3M HNO_3 — COMPLETED ☐

11.5.7 Load sample

11.5.8 20mL 3M HNO_3 — COMPLETED ☑

11.59 Split cartridges TEVA UTEVA

11.5.10-11.5.11 Elute *Th* into clean tube using 20mL 9M HCl — COMPLETED ☑

11.5.12 5mL 6M HCl into *Th* tube — COMPLETED ☐

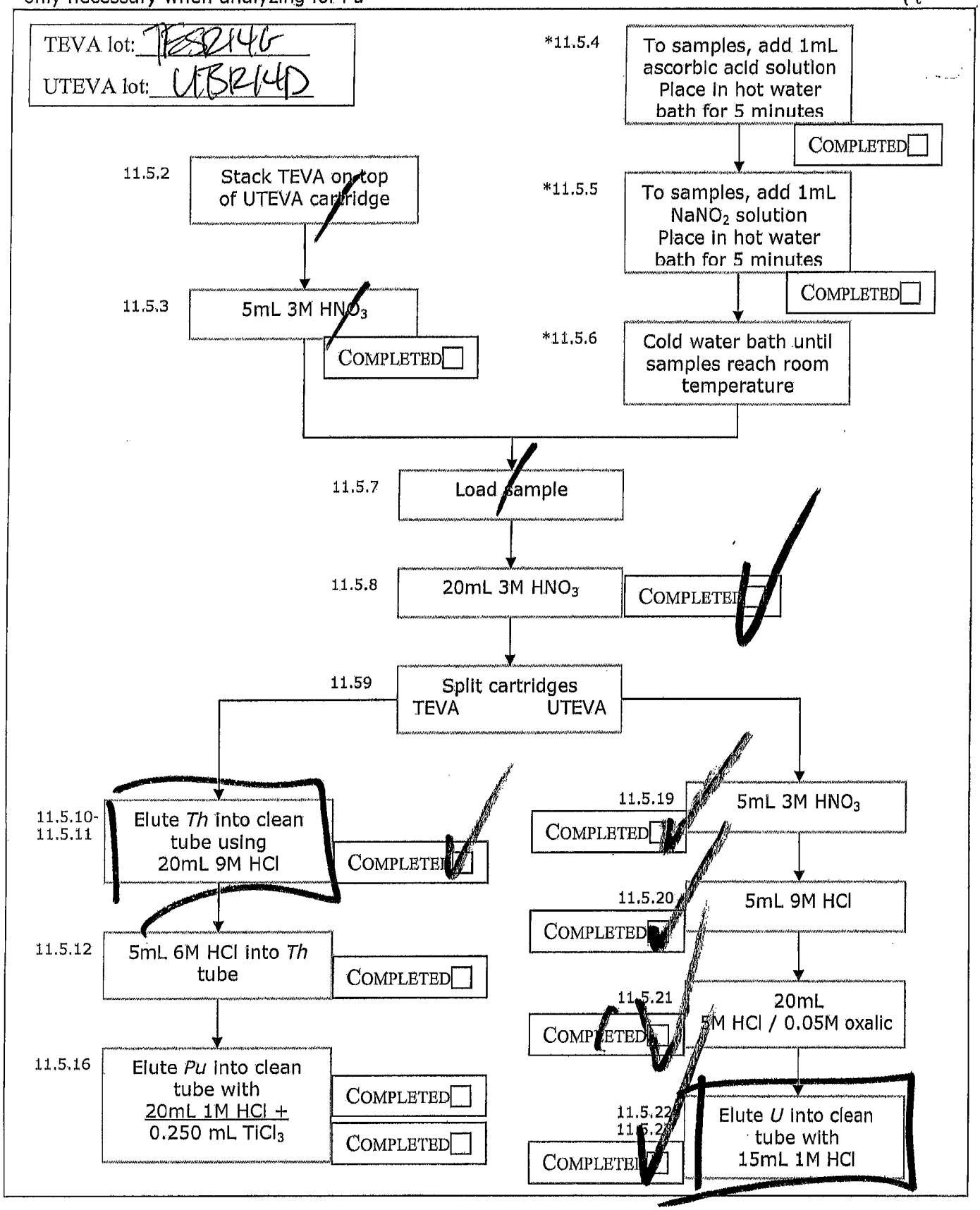
11.5.16 Elute *Pu* into clean tube with 20mL 1M HCl + 0.250 mL $TiCl_3$ — COMPLETED ☐ COMPLETED ☐

11.5.19 5mL 3M HNO_3 — COMPLETED ☑

11.5.20 5mL 9M HCl — COMPLETED ☑

11.5.21 20mL 5M HCl / 0.05M oxalic — COMPLETED ☑

11.5.22 11.5.23 Elute *U* into clean tube with 15mL 1M HCl — COMPLETED ☑



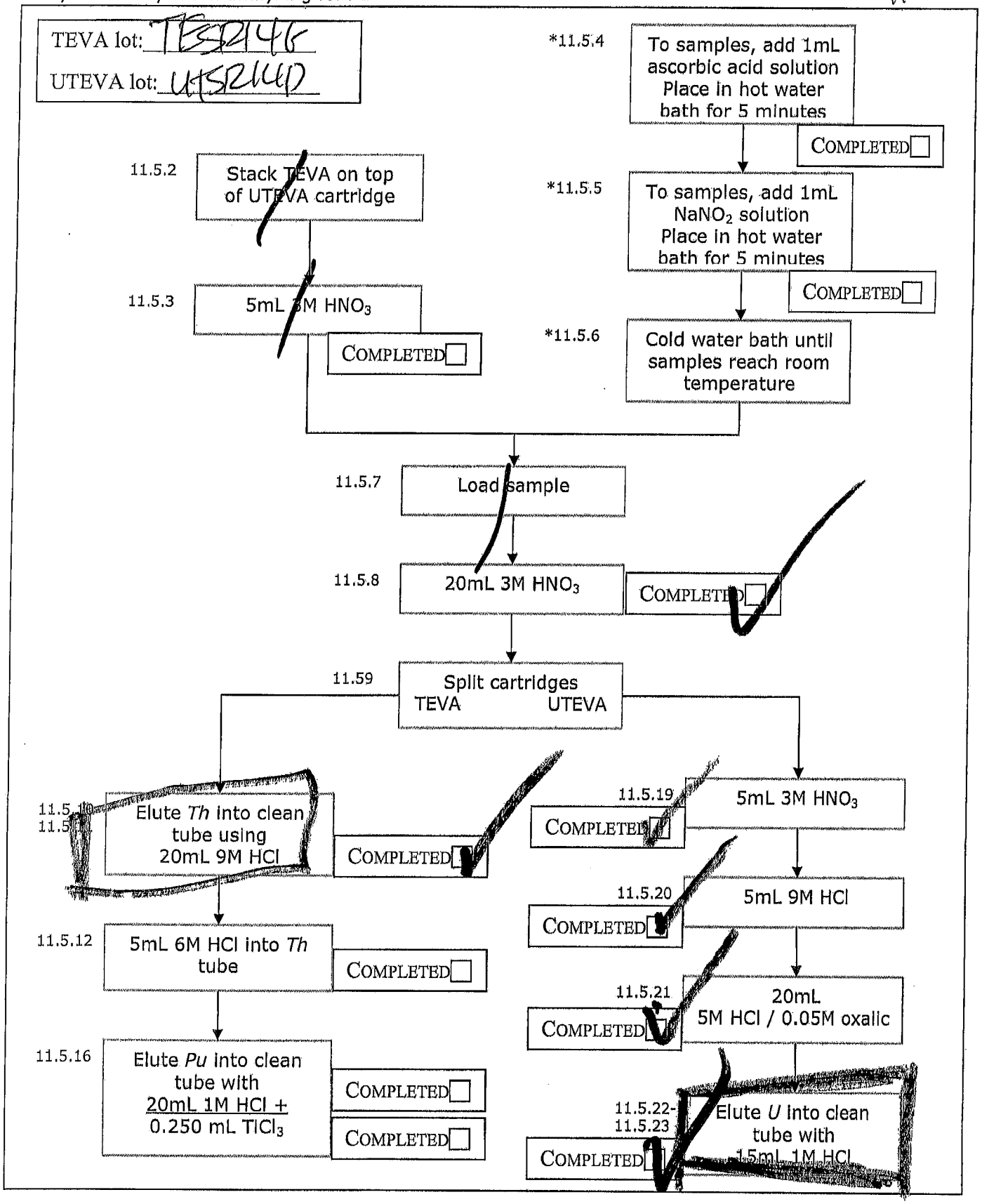
Form: RAD-0063, Revised 09/18/13

Sequential Thorium, Plutonium and Uranium via TEVA/UTEVA ST-RC-0242

Batch: U732 clean ver.

All rinses should flow at 1 mL/minute (only 3M HNO_3 may be done at 3 mL/minute)

*only necessary when analyzing for *Pu*



Form: RAD-0063, Revised 09/18/13

Reagent

UNAT Ampoule_00001

New Brunswick Laboratory
U.S. Department of Energy

Certificate of Analysis

CRM 145

Uranyl (Normal) Nitrate Assay and Isotopic Solution

Uranium Mass Fraction: **0.0101356 g U/g solution ± 0.0000011 g U/g solution**
[10.1356 mg U/g solution ± 0.0011 mg U/g solution]

	$^{234}U/^{238}U$	$^{235}U/^{238}U$
Atom Ratio:	**0.000052841**	**0.0072543**
Atom Ratio Uncertainty:	**0.000000082**	**0.0000040**

	^{234}U	^{235}U	^{238}U
Atom Percent:	**0.0052458**	**0.72017**	**99.27458**
Atom Percent Uncertainty:	**0.0000081**	**0.00039**	**0.00039**
Weight Percent:	**0.0051579**	**0.71114**	**99.28370**
Weight Percent Uncertainty:	**0.0000080**	**0.00038**	**0.00038**

Relative Atomic Weight: **238.028918**
Relative Atomic Weight Uncertainty: **0.000012**

Note: ^{233}U and ^{236}U were not detected. The detection limit of uranium ratios for the technique used is 5×10^{-9}.

This Certified Reference Material (CRM) is a uranium concentration and isotopic solution standard intended for use in calibration of and/or quality control for uranium analysis methods. Each unit of CRM 145 consists of approximately 20-mL of uranyl nitrate solution in 1M nitric acid, contained in a sealed glass ampoule.

NOTE: The vial should be handled under proper radiologically-controlled conditions at all times.

The certified uranium content value is based on the mass of high-purity metal dissolved and diluted to a known solution mass. The stated uranium concentration was calculated as the prepared value and verified experimentally by the NBL-modified Davies and Gray titration. The certified uranium isotopic composition and atomic weight is based upon measurements performed on multiple samples by two different measurement techniques on a Thermal Ionization Mass Spectrometer (TIMS), calibrated using CRM U030-A as primary comparator and CRM 129-A as a quality control sample. The isotopic values are shared with CRM 112-A, uranium (normal) metal standard which was the source of uranium used to produce the solutions.

RAD13-0018
UNAT Spike
marrss
None
Prep/Opened: 5/3/2013
Exp(1): 5/10/2014
Exp(2): 5/10/2014

All uncertainties for the certified values are expressed as expanded uncertainties (U) where $U = k*u_c$, where u_c is the

September 30, 2010
Argonne, Illinois

www.nbl.doe.gov

Jon Neuhoff, Director
New Brunswick Laboratory

(Revision of Certificate dated March 30, 2008)

127971
ID: UNAT_00008
Exp: 05/10/14 Prpd: SB Crt: 05/03/13
UNAT spike

combined standard uncertainty and the coverage factor k = 2. Uncertainties were determined according to the JCGM 100:2008 *Guide to the Expression of Uncertainty in Measurement*. The coverage factor of 2 was chosen to provide an approximate 95% level of confidence. The input quantities associated with the uranium content included uncertainties due to weighing, CRM 112-A purity, and buoyancy factors. The input quantities associated with the uranium isotopic composition included uncertainties from the certified value for CRM U030-A, measurement precision, and background corrections associated with the analytical techniques.

The CRM was produced by dissolving uranium metal in a single batch and container, with extensive mixing of the resultant solution followed by dispensation into individual bottles. Subsequent measurements of a random sampling of the total lot produced did not indicate any inhomogeneity in uranium concentration or isotopic composition. The minimum sample sizes taken from packaged units and measured were 30 mg U by titration and 1 μg U by TIMS. The NBL makes no recommendation as to the minimum sample size to be used to ensure concentration or isotopic homogeneity.

Users are cautioned that once the vial is opened, the uranium concentration and/or isotopic composition of the material may be affected by evaporative losses or environmental contamination. User's should take appropriate precautions to safeguard the material before, during and after use to ensure valid certificate values.

Recommended Procedure for Ampoule Handling and Dispensing of Solution

1. The ampoule contains a strongly acidic solution of uranium. Appropriate precautions should be taken.

2. Before opening the ampoule, ensure that any dried uranium or condensed liquid in the neck or body of the ampoule is re-dissolved into solution. This can be accomplished by inverting the ampoule repeatedly.

3. The glass ampoules are scored at the neck for ease of opening. However, glass burrs and fragments pose a cut hazard to anyone opening the ampoules. Appropriate precautions should be taken.

4. Lightly moisten the scored line on the neck with distilled water to help ensure a clean break at the score.

5. Because of the narrow neck of the ampoule it may be difficult or impossible to pour the solution out. Here is one possible method:

    a. Obtain approximately 12-cm length of plastic capillary tubing (e.g. i.d. 0f 0.1", o.d. of 0.16").
    b. Insert one end of the capillary tubing fully into the ampoule
    c. Fold the remaining length of tubing along the outside of the ampoule, ensuring that the tube is not crimped and will allow the free flow of air through the tube and into the ampoule.
    d. Holding the ampoule and tubing in one hand, and a beaker or dispensing bottle in another, invert the ampoule over the container allowing the solution to drain into it.
    e. The capillary tubing allows air to flow into the ampoule, eliminating the "airlock" created by the narrow neck of the open ampoule.

6. The user should be wary of evaporative losses once the ampoule is opened, and prevent uranium contamination of the sample. It is recommended that the entire solution be accurately weighed and aliquanted as soon as possible after opening the sample. Precautions should be taken (clean glass/plastic ware, air filtration, etc) to prevent uranium contamination of the CRM with subsequent perturbation of the isotopic composition.

Reagent

UNAT_00009

St. Louis Radiological Standard Reverification Form

Standard ID Number: UNAT_00009
True Value = 70.69 DPM/L or g
Date Analyzed: 5/28/2014

Radionuclide: U-234

	Replicates	
#1	66.479	DPM/L or g
#2	72.6	DPM/L or g
#3	69.32	DPM/L or g

371928
ID: UNAT_00009
Exp: 05/28/15 Prpd: SCB Crl: 05/23/14
UNAT spike

Mean = 69.46633

1 sigma = 3.063123 1.96 sigma = 6.00372

True Value minus 5% = 67.1555 (True Value - 5%)
True Value plus 5% = 74.2245 (True Value + 5%)

Accuracy:
Mean value within 5% of Certified (True) Value? **Yes** **(Acceptance Criteria)**

Precision:
1.96 sigma Value Within 10% of Mean Value? **Yes** **(Acceptance Criteria)**

Standard Reverification Acceptable? **Yes**

Note: Criteria for reverification of radiological standards is taken from the DOE QSAS and LANL Statements of Work

Reviewed By/Date: Micha L. Korrinhizer 5/29/2014

SOP Reference: STL-QA-0002, Current Revision

St. Louis Radiological Standard Reverification Form

Standard ID Number: UNAT_00009
True Value = 3.37 DPM/L or g
Date Analyzed: 5/28/2014

Radionuclide: U-235

	Replicates	
#1	4.075	DPM/L or g
#2	3.273	DPM/L or g
#3	4.276	DPM/L or g

Mean = 3.874667

1 sigma = 0.530662 1.96 sigma = 1.040098

True Value minus 5% = 3.2015 (True Value - 5%)
True Value plus 5% = 3.5385 (True Value + 5%)

Accuracy:
Mean value within 5% of Certified (True) Value? **No** **(Acceptance Criteria)**

Precision:
1.96 sigma Value Within 10% of Mean Value? **No** **(Acceptance Criteria)**

Standard Reverification Acceptable? **No**

Note: Criteria for reverification of radiological standards is taken from the DOE QSAS and LANL Statements of Work

Reviewed By/Date: Micha L. Korrinhizer 5/29/2014

SOP Reference: STL-QA-0002, Current Revision

St. Louis Radiological Standard Reverification Form

Standard ID Number: UNAT_00009
True Value = 72.264 DPM/L or g
Date Analyzed: 5/28/2014

Radionuclide: U-238

	Replicates	
#1	69.37	DPM/L or g
#2	73.023	DPM/L or g
#3	73.168	DPM/L or g

Mean = 71.85367

1 sigma = 2.15214 1.96 sigma = 4.218194

True Value minus 5% = 68.6508 (True Value - 5%)
True Value plus 5% = 75.8772 (True Value + 5%)

Accuracy:
Mean value within 5% of Certified (True) Value? **Yes** **(Acceptance Criteria)**

Precision:
1.96 sigma Value Within 10% of Mean Value? **Yes** **(Acceptance Criteria)**

Standard Reverification Acceptable? **Yes**

Note: Criteria for reverification of radiological standards is taken from the DOE QSAS and LANL Statements of Work

Reviewed By/Date: Micha L. Korrinhizer 5/29/2014

SOP Reference: STL-QA-0002, Current Revision

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

UNIAT Spike Verification

960mins.
LL

Actinide Prep

Batch No. : —

Balance ID : _____

No.	Sample Number	Aliquot (g / mL)	Crucible ID	Dilution
43 1	Verification 1	0.1		
44 2	1 2	1		
45 3	3			
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
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16				
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22				
23				
24				

Note: If a section below is not used, marked the N/A box and initial & date next to the N/A.
i.e. Mark the N/A box if a tracer is not added to the sample(s) then initial and date next to the N/A

Tracer ☒ N/A SUB 5/27/14 (Initials / Date)

Isotope : U-232
Std Sol'n No. : U-232-000210
Vol (mL) : 0.1
Ref Activity (dpm/mL) : 82.247
Act Ref Date : 08.25.11

Samples Spiked and Traced By: SUB 5/27/14 (Initials / Date)

Verification Signature & Date: MS 5/27/14 (Initials / Date)

LCS Standard ☐ N/A SUB 5/27/14 (Initials / Date)

Isotope : UNIAT
Std Sol'n ID. : UNIAT_010009
Vol (mL) : 0.1
Ref Activity (dpm/mL) : 234: 70.69
235: 3.370
238: 72.264
Act Ref Date : 03.30.09

SOP's applied in preparing these samples. Mark box to left for all that apply:

☐ ST-RC-0003 Rev.	☐ ST-RC-0040 Rev.	☐ ST-RC-0110 Rev.
☐ ST-RC-0004 Rev.	☐ ST-RC-0041 Rev.	☐ ST-RC-0120 Rev.
☐ ST-RC-0014 Rev.	☐ ST-RC-0050 Rev.	☐ ST-RC-0232 Rev.
☐ ST-RC-0020 Rev.	☐ ST-RC-0090 Rev.	☐ ST-RC-0238 Rev.
☐ ST-RC-0021 Rev.	☐ ST-RC-0100 Rev.	☐ ST-RC-0240 Rev.
		☐ ST-RC-0241 Rev.
		☐ ST-RC-0242 Rev.
		☐ ST-RC-5016 Rev.
		☐
		☐

Isotope(s)

αβ ☐	Iso Pu ☐	Tc-99 ☐	Iso Cm ☐
Iso Am ☐	Ra ☐	Iso Th ☐	Pu-241 ☐
KPA ☐	Sr ☐	Iso U ☑	Th-229 ☐
Np ☐	TAR ☐	C-14 ☐	Cl-36 ☐

Count Time	Matrix
Long Count ☐	Soil ☐
Short Count ☐	H_2O ☐

Prepared By : SUB
Date : 5/27/14

Reviewed by: MK
Date: 5/29/14

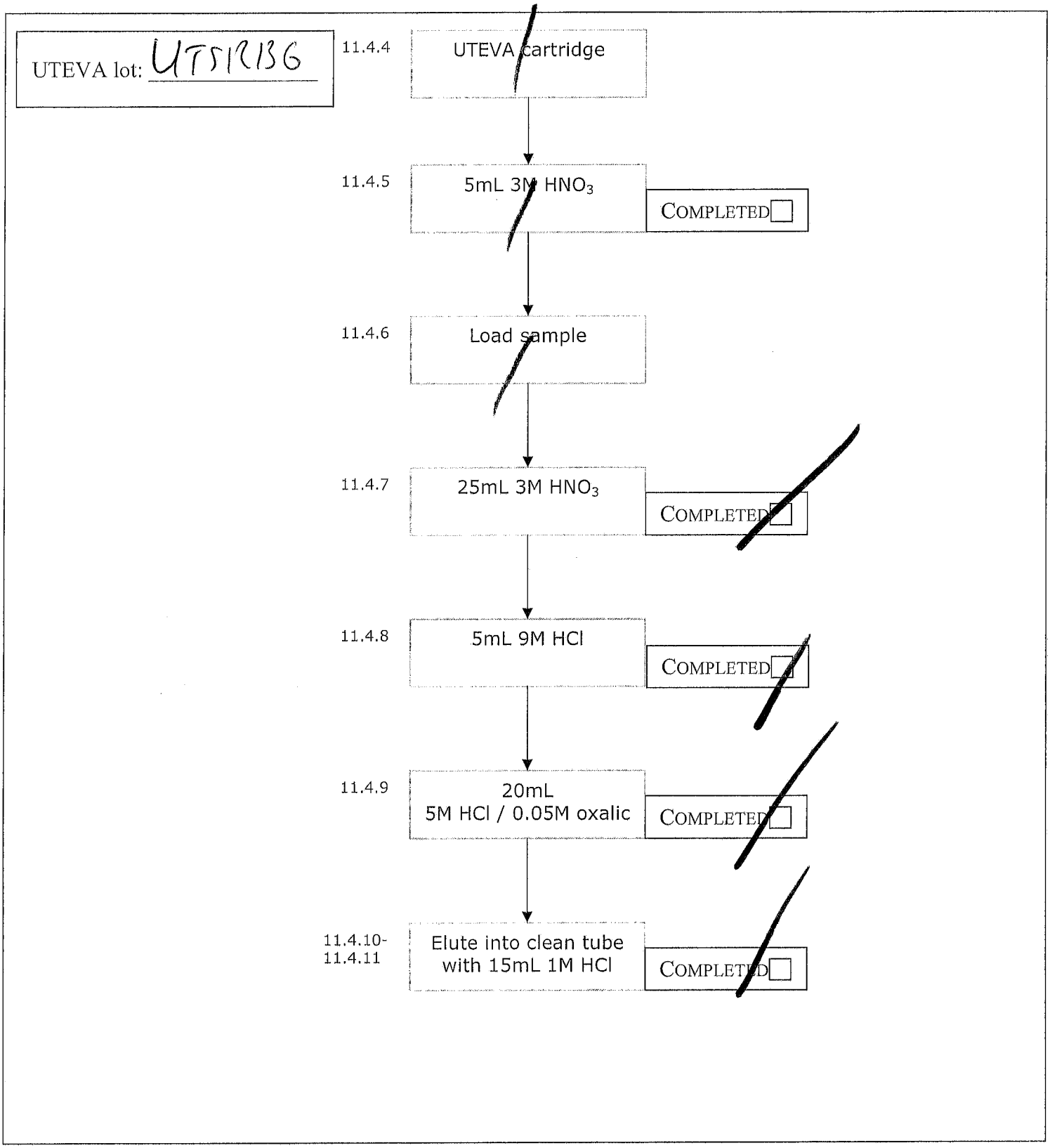
\\Slsvr01\RAD\MasterForms\RAD-0045 Rev(3)

Uranium only via UTEVA

ST-RC-0238

Batch: U Verf

*All rinses should flow at 1 mL/minute (only 3M HNO_3 may be done at 3 mL/minute)



TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Reagent ID: UNAT_00009

Description:	UNAT spike	Expiration Date:	05/23/2015
No. of Bottles:	1	Laboratory:	TestAmerica St. Louis
Storage Location:	RAD Actinide STDs	Prepared By:	Bernsen, Sarah C
Reagent Volume:	200.000 mL	Solvent:	1M HNO3
Creation Date:	05/23/2014	Solvent Lot:	n/a
Container(s):	371928		
Comment:			

Reagent Analyte Information

Analyte	Source ID	Source Exp. Date	Source Conc.	Source Conc. Units	Final Conc.	Final Conc. Units
U-234	UNAT Parent_00001	03/30/2058	706.91200	dpm/mL	70.69123	dpm/mL
U-235	UNAT Parent_00001	03/30/2058	33.70600	dpm/mL	3.37064	dpm/mL
U-238	UNAT Parent_00001	03/30/2058	722.65000	dpm/mL	72.26499	dpm/mL

Source Reagents

Reagent	Description	Type	Expiration	Vendor	Vendor Lot #	Vendor Cat Lot #	Volume Used	Volume Units
UNAT Parent_00001	UNAT Parent		03/30/58				20.00000	mL

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
8:28:03AM 5/29/2014

Sample

Sample Name: Verification-1
SampleType: Sample
:
Sample Collection Date:

Spectrum #1 Analysis #1
Sample Volume : 0.1000mL
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: UNAT_00009 Spike Ver
AnalysisID: 609171

Analyst: 60040

Tracer

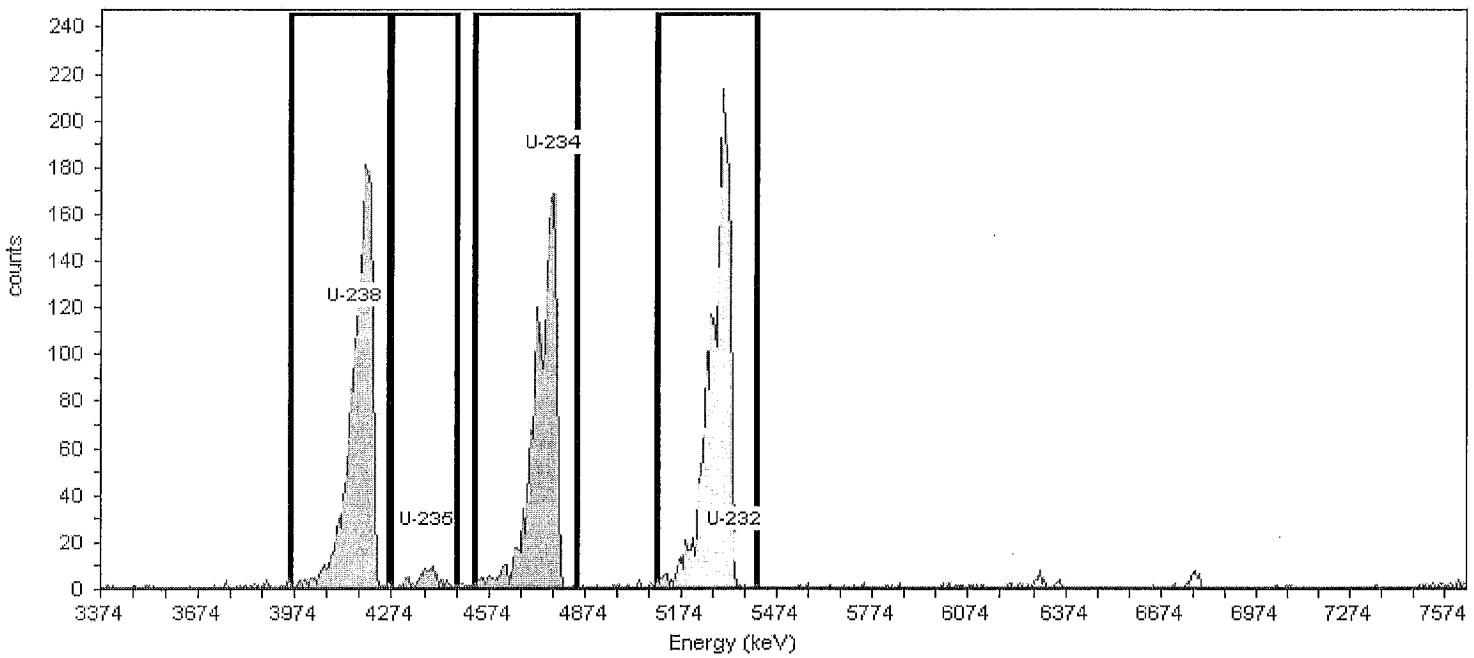
Tracer Name: U-232_00026
Tracer Activity: 82.25 DPM/mL x (Vol.)0.10 mL = 8.22 DPM
Tracer Ref. Date: 8/25/2011 11:00:51AM

Tracer Nuclide: U-232
Tracer Recovery: 99.08%

Acquisition

Detector: AV43
Serial Number: 49-190X4
Acquisition Start Date: 5/28/2014 4:07:16PM
Live Time: 960.00 min.
Real Time: 960.02 min.
Background Date: 5/15/2014 1:18:19AM
Background Info: Sample: ICB;AV43; Det: AV43; Spectrum #1; May-15-2014 01:18

Calibration Name: IC-9794;AV43-20140505
Calibration Date: 5/5/2014 10:09:47PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 25.74% +/- 0.32% TPU(2 sigma)



General Analysis

Analysis Method: ROI Analysis, Set Name = UROI
Decay Correction: 5/28/2014 4:04:57PM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Uranium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
U-238	4157.5	4,196.0	-38.5	3956.1	4261.9	65.7	100.0	1698	0.0000	1698.00	69.370	DPM/mL
U-235	4381.2	4,396.0	-14.8	4269.3	4470.7	54.6	80.2	80	0.0000	80.00	4.075	DPM/mL
U-234	4776.4	4,775.8	0.6	4530.3	4851.0	81.7	99.8	1625	1.0000	1624.00	66.479	DPM/mL
U-232	5343.2	5,320.3	22.9	5097.1	5410.3	72.8	100.1	1962	0.0000	1962.00	81.486	DPM/mL

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
8:28:17AM 5/29/2014

Sample

Sample Name: Verification-2
SampleType: Sample
:
Sample Collection Date:

Spectrum #1 Analysis #1
Sample Volume : 0.1000mL
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: UNAT_00009 Spike Ver
AnalysisID: 609172

Analyst: 60040

Tracer

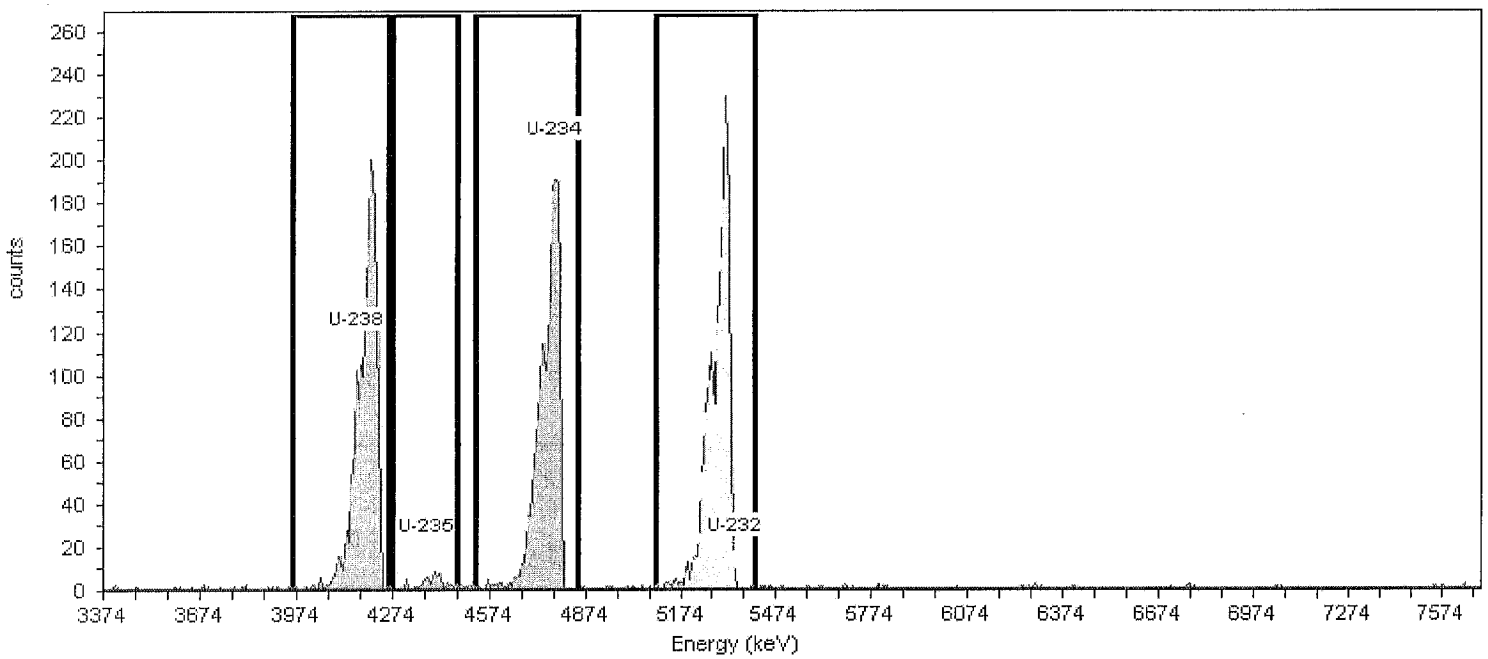
Tracer Name: U-232_00026
Tracer Activity: 82.25 DPM/mL x (Vol.)0.10 mL = 8.22 DPM
Tracer Ref. Date: 8/25/2011 11:00:51AM

Tracer Nuclide: U-232
Tracer Recovery: 90.45%

Acquisition

Detector: AV44
Serial Number: 50-051JJ1
Acquisition Start Date: 5/28/2014 4:07:17PM
Live Time: 960.00 min.
Real Time: 960.02 min.
Background Date: 5/15/2014 1:18:20AM
Background Info: Sample: ICB;AV44; Det: AV44; Spectrum #1; May-15-2014 01:18

Calibration Name: IC-9795;AV44-20140505
Calibration Date: 5/5/2014 10:09:57PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 26.32% +/- 0.35% TPU(2 sigma)



General Analysis

Analysis Method: ROI Analysis, Set Name = UROI
Decay Correction: 5/28/2014 4:04:57PM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Uranium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
U-238	4157.5	4,196.0	-38.5	3956.1	4261.9	53.8	100.0	1671	2.0000	1669.00	73.023	DPM/mL
U-235	4381.2	4,396.0	-14.8	4269.3	4470.7	52.6	80.2	61	1.0000	60.00	3.273	DPM/mL
U-234	4776.4	4,775.8	0.6	4530.3	4851.0	67.5	99.8	1659	3.0000	1656.00	72.600	DPM/mL
U-232	5343.2	5,320.3	22.9	5097.1	5410.3	63.4	100.1	1840	8.0000	1832.00	74.394	DPM/mL

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
8:28:26AM 5/29/2014

Sample

Sample Name: Verification-3
SampleType: Sample
:
Sample Collection Date:

Spectrum #1 Analysis #1
Sample Volume : 0.1000mL
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: UNAT_00009 Spike Ver
AnalysisID: 609173

Analyst: 60040

Tracer

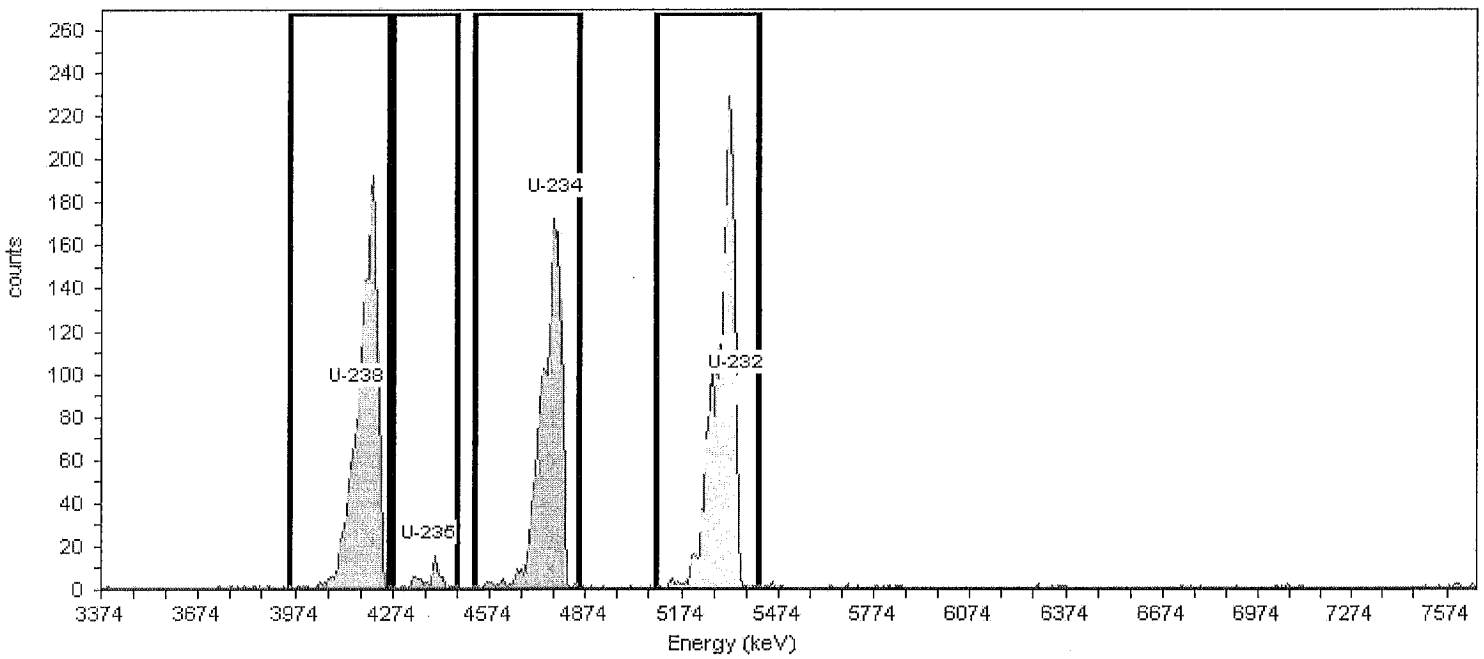
Tracer Name: U-232_00026
Tracer Activity: 82.25 DPM/mL x (Vol.)0.10 mL = 8.22 DPM
Tracer Ref. Date: 8/25/2011 11:00:51AM

Tracer Nuclide: U-232
Tracer Recovery: 93.24%

Acquisition

Detector: AV45
Serial Number: 48-158FF2
Acquisition Start Date: 5/28/2014 4:07:19PM
Live Time: 960.00 min.
Real Time: 960.02 min.
Background Date: 5/15/2014 1:18:21AM
Background Info: Sample: ICB;AV45; Det: AV45; Spectrum #1; May-15-2014 01:18

Calibration Name: IC-9817;AV45-20140505
Calibration Date: 5/5/2014 10:10:03PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 26.06% +/- 0.31% TPU(2 sigma)



General Analysis

Analysis Method: ROI Analysis, Set Name = UROI
Decay Correction: 5/28/2014 4:04:57PM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Uranium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
U-238	4157.5	4,196.0	-38.5	3956.1	4261.9	58.4	100.0	1710	3.0000	1707.00	73.168	DPM/mL
U-235	4381.2	4,396.0	-14.8	4269.3	4470.7	24.2	80.2	80	0.0000	80.00	4.276	DPM/mL
U-234	4776.4	4,775.8	0.6	4530.3	4851.0	72.2	99.8	1616	2.0000	1614.00	69.320	DPM/mL
U-232	5343.2	5,320.3	22.9	5097.1	5410.3	64.3	100.1	1875	5.0000	1870.00	76.687	DPM/mL

METALS

COVER PAGE
METALS

Lab Name: TestAmerica St. Louis Job Number: 160-9451-1

SDG No.:

Project: START Site in New Mexico

Client Sample ID	Lab Sample ID
BG03-20141114-21	160-9451-1
BG04-20141114-21	160-9451-2
BG05-20141114-21	160-9451-3
N1-20141114-21	160-9451-4

Comments:

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: BG03-20141114-21 Lab Sample ID: 160-9451-1

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG ID.:

Matrix: Water Date Sampled: 11/14/2014 10:30

Reporting Basis: WET Date Received: 11/15/2014 08:45

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	3700	2000	220	ug/L			10	6010C
7440-36-0	Antimony	ND	100	37	ug/L			10	6010C
7440-38-2	Arsenic	ND	100	18	ug/L			10	6010C
7440-39-3	Barium	640	500	21	ug/L			10	6010C
7440-42-8	Boron	ND	500	72	ug/L			10	6010C
7440-41-7	Beryllium	ND	50	2.8	ug/L			10	6010C
7440-43-9	Cadmium	ND	50	3.4	ug/L			10	6010C
7440-70-2	Calcium	64000	10000	540	ug/L			10	6010C
7440-47-3	Chromium	ND	100	34	ug/L			10	6010C
7440-48-4	Cobalt	ND	500	27	ug/L			10	6010C
7440-50-8	Copper	25	250	21	ug/L	J		10	6010C
7439-89-6	Iron	5100	1000	130	ug/L			10	6010C
7439-92-1	Lead	15	100	6.0	ug/L	J		10	6010C
7439-95-4	Magnesium	8800	10000	510	ug/L	J		10	6010C
7439-96-5	Manganese	580	150	10	ug/L			10	6010C
7440-02-0	Nickel	ND	400	26	ug/L			10	6010C
7439-98-7	Molybdenum	ND	400	19	ug/L			10	6010C
7440-09-7	Potassium	ND	50000	4600	ug/L			10	6010C
7782-49-2	Selenium	ND	150	21	ug/L			10	6010C
7440-22-4	Silver	ND	100	9.9	ug/L			10	6010C
7723-14-0	Phosphorus	210	2500	140	ug/L	J		10	6010C
7440-23-5	Sodium	22000	10000	1100	ug/L			10	6010C
7440-28-0	Thallium	27	200	24	ug/L	J	B	10	6010C
7440-62-2	Vanadium	ND	500	44	ug/L			10	6010C
7440-66-6	Zinc	94	200	83	ug/L	J	B	10	6010C
7440-21-3	Silicon	27000	4000	200	ug/L			10	6010C
7440-31-5	Tin	ND	1000	50	ug/L			10	6010C
7440-32-6	Titanium	ND	200	13	ug/L			10	6010C
7440-61-1	Uranium	500	5000	260	ug/L	J	B	10	6010C
7439-97-6	Mercury	0.26	0.20	0.060	ug/L			1	7470A

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS - DISSOLVED

Client Sample ID: BG03-20141114-21 Lab Sample ID: 160-9451-1

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG ID.:

Matrix: Water Date Sampled: 11/14/2014 10:30

Reporting Basis: WET Date Received: 11/15/2014 08:45

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	5100	2000	220	ug/L			10	6010C
7440-36-0	Antimony	ND	100	37	ug/L			10	6010C
7440-38-2	Arsenic	ND	100	18	ug/L			10	6010C
7440-39-3	Barium	320	500	21	ug/L	J		10	6010C
7440-41-7	Beryllium	ND	50	2.8	ug/L			10	6010C
7440-42-8	Boron	83	500	72	ug/L	J		10	6010C
7440-43-9	Cadmium	ND	50	3.4	ug/L			10	6010C
7440-70-2	Calcium	58000	10000	540	ug/L			10	6010C
7440-47-3	Chromium	ND	100	34	ug/L			10	6010C
7440-48-4	Cobalt	ND	500	27	ug/L			10	6010C
7440-50-8	Copper	29	250	21	ug/L	J		10	6010C
7439-89-6	Iron	4500	1000	130	ug/L			10	6010C
7439-92-1	Lead	17	100	6.0	ug/L	J	B	10	6010C
7439-95-4	Magnesium	8000	10000	510	ug/L	J		10	6010C
7439-96-5	Manganese	170	150	10	ug/L			10	6010C
7439-98-7	Molybdenum	ND	400	19	ug/L			10	6010C
7440-02-0	Nickel	ND	400	26	ug/L			10	6010C
7723-14-0	Phosphorus	ND	2500	140	ug/L			10	6010C
7440-09-7	Potassium	4900	50000	4600	ug/L	J		10	6010C
7782-49-2	Selenium	ND	150	21	ug/L			10	6010C
7440-21-3	Silicon	29000	4000	200	ug/L			10	6010C
7440-22-4	Silver	ND	100	9.9	ug/L			10	6010C
7440-23-5	Sodium	21000	10000	1100	ug/L			10	6010C
7440-28-0	Thallium	ND	200	24	ug/L			10	6010C
7440-31-5	Tin	ND	1000	50	ug/L			10	6010C
7440-32-6	Titanium	59	200	13	ug/L	J		10	6010C
7440-61-1	Uranium	ND	5000	260	ug/L			10	6010C
7440-62-2	Vanadium	ND	500	44	ug/L			10	6010C
7440-66-6	Zinc	ND	200	83	ug/L			10	6010C
7439-97-6	Mercury	ND	0.20	0.060	ug/L			1	7470A

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: BG04-20141114-21 Lab Sample ID: 160-9451-2

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG ID.:

Matrix: Water Date Sampled: 11/14/2014 11:10

Reporting Basis: WET Date Received: 11/15/2014 08:45

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	2500	2000	220	ug/L			10	6010C
7440-36-0	Antimony	ND	100	37	ug/L			10	6010C
7440-38-2	Arsenic	ND	100	18	ug/L			10	6010C
7440-39-3	Barium	400	500	21	ug/L	J		10	6010C
7440-42-8	Boron	ND	500	72	ug/L			10	6010C
7440-41-7	Beryllium	ND	50	2.8	ug/L			10	6010C
7440-43-9	Cadmium	ND	50	3.4	ug/L			10	6010C
7440-70-2	Calcium	73000	10000	540	ug/L			10	6010C
7440-47-3	Chromium	ND	100	34	ug/L			10	6010C
7440-48-4	Cobalt	ND	500	27	ug/L			10	6010C
7440-50-8	Copper	36	250	21	ug/L	J		10	6010C
7439-89-6	Iron	3900	1000	130	ug/L			10	6010C
7439-92-1	Lead	8.0	100	6.0	ug/L	J		10	6010C
7439-95-4	Magnesium	10000	10000	510	ug/L			10	6010C
7439-96-5	Manganese	480	150	10	ug/L			10	6010C
7440-02-0	Nickel	ND	400	26	ug/L			10	6010C
7439-98-7	Molybdenum	ND	400	19	ug/L			10	6010C
7440-09-7	Potassium	ND	50000	4600	ug/L			10	6010C
7782-49-2	Selenium	23	150	21	ug/L	J		10	6010C
7440-22-4	Silver	ND	100	9.9	ug/L			10	6010C
7723-14-0	Phosphorus	280	2500	140	ug/L	J		10	6010C
7440-23-5	Sodium	31000	10000	1100	ug/L			10	6010C
7440-28-0	Thallium	30	200	24	ug/L	J	B	10	6010C
7440-62-2	Vanadium	ND	500	44	ug/L			10	6010C
7440-66-6	Zinc	ND	200	83	ug/L			10	6010C
7440-21-3	Silicon	28000	4000	200	ug/L			10	6010C
7440-31-5	Tin	ND	1000	50	ug/L			10	6010C
7440-32-6	Titanium	32	200	13	ug/L	J		10	6010C
7440-61-1	Uranium	280	5000	260	ug/L	J	B	10	6010C
7439-97-6	Mercury	0.33	0.20	0.060	ug/L			1	7470A

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS - DISSOLVED

Client Sample ID: BG04-20141114-21 Lab Sample ID: 160-9451-2

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG ID.:

Matrix: Water Date Sampled: 11/14/2014 11:10

Reporting Basis: WET Date Received: 11/15/2014 08:45

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	370	2000	220	ug/L	J		10	6010C
7440-36-0	Antimony	ND	100	37	ug/L			10	6010C
7440-38-2	Arsenic	ND	100	18	ug/L			10	6010C
7440-39-3	Barium	170	500	21	ug/L	J		10	6010C
7440-41-7	Beryllium	ND	50	2.8	ug/L			10	6010C
7440-42-8	Boron	ND	500	72	ug/L			10	6010C
7440-43-9	Cadmium	ND	50	3.4	ug/L			10	6010C
7440-70-2	Calcium	59000	10000	540	ug/L			10	6010C
7440-47-3	Chromium	ND	100	34	ug/L			10	6010C
7440-48-4	Cobalt	ND	500	27	ug/L			10	6010C
7440-50-8	Copper	ND	250	21	ug/L			10	6010C
7439-89-6	Iron	400	1000	130	ug/L	J		10	6010C
7439-92-1	Lead	17	100	6.0	ug/L	J	B	10	6010C
7439-95-4	Magnesium	6900	10000	510	ug/L	J		10	6010C
7439-96-5	Manganese	45	150	10	ug/L	J		10	6010C
7439-98-7	Molybdenum	ND	400	19	ug/L			10	6010C
7440-02-0	Nickel	ND	400	26	ug/L			10	6010C
7723-14-0	Phosphorus	ND	2500	140	ug/L			10	6010C
7440-09-7	Potassium	ND	50000	4600	ug/L			10	6010C
7782-49-2	Selenium	ND	150	21	ug/L			10	6010C
7440-21-3	Silicon	17000	4000	200	ug/L			10	6010C
7440-22-4	Silver	ND	100	9.9	ug/L			10	6010C
7440-23-5	Sodium	22000	10000	1100	ug/L			10	6010C
7440-28-0	Thallium	ND	200	24	ug/L			10	6010C
7440-31-5	Tin	ND	1000	50	ug/L			10	6010C
7440-32-6	Titanium	ND	200	13	ug/L			10	6010C
7440-61-1	Uranium	ND	5000	260	ug/L			10	6010C
7440-62-2	Vanadium	ND	500	44	ug/L			10	6010C
7440-66-6	Zinc	ND	200	83	ug/L			10	6010C
7439-97-6	Mercury	ND	0.20	0.060	ug/L			1	7470A

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: BG05-20141114-21 Lab Sample ID: 160-9451-3

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG ID.:

Matrix: Water Date Sampled: 11/14/2014 11:45

Reporting Basis: WET Date Received: 11/15/2014 08:45

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	1200	2000	220	ug/L	J		10	6010C
7440-36-0	Antimony	ND	100	37	ug/L			10	6010C
7440-38-2	Arsenic	ND	100	18	ug/L			10	6010C
7440-39-3	Barium	120	500	21	ug/L	J		10	6010C
7440-42-8	Boron	100	500	72	ug/L	J		10	6010C
7440-41-7	Beryllium	ND	50	2.8	ug/L			10	6010C
7440-43-9	Cadmium	ND	50	3.4	ug/L			10	6010C
7440-70-2	Calcium	56000	10000	540	ug/L			10	6010C
7440-47-3	Chromium	ND	100	34	ug/L			10	6010C
7440-48-4	Cobalt	ND	500	27	ug/L			10	6010C
7440-50-8	Copper	ND	250	21	ug/L			10	6010C
7439-89-6	Iron	1500	1000	130	ug/L			10	6010C
7439-92-1	Lead	ND	100	6.0	ug/L			10	6010C
7439-95-4	Magnesium	11000	10000	510	ug/L			10	6010C
7439-96-5	Manganese	160	150	10	ug/L			10	6010C
7440-02-0	Nickel	ND	400	26	ug/L			10	6010C
7439-98-7	Molybdenum	ND	400	19	ug/L			10	6010C
7440-09-7	Potassium	ND	50000	4600	ug/L			10	6010C
7782-49-2	Selenium	ND	150	21	ug/L			10	6010C
7440-22-4	Silver	ND	100	9.9	ug/L			10	6010C
7723-14-0	Phosphorus	ND	2500	140	ug/L			10	6010C
7440-23-5	Sodium	120000	10000	1100	ug/L			10	6010C
7440-28-0	Thallium	ND	200	24	ug/L			10	6010C
7440-62-2	Vanadium	ND	500	44	ug/L			10	6010C
7440-66-6	Zinc	ND	200	83	ug/L			10	6010C
7440-21-3	Silicon	17000	4000	200	ug/L			10	6010C
7440-31-5	Tin	ND	1000	50	ug/L			10	6010C
7440-32-6	Titanium	ND	200	13	ug/L			10	6010C
7440-61-1	Uranium	ND	5000	260	ug/L			10	6010C
7439-97-6	Mercury	0.35	0.20	0.060	ug/L			1	7470A

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS - DISSOLVED

Client Sample ID: BG05-20141114-21 Lab Sample ID: 160-9451-3

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG ID.:

Matrix: Water Date Sampled: 11/14/2014 11:45

Reporting Basis: WET Date Received: 11/15/2014 08:45

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	700	2000	220	ug/L	J		10	6010C
7440-36-0	Antimony	ND	100	37	ug/L			10	6010C
7440-38-2	Arsenic	ND	100	18	ug/L			10	6010C
7440-39-3	Barium	83	500	21	ug/L	J		10	6010C
7440-41-7	Beryllium	ND	50	2.8	ug/L			10	6010C
7440-42-8	Boron	120	500	72	ug/L	J		10	6010C
7440-43-9	Cadmium	ND	50	3.4	ug/L			10	6010C
7440-70-2	Calcium	56000	10000	540	ug/L			10	6010C
7440-47-3	Chromium	ND	100	34	ug/L			10	6010C
7440-48-4	Cobalt	ND	500	27	ug/L			10	6010C
7440-50-8	Copper	ND	250	21	ug/L			10	6010C
7439-89-6	Iron	650	1000	130	ug/L	J		10	6010C
7439-92-1	Lead	15	100	6.0	ug/L	J	B	10	6010C
7439-95-4	Magnesium	11000	10000	510	ug/L			10	6010C
7439-96-5	Manganese	99	150	10	ug/L	J		10	6010C
7439-98-7	Molybdenum	ND	400	19	ug/L			10	6010C
7440-02-0	Nickel	ND	400	26	ug/L			10	6010C
7723-14-0	Phosphorus	ND	2500	140	ug/L			10	6010C
7440-09-7	Potassium	ND	50000	4600	ug/L			10	6010C
7782-49-2	Selenium	ND	150	21	ug/L			10	6010C
7440-21-3	Silicon	14000	4000	200	ug/L			10	6010C
7440-22-4	Silver	ND	100	9.9	ug/L			10	6010C
7440-23-5	Sodium	110000	10000	1100	ug/L			10	6010C
7440-28-0	Thallium	ND	200	24	ug/L			10	6010C
7440-31-5	Tin	ND	1000	50	ug/L			10	6010C
7440-32-6	Titanium	13	200	13	ug/L	J		10	6010C
7440-61-1	Uranium	ND	5000	260	ug/L			10	6010C
7440-62-2	Vanadium	ND	500	44	ug/L			10	6010C
7440-66-6	Zinc	ND	200	83	ug/L			10	6010C
7439-97-6	Mercury	ND	0.20	0.060	ug/L			1	7470A

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: N1-20141114-21 Lab Sample ID: 160-9451-4

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG ID.:

Matrix: Water Date Sampled: 11/14/2014 12:45

Reporting Basis: WET Date Received: 11/15/2014 08:45

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	ND	200	22	ug/L			1	6010C
7440-36-0	Antimony	ND	10	3.7	ug/L			1	6010C
7440-38-2	Arsenic	ND	10	1.8	ug/L			1	6010C
7440-39-3	Barium	ND	50	2.1	ug/L			1	6010C
7440-42-8	Boron	ND	50	7.2	ug/L			1	6010C
7440-41-7	Beryllium	ND	5.0	0.28	ug/L			1	6010C
7440-43-9	Cadmium	ND	5.0	0.34	ug/L			1	6010C
7440-70-2	Calcium	150	1000	54	ug/L	J		1	6010C
7440-47-3	Chromium	ND	10	3.4	ug/L			1	6010C
7440-48-4	Cobalt	ND	50	2.7	ug/L			1	6010C
7440-50-8	Copper	ND	25	2.1	ug/L			1	6010C
7439-89-6	Iron	61	100	13	ug/L	J		1	6010C
7439-92-1	Lead	ND	10	0.60	ug/L			1	6010C
7439-95-4	Magnesium	ND	1000	51	ug/L			1	6010C
7439-96-5	Manganese	1.1	15	1.0	ug/L	J		1	6010C
7440-02-0	Nickel	ND	40	2.6	ug/L			1	6010C
7439-98-7	Molybdenum	ND	40	1.9	ug/L			1	6010C
7440-09-7	Potassium	ND	5000	460	ug/L			1	6010C
7782-49-2	Selenium	ND	15	2.1	ug/L			1	6010C
7440-22-4	Silver	ND	10	0.99	ug/L			1	6010C
7723-14-0	Phosphorus	ND	250	14	ug/L			1	6010C
7440-23-5	Sodium	ND	1000	110	ug/L			1	6010C
7440-28-0	Thallium	ND	20	2.4	ug/L			1	6010C
7440-62-2	Vanadium	4.4	50	4.4	ug/L	J		1	6010C
7440-66-6	Zinc	ND	20	8.3	ug/L			1	6010C
7440-21-3	Silicon	31	400	20	ug/L	J		1	6010C
7440-31-5	Tin	ND	100	5.0	ug/L			1	6010C
7440-32-6	Titanium	ND	20	1.3	ug/L			1	6010C
7440-61-1	Uranium	ND	500	26	ug/L			1	6010C
7439-97-6	Mercury	0.19	0.20	0.060	ug/L	J		1	7470A

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS - DISSOLVED

Client Sample ID: N1-20141114-21 Lab Sample ID: 160-9451-4

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG ID.:

Matrix: Water Date Sampled: 11/14/2014 12:45

Reporting Basis: WET Date Received: 11/15/2014 08:45

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	ND	200	22	ug/L			1	6010C
7440-36-0	Antimony	ND	10	3.7	ug/L			1	6010C
7440-38-2	Arsenic	ND	10	1.8	ug/L			1	6010C
7440-39-3	Barium	ND	50	2.1	ug/L			1	6010C
7440-41-7	Beryllium	ND	5.0	0.28	ug/L			1	6010C
7440-42-8	Boron	ND	50	7.2	ug/L			1	6010C
7440-43-9	Cadmium	ND	5.0	0.34	ug/L			1	6010C
7440-70-2	Calcium	110	1000	54	ug/L	J	^	1	6010C
7440-47-3	Chromium	ND	10	3.4	ug/L			1	6010C
7440-48-4	Cobalt	ND	50	2.7	ug/L			1	6010C
7440-50-8	Copper	ND	25	2.1	ug/L			1	6010C
7439-89-6	Iron	120	100	13	ug/L			1	6010C
7439-92-1	Lead	0.90	10	0.60	ug/L	J	B ^	1	6010C
7439-95-4	Magnesium	ND	1000	51	ug/L			1	6010C
7439-96-5	Manganese	1.3	15	1.0	ug/L	J		1	6010C
7439-98-7	Molybdenum	ND	40	1.9	ug/L			1	6010C
7440-02-0	Nickel	ND	40	2.6	ug/L		^	1	6010C
7723-14-0	Phosphorus	ND	250	14	ug/L		^	1	6010C
7440-09-7	Potassium	ND	5000	460	ug/L			1	6010C
7782-49-2	Selenium	ND	15	2.1	ug/L			1	6010C
7440-21-3	Silicon	25	400	20	ug/L	J		1	6010C
7440-22-4	Silver	ND	10	0.99	ug/L			1	6010C
7440-23-5	Sodium	ND	1000	110	ug/L			1	6010C
7440-28-0	Thallium	ND	20	2.4	ug/L		^	1	6010C
7440-31-5	Tin	ND	100	5.0	ug/L		^	1	6010C
7440-32-6	Titanium	ND	20	1.3	ug/L			1	6010C
7440-61-1	Uranium	ND	500	26	ug/L			1	6010C
7440-62-2	Vanadium	ND	50	4.4	ug/L			1	6010C
7440-66-6	Zinc	ND	20	8.3	ug/L			1	6010C
7439-97-6	Mercury	ND	0.20	0.060	ug/L			1	7470A

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

ICV Source: ICP ICV_00014 Concentration Units: ug/L

CCV Source: ICP CAL2/CCV_00032

Analyte	ICV 160-160013/5 11/26/2014 07:10				CCV 160-160013/11 11/26/2014 07:33				CCV 160-160013/43 11/26/2014 09:36			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Aluminum	48900		50000	98	49200		50000	98	48600		50000	97
Antimony	997		1000	100	991		1000	99	966		1000	97
Arsenic	4880		5000	98	4980		5000	100	4820		5000	96
Barium	4960		5000	99	4970		5000	99	4960		5000	99
Beryllium	4950		5000	99	5020		5000	100	4920		5000	98
Boron	5080		5000	102	4960		5000	99	5130		5000	103
Cadmium	4990		5000	100	5000		5000	100	4810		5000	96
Calcium	51600		50000	103	50600		50000	101	49500		50000	99
Chromium	5020		5000	100	5040		5000	101	4930		5000	99
Cobalt	5150		5000	103	5050		5000	101	4820		5000	96
Copper	4950		5000	99	4990		5000	100	4820		5000	96
Iron	49700		50000	99	49700		50000	99	50500		50000	101
Lead	5070		5000	101	5050		5000	101	4880		5000	98
Magnesium	48800		50000	98	49200		50000	98	48000		50000	96
Manganese	4910		5000	98	4970		5000	99	4940		5000	99
Molybdenum	1010		1000	101	995		1000	100	976		1000	98
Nickel	5060		5000	101	5060		5000	101	4860		5000	97
Phosphorus	5270		5000	105	51200		50000	102	48800		50000	98
Potassium	49200		50000	98	49200		50000	98	49500		50000	99
Selenium	999		1000	100	1000		1000	100	970		1000	97
Silicon	5230		5000	105	4910		5000	98	4940		5000	99
Silver	974		1000	97	987		1000	99	928		1000	93
Sodium	49300		50000	99	49600		50000	99	50400		50000	101
Thallium	1020		1000	102	1020		1000	102	968		1000	97
Tin	5030		5000	101	5030		5000	101	4850		5000	97
Titanium	4980		5000	100	4950		5000	99	4940		5000	99
Uranium	4970		5000	99	5000		5000	100	4920		5000	98
Vanadium	4790		5000	96	4970		5000	99	4860		5000	97
Zinc	5020		5000	100	5040		5000	101	4880		5000	98

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

ICV Source: ICP ICV_00014 Concentration Units: ug/L

CCV Source: ICP CAL2/CCV_00032

Analyte	CCV 160-160013/55 11/26/2014 11:28				CCV 160-160013/63 11/26/2014 11:59							
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Aluminum	49800		50000	100	49000		50000	98				
Antimony	986		1000	99	968		1000	97				
Arsenic	4930		5000	99	4830		5000	97				
Barium	5050		5000	101	4970		5000	99				
Beryllium	5060		5000	101	5040		5000	101				
Boron	5190		5000	104	5090		5000	102				
Cadmium	4970		5000	99	4860		5000	97				
Calcium	50300		50000	101	49100		50000	98				
Chromium	4980		5000	100	4910		5000	98				
Cobalt	4990		5000	100	4890		5000	98				
Copper	4970		5000	99	4870		5000	97				
Iron	51500		50000	103	50400		50000	101				
Lead	4990		5000	100	4880		5000	98				
Magnesium	49600		50000	99	48500		50000	97				
Manganese	5110		5000	102	5010		5000	100				
Molybdenum	993		1000	99	973		1000	97				
Nickel	5010		5000	100	4900		5000	98				
Phosphorus	50500		50000	101	49400		50000	99				
Potassium	49800		50000	100	49000		50000	98				
Selenium	988		1000	99	974		1000	97				
Silicon	5120		5000	102	5040		5000	101				
Silver	973		1000	97	958		1000	96				
Sodium	50300		50000	101	49500		50000	99				
Thallium	1010		1000	101	981		1000	98				
Tin	4980		5000	100	4880		5000	98				
Titanium	5050		5000	101	4950		5000	99				
Uranium	4930		5000	99	4880		5000	98				
Vanadium	5040		5000	101	4960		5000	99				
Zinc	5000		5000	100	4900		5000	98				

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

ICV Source: ICP ICV_00015 Concentration Units: ug/L

CCV Source: ICP CAL2/CCV_00033

Analyte	ICV 160-161515/5 12/05/2014 12:26				CCV 160-161515/11 12/05/2014 12:49				CCV 160-161515/61 12/05/2014 16:22			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Aluminum	49300		50000	99	49300		50000	99	46900		50000	94
Antimony	988		1000	99	988		1000	99	964		1000	96
Arsenic	4820		5000	96	4980		5000	100	4880		5000	98
Barium	4900		5000	98	4970		5000	99	4700		5000	94
Beryllium	4880		5000	98	5050		5000	101	4760		5000	95
Boron	5000		5000	100	5010		5000	100	4750		5000	95
Cadmium	4930		5000	99	4970		5000	99	4880		5000	98
Calcium	50300		50000	101	50300		50000	101	50500		50000	101
Chromium	5010		5000	100	5030		5000	101	4970		5000	99
Cobalt	5050		5000	101	5030		5000	101	4980		5000	100
Copper	4930		5000	99	4970		5000	99	4850		5000	97
Iron	49700		50000	99	50100		50000	100	48600		50000	97
Lead	5010		5000	100	5060		5000	101	5030		5000	101
Magnesium	48100		50000	96	49200		50000	98	48900		50000	98
Manganese	4920		5000	98	5010		5000	100	4870		5000	97
Molybdenum	1020		1000	102	996		1000	100	985		1000	98
Nickel	4960		5000	99	5050		5000	101	5010		5000	100
Phosphorus	5160		5000	103	50900		50000	102	50300		50000	101
Potassium	49400		50000	99	50000		50000	100	48000		50000	96
Selenium	974		1000	97	993		1000	99	971		1000	97
Silicon	5190		5000	104	4930		5000	99	4730		5000	95
Silver	973		1000	97	980		1000	98	952		1000	95
Sodium	48700		50000	97	50000		50000	100	47400		50000	95
Thallium	999		1000	100	1020		1000	102	1010		1000	101
Tin	4970		5000	99	5040		5000	101	5020		5000	100
Titanium	4980		5000	100	4990		5000	100	4780		5000	96
Uranium	5020		5000	100	4990		5000	100	4840		5000	97
Vanadium	4790		5000	96	5000		5000	100	4830		5000	97
Zinc	4930		5000	99	5000		5000	100	4930		5000	99

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

ICV Source: ICP ICV_00015 Concentration Units: ug/L

CCV Source: ICP CAL2/CCV_00033

Analyte	CCV 160-161515/73 12/05/2014 17:08				CCV 160-161515/85 12/05/2014 17:54							
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Aluminum	49100		50000	98	49800		50000	100				
Antimony	1020		1000	102	1070		1000	107				
Arsenic	5160		5000	103	5420		5000	108				
Barium	4940		5000	99	5030		5000	101				
Beryllium	5040		5000	101	5090		5000	102				
Boron	4960		5000	99	5040		5000	101				
Cadmium	5130		5000	103	5430		5000	109				
Calcium	52900		50000	106	55500		50000	111				
Chromium	5170		5000	103	5490		5000	110				
Cobalt	5230		5000	105	5500		5000	110				
Copper	5110		5000	102	5410		5000	108				
Iron	51000		50000	102	51600		50000	103				
Lead	5280		5000	106	5540		5000	111				
Magnesium	50700		50000	101	52400		50000	105				
Manganese	5060		5000	101	5170		5000	103				
Molybdenum	1040		1000	104	1090		1000	109				
Nickel	5260		5000	105	5530		5000	111				
Phosphorus	53000		50000	106	55700		50000	111				
Potassium	50400		50000	101	51100		50000	102				
Selenium	1030		1000	103	1080		1000	108				
Silicon	4940		5000	99	5020		5000	100				
Silver	992		1000	99	1060		1000	106				
Sodium	49600		50000	99	50400		50000	101				
Thallium	1060		1000	106	1120		1000	112				
Tin	5270		5000	105	5530		5000	111				
Titanium	5010		5000	100	5080		5000	102				
Uranium	5030		5000	101	5390		5000	108				
Vanadium	5020		5000	100	5140		5000	103				
Zinc	5180		5000	104	5460		5000	109				

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

ICV Source: Hg QC Int._00449 Concentration Units: ug/L

CCV Source: Hg QC Int._00449

Analyte	ICV 160-161064/7 12/04/2014 10:16				CCV 160-161064/9 12/04/2014 10:25				CCV 160-161064/21 12/04/2014 10:54			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Mercury	5.35		5.00	107	5.89		5.00	118	5.90		5.00	118

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

ICV Source: Hg QC Int._00449 Concentration Units: ug/L

CCV Source: Hg QC Int._00449

Analyte	CCV 160-161064/33 12/04/2014 11:25											
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Mercury	5.72		5.00	114								

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

ICV Source: Hg QC Int._00451 Concentration Units: ug/L

CCV Source: Hg QC Int._00451

Analyte	ICV 160-161529/7 12/06/2014 11:36				CCV 160-161529/56 12/06/2014 13:52				CCV 160-161529/68 12/06/2014 14:21			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Mercury	5.06		5.00	101	5.23		5.00	105	5.24		5.00	105

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2B-IN
CRQL CHECK STANDARD
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Method: 6010C Instrument ID: ICP6500

Lab Sample ID: CRI 160-160013/7 Concentration Units: ug/L

CRQL Check Standard Source: ICP CAL1/LLC_00019

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Aluminum	200	188	J	94	70-130
Antimony	10.0	10.0		100	70-130
Arsenic	10.0	10.6		106	70-130
Barium	50.0	49.7	J	99	70-130
Beryllium	5.00	5.20		104	70-130
Boron	50.0	65.0		130	70-130
Cadmium	5.00	5.10		102	70-130
Calcium	1000	1110		111	70-130
Chromium	10.0	9.40	J	94	70-130
Cobalt	50.0	53.9		108	70-130
Copper	25.0	28.3		113	70-130
Iron	100	104		104	70-130
Lead	10.0	8.00	J	80	70-130
Magnesium	1000	979	J	98	70-130
Manganese	15.0	15.1		101	70-130
Molybdenum	40.0	41.1		103	70-130
Nickel	40.0	43.6		109	70-130
Potassium	5000	4860	J	97	70-130
Selenium	15.0	14.8	J	99	70-130
Phosphorus	250	252		101	70-130
Silver	10.0	9.20	J	92	70-130
Sodium	1000	987	J	99	70-130
Thallium	20.0	25.3		127	70-130
Silicon	400	396	J	99	70-130
Tin	100	103		103	70-130
Titanium	20.0	20.4		102	70-130
Vanadium	50.0	50.6		101	70-130
Uranium	500	542		108	70-130
Zinc	20.0	21.8		109	70-130

Lab Sample ID: CRI 160-161515/7 Concentration Units: ug/L

CRQL Check Standard Source: ICP CAL1/LLC_00020

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Aluminum	200	200		100	70-130

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IIB-IN

2B-IN
CRQL CHECK STANDARD
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Method: 6010C Instrument ID: ICP6500

Lab Sample ID: CRI 160-161515/7 Concentration Units: ug/L

CRQL Check Standard Source: ICP CAL1/LLC_00020

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Antimony	10.0	11.0		110	70-130
Arsenic	10.0	10.4		104	70-130
Barium	50.0	49.4	J	99	70-130
Beryllium	5.00	5.20		104	70-130
Boron	50.0	56.6		113	70-130
Cadmium	5.00	5.20		104	70-130
Calcium	1000	1130		113	70-130
Chromium	10.0	10.4		104	70-130
Cobalt	50.0	55.4		111	70-130
Copper	25.0	26.8		107	70-130
Iron	100	104		104	70-130
Lead	10.0	12.1		121	70-130
Magnesium	1000	968	J	97	70-130
Manganese	15.0	15.2		101	70-130
Molybdenum	40.0	42.5		106	70-130
Nickel	40.0	44.8		112	70-130
Potassium	5000	4920	J	98	70-130
Selenium	15.0	15.5		103	70-130
Phosphorus	250	259		104	70-130
Silver	10.0	10.1		101	70-130
Sodium	1000	960	J	96	70-130
Thallium	20.0	23.0		115	70-130
Silicon	400	388	J	97	70-130
Tin	100	108		108	70-130
Titanium	20.0	19.8	J	99	70-130
Vanadium	50.0	51.2		102	70-130
Uranium	500	538		108	70-130
Zinc	20.0	21.4		107	70-130

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IIB-IN

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Concentration Units: ug/L

Analyte	RL	ICB 160-160013/6 11/26/2014 07:14		CCB 160-160013/12 11/26/2014 07:37		CCB 160-160013/44 11/26/2014 09:40		CCB 160-160013/56 11/26/2014 11:32	
		Found	C	Found	C	Found	C	Found	C
Aluminum	200	ND		ND		ND		ND	
Antimony	10	ND		ND		ND		ND	
Arsenic	10	ND		ND		ND		1.80	J
Barium	50	ND		ND		ND		ND	
Beryllium	5.0	0.500	J	0.500	J	0.400	J	0.400	J
Boron	50	15.1	J	15.7	J	ND		11.6	J
Cadmium	5.0	ND		ND		ND		ND	
Calcium	1000	ND		ND		ND		ND	
Chromium	10	ND		ND		ND		ND	
Cobalt	50	ND		ND		ND		ND	
Copper	25	ND		2.90	J	2.50	J	ND	
Iron	100	ND		ND		ND		ND	
Lead	10	ND		ND		ND		ND	
Magnesium	1000	ND		ND		ND		ND	
Manganese	15	ND		ND		ND		ND	
Molybdenum	40	ND		ND		ND		ND	
Nickel	40	ND		ND		ND		ND	
Phosphorus	250	ND		ND		ND		ND	
Potassium	5000	ND		ND		ND		ND	
Selenium	15	ND		ND		ND		ND	
Silicon	400	ND		ND		ND		ND	
Silver	10	1.10	J	1.20	J	ND		ND	
Sodium	1000	ND		ND		ND		ND	
Thallium	20	3.20	J	ND		ND		ND	
Tin	100	ND		ND		ND		ND	
Titanium	20	2.30	J	1.60	J	ND		ND	
Uranium	500	ND		ND		64.6	J	46.5	J
Vanadium	50	ND		ND		ND		ND	
Zinc	20	ND		ND		ND		ND	

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Concentration Units: ug/L

Analyte	RL	CCB 160-160013/64 11/26/2014 12:03							
		Found	C	Found	C	Found	C	Found	C
Aluminum	200	ND							
Antimony	10	ND							
Arsenic	10	ND							
Barium	50	ND							
Beryllium	5.0	0.800	J						
Boron	50	11.0	J						
Cadmium	5.0	ND							
Calcium	1000	ND							
Chromium	10	ND							
Cobalt	50	ND							
Copper	25	3.00	J						
Iron	100	ND							
Lead	10	ND							
Magnesium	1000	ND							
Manganese	15	ND							
Molybdenum	40	ND							
Nickel	40	ND							
Phosphorus	250	ND							
Potassium	5000	ND							
Selenium	15	ND							
Silicon	400	ND							
Silver	10	ND							
Sodium	1000	ND							
Thallium	20	2.80	J						
Tin	100	ND							
Titanium	20	1.70	J						
Uranium	500	ND							
Vanadium	50	ND							
Zinc	20	ND							

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Concentration Units: ug/L

Analyte	RL	ICB 160-161515/6 12/05/2014 12:30		CCB 160-161515/12 12/05/2014 12:53		CCB 160-161515/62 12/05/2014 16:26		CCB 160-161515/74 12/05/2014 17:12	
		Found	C	Found	C	Found	C	Found	C
Aluminum	200	ND		ND		ND		ND	
Antimony	10	ND		ND		ND		ND	
Arsenic	10	ND		ND		ND		ND	
Barium	50	ND		ND		ND		ND	
Beryllium	5.0	0.300	J	0.400	J	0.500	J	0.500	J
Boron	50	17.9	J	17.3	J	12.6	J	11.4	J
Cadmium	5.0	ND		ND		ND		ND	
Calcium	1000	ND		ND		ND		ND	
Chromium	10	ND		ND		ND		ND	
Cobalt	50	ND		ND		ND		ND	
Copper	25	2.70	J	ND		ND		ND	
Iron	100	ND		ND		ND		ND	
Lead	10	0.600	J	1.40	J	1.70	J	0.700	J
Magnesium	1000	ND		ND		ND		ND	
Manganese	15	ND		ND		ND		ND	
Molybdenum	40	ND		ND		ND		ND	
Nickel	40	ND		ND		ND		ND	
Phosphorus	250	ND		ND		ND		ND	
Potassium	5000	ND		ND		ND		ND	
Selenium	15	ND		ND		ND		ND	
Silicon	400	ND		ND		ND		ND	
Silver	10	ND		ND		ND		ND	
Sodium	1000	ND		ND		ND		ND	
Thallium	20	ND		ND		ND		ND	
Tin	100	ND		ND		ND		ND	
Titanium	20	ND		ND		ND		ND	
Uranium	500	ND		ND		ND		ND	
Vanadium	50	ND		ND		ND		ND	
Zinc	20	ND		ND		ND		ND	

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Concentration Units: ug/L

Analyte	RL	CCB 160-161515/86 12/05/2014 17:58							
		Found	C	Found	C	Found	C	Found	C
Aluminum	200	ND							
Antimony	10	ND							
Arsenic	10	ND							
Barium	50	ND							
Beryllium	5.0	0.400	J						
Boron	50	14.1	J						
Cadmium	5.0	ND							
Calcium	1000	ND							
Chromium	10	ND							
Cobalt	50	ND							
Copper	25	ND							
Iron	100	ND							
Lead	10	0.900	J						
Magnesium	1000	ND							
Manganese	15	ND							
Molybdenum	40	ND							
Nickel	40	ND							
Phosphorus	250	ND							
Potassium	5000	ND							
Selenium	15	ND							
Silicon	400	ND							
Silver	10	ND							
Sodium	1000	ND							
Thallium	20	ND							
Tin	100	ND							
Titanium	20	ND							
Uranium	500	ND							
Vanadium	50	ND							
Zinc	20	ND							

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Concentration Units: ug/L

Analyte	RL	ICB 160-161064/8 12/04/2014 10:16		CCB 160-161064/10 12/04/2014 10:28		CCB 160-161064/22 12/04/2014 10:56		CCB 160-161064/34 12/04/2014 11:28	
		Found	C	Found	C	Found	C	Found	C
Mercury	0.20	ND		ND		ND		ND	

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Concentration Units: ug/L

Analyte	RL	ICB 160-161529/8 12/06/2014 11:39		CCB 160-161529/57 12/06/2014 13:54		CCB 160-161529/69 12/06/2014 14:23			
		Found	C	Found	C	Found	C	Found	C
Mercury	0.20	ND		ND		ND			

Italicized analytes were not requested for this sequence.

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Concentration Units: ug/L Lab Sample ID: MB 160-159156/1-A

Instrument Code: ICP6500 Batch No.: 160013

CAS No.	Analyte	Concentration	C	Q	Method
7429-90-5	Aluminum	ND			6010C
7440-36-0	Antimony	ND			6010C
7440-38-2	Arsenic	ND			6010C
7440-39-3	Barium	ND			6010C
7440-41-7	Beryllium	ND			6010C
7440-42-8	Boron	ND			6010C
7440-43-9	Cadmium	ND			6010C
7440-70-2	Calcium	ND			6010C
7440-47-3	Chromium	ND			6010C
7440-48-4	Cobalt	ND			6010C
7440-50-8	Copper	ND			6010C
7439-89-6	Iron	ND			6010C
7439-92-1	Lead	ND			6010C
7439-95-4	Magnesium	ND			6010C
7439-96-5	Manganese	ND			6010C
7439-98-7	Molybdenum	ND			6010C
7440-02-0	Nickel	ND			6010C
7440-09-7	Potassium	ND			6010C
7782-49-2	Selenium	ND			6010C
7723-14-0	Phosphorus	ND			6010C
7440-22-4	Silver	ND			6010C
7440-23-5	Sodium	ND			6010C
7440-28-0	Thallium	2.50	J		6010C
7440-21-3	Silicon	ND			6010C
7440-31-5	Tin	ND			6010C
7440-32-6	Titanium	ND			6010C
7440-62-2	Vanadium	ND			6010C
7440-61-1	Uranium	67.3	J		6010C
7440-66-6	Zinc	10.1	J		6010C

3-IN
METHOD BLANK
METALS - DISSOLVED

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Concentration Units: ug/L Lab Sample ID: LB 160-157827/1-B

Instrument Code: ICP6500 Batch No.: 161515

CAS No.	Analyte	Concentration	C	Q	Method
7429-90-5	Aluminum	ND			6010C
7440-36-0	Antimony	ND			6010C
7440-38-2	Arsenic	ND			6010C
7440-39-3	Barium	ND			6010C
7440-41-7	Beryllium	ND			6010C
7440-42-8	Boron	ND			6010C
7440-43-9	Cadmium	ND			6010C
7440-70-2	Calcium	ND			6010C
7440-47-3	Chromium	ND			6010C
7440-48-4	Cobalt	ND			6010C
7440-50-8	Copper	ND			6010C
7439-89-6	Iron	ND			6010C
7439-92-1	Lead	0.600	J		6010C
7439-95-4	Magnesium	ND			6010C
7439-96-5	Manganese	ND			6010C
7439-98-7	Molybdenum	ND			6010C
7440-02-0	Nickel	ND			6010C
7440-09-7	Potassium	ND			6010C
7782-49-2	Selenium	ND			6010C
7723-14-0	Phosphorus	ND			6010C
7440-22-4	Silver	ND			6010C
7440-23-5	Sodium	ND			6010C
7440-28-0	Thallium	ND			6010C
7440-21-3	Silicon	ND			6010C
7440-31-5	Tin	ND			6010C
7440-32-6	Titanium	ND			6010C
7440-62-2	Vanadium	ND			6010C
7440-61-1	Uranium	ND			6010C
7440-66-6	Zinc	ND			6010C

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Concentration Units: ug/L Lab Sample ID: MB 160-160845/1-A

Instrument Code: HAA2 Batch No.: 161064

CAS No.	Analyte	Concentration	C	Q	Method
7439-97-6	Mercury	ND			7470A

3-IN
METHOD BLANK
METALS - DISSOLVED

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Concentration Units: ug/L Lab Sample ID: LB 160-157827/1-D

Instrument Code: HAA2 Batch No.: 161529

CAS No.	Analyte	Concentration	C	Q	Method
7439-97-6	Mercury	ND			7470A

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Lab Sample ID: ICSA 160-160013/8 Instrument ID: ICP6500

Lab File ID: 112614C1a.asc ICS Source: ICPC MIX ICSA_00043

Concentration Units: ug/L

Analyte	True Solution A	Found Solution A	Percent Recovery
Aluminum	**100000**	**98950**	**99**
Antimony		**0.800**	
Arsenic		**0.0000**	
Barium		**0.300**	
Beryllium		**0.0000**	
Boron		**0.0000**	
Cadmium		**0.0000**	
Calcium	**100000**	**97700**	**98**
Chromium		**0.0000**	
Cobalt		**1.00**	
Copper		**3.00**	
Iron	**100000**	**99030**	**99**
Lead		**0.0000**	
Magnesium	**100000**	**99280**	**99**
Manganese		**4.60**	
Molybdenum		**0.0000**	
Nickel		**1.10**	
Phosphorus	**100000**	**97610**	**98**
Potassium	**100000**	**98970**	**99**
Selenium		**4.60**	
Silicon		**0.0000**	
Silver		**0.0000**	
Sodium	**100000**	**98860**	**99**
Thallium		**3.00**	
Tin		**0.0000**	
Titanium		**2.30**	
Uranium		**0.0000**	
Vanadium		**0.0000**	
Zinc		**0.0000**	

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Lab Sample ID: ICSAB 160-160013/9 Instrument ID: ICP6500

Lab File ID: 112614C1a.asc ICS Source: ICPC MIX AB_00047

Concentration Units: ug/L

Analyte	True Solution AB	Found Solution AB	Found Percent Recovery
Aluminum	**100000**	**98610**	**99**
Antimony	**500**	**498**	**100**
Arsenic	**2500**	**2492**	**100**
Barium	**2500**	**2492**	**100**
Beryllium	**2500**	**2541**	**102**
Boron	**2500**	**2480**	**99**
Cadmium	**2500**	**2532**	**101**
Calcium	**100000**	**98350**	**98**
Chromium	**2500**	**2496**	**100**
Cobalt	**2500**	**2533**	**101**
Copper	**2500**	**2515**	**101**
Iron	**100000**	**98560**	**99**
Lead	**2500**	**2498**	**100**
Magnesium	**100000**	**99580**	**100**
Manganese	**2500**	**2446**	**98**
Molybdenum	**500**	**502**	**100**
Nickel	**2500**	**2500**	**100**
Phosphorus	**100000**	**99370**	**99**
Potassium	**100000**	**99200**	**99**
Selenium	**500**	**504**	**101**
Silicon	**2500**	**2505**	**100**
Silver	**500**	**503**	**101**
Sodium	**100000**	**98640**	**99**
Thallium	**500**	**506**	**101**
Tin	**2500**	**2508**	**100**
Titanium	**2500**	**2494**	**100**
Uranium	**2500**	**2497**	**100**
Vanadium	**2500**	**2451**	**98**
Zinc	**2500**	**2556**	**102**

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Lab Sample ID: ICSA 160-161515/8 Instrument ID: ICP6500

Lab File ID: 120514C2.asc ICS Source: ICPC MIX ICSA_00044

Concentration Units: ug/L

Analyte	True Solution A	Found Solution A	Percent Recovery
Aluminum	**100000**	**98890**	**99**
Antimony		**0.0000**	
Arsenic		**3.40**	
Barium		**0.200**	
Beryllium		**0.0000**	
Boron		**0.0000**	
Cadmium		**0.0000**	
Calcium	**100000**	**97510**	**98**
Chromium		**0.0000**	
Cobalt		**1.40**	
Copper		**4.50**	
Iron	**100000**	**99000**	**99**
Lead		**0.0000**	
Magnesium	**100000**	**99500**	**100**
Manganese		**4.70**	
Molybdenum		**0.0000**	
Nickel		**1.40**	
Phosphorus	**100000**	**97560**	**98**
Potassium	**100000**	**99400**	**99**
Selenium		**3.10**	
Silicon		**0.0000**	
Silver		**0.0000**	
Sodium	**100000**	**98380**	**98**
Thallium		**0.0000**	
Tin		**0.0000**	
Titanium		**3.40**	
Uranium		**66.4**	
Vanadium		**3.60**	
Zinc		**0.0000**	

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Lab Sample ID: ICSAB 160-161515/9 Instrument ID: ICP6500

Lab File ID: 120514C2.asc ICS Source: ICPC MIX AB_00048

Concentration Units: ug/L

Analyte	True Solution AB	Found Solution AB	Found Percent Recovery
Aluminum	**100000**	**98740**	**99**
Antimony	**500**	**485**	**97**
Arsenic	**2500**	**2445**	**98**
Barium	**2500**	**2471**	**99**
Beryllium	**2500**	**2508**	**100**
Boron	**2500**	**2435**	**97**
Cadmium	**2500**	**2468**	**99**
Calcium	**100000**	**97530**	**98**
Chromium	**2500**	**2467**	**99**
Cobalt	**2500**	**2463**	**99**
Copper	**2500**	**2461**	**98**
Iron	**100000**	**99070**	**99**
Lead	**2500**	**2461**	**98**
Magnesium	**100000**	**99910**	**100**
Manganese	**2500**	**2447**	**98**
Molybdenum	**500**	**495**	**99**
Nickel	**2500**	**2433**	**97**
Phosphorus	**100000**	**97230**	**97**
Potassium	**100000**	**99570**	**100**
Selenium	**500**	**490**	**98**
Silicon	**2500**	**2490**	**100**
Silver	**500**	**493**	**99**
Sodium	**100000**	**98310**	**98**
Thallium	**500**	**487**	**97**
Tin	**2500**	**2469**	**99**
Titanium	**2500**	**2474**	**99**
Uranium	**2500**	**2512**	**100**
Vanadium	**2500**	**2421**	**97**
Zinc	**2500**	**2488**	**100**

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

5A-IN
MATRIX SPIKE SAMPLE RECOVERY
METALS

Client ID: BG03-20141114-21 MS
Lab ID: 160-9451-1 MS
Lab Name: TestAmerica St. Louis
Job No.: 160-9451-1
SDG No.:
Matrix: Water
Concentration Units: ug/L
% Solids:

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Aluminum	13100		3700		10000	93	75-125		6010C
Antimony	461		ND		500	92	75-125		6010C
Arsenic	926		ND		1000	93	75-125		6010C
Barium	1570		640		1000	94	75-125		6010C
Beryllium	941		ND		1000	94	75-125		6010C
Boron	1890		ND		2000	94	75-125		6010C
Cadmium	939		ND		1000	94	75-125		6010C
Calcium	73100		64000		10000	95	75-125	4	6010C
Chromium	966		ND		1000	97	75-125		6010C
Cobalt	1010		ND		1000	101	75-125		6010C
Copper	958		25	J	1000	93	75-125		6010C
Iron	14900		5100		10000	98	75-125		6010C
Lead	995		15	J	1000	98	75-125		6010C
Magnesium	17900		8800	J	10000	91	75-125		6010C
Manganese	1550		580		1000	96	75-125		6010C
Molybdenum	471		ND		500	94	75-125		6010C
Nickel	1000		ND		1000	100	75-125		6010C
Potassium	12900	J	ND		10000	129	75-125	F1	6010C
Selenium	467		ND		500	93	75-125		6010C
Phosphorus	1200	J	210	J	1000	99	75-125		6010C
Silver	194		ND		200	97	75-125		6010C
Sodium	31400		22000		10000	93	75-125		6010C
Thallium	231		27	J	200	102	75-125		6010C
Silicon	32300		27000		5000	116	75-125	4	6010C
Tin	968	J	ND		1000	97	75-125		6010C
Titanium	937		ND		1000	94	75-125		6010C
Vanadium	949		ND		1000	95	75-125		6010C
Uranium	1360	J	500	J	1000	86	75-125		6010C
Zinc	1030		94	J	1000	94	75-125		6010C

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VA - IN

5A-IN
MATRIX SPIKE SAMPLE RECOVERY
METALS - DISSOLVED

Client ID: BG03-20141114-21 MS
Lab ID: 160-9451-1 MS
Lab Name: TestAmerica St. Louis
Job No.: 160-9451-1
SDG No.:
Matrix: Water
Concentration Units: ug/L
% Solids:

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Aluminum	17600		5100		10000	126	75-125	F1	6010C
Antimony	519		ND		500	104	75-125		6010C
Arsenic	985		ND		1000	99	75-125		6010C
Barium	1260		320	J	1000	95	75-125		6010C
Beryllium	936		ND		1000	94	75-125		6010C
Boron	1860		83	J	2000	89	75-125		6010C
Cadmium	1010		ND		1000	101	75-125		6010C
Calcium	76300		58000		10000	184	75-125	4	6010C
Chromium	1040		ND		1000	104	75-125		6010C
Cobalt	1120		ND		1000	112	75-125		6010C
Copper	1080		29	J	1000	105	75-125		6010C
Iron	14600		4500		10000	100	75-125		6010C
Lead	1130		17	J	1000	111	75-125		6010C
Magnesium	18200		8000	J	10000	102	75-125		6010C
Manganese	1150		170		1000	98	75-125		6010C
Molybdenum	528		ND		500	106	75-125		6010C
Nickel	1110		ND		1000	111	75-125		6010C
Potassium	14500	J	4900	J	10000	96	75-125		6010C
Selenium	496		ND		500	99	75-125		6010C
Phosphorus	1180	J	ND		1000	118	75-125		6010C
Silver	204		ND		200	102	75-125		6010C
Sodium	31600		21000		10000	106	75-125		6010C
Thallium	224		ND		200	112	75-125		6010C
Silicon	40100		29000		5000	224	75-125	4	6010C
Tin	1090		ND		1000	109	75-125		6010C
Titanium	986		59	J	1000	93	75-125		6010C
Vanadium	959		ND		1000	96	75-125		6010C
Uranium	1060	J	ND		1000	106	75-125		6010C
Zinc	1100		ND		1000	110	75-125		6010C

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VA - IN

5A-IN
MATRIX SPIKE SAMPLE RECOVERY
METALS - DISSOLVED

Client ID: N1-20141114-21 MS
Lab ID: 160-9451-4 MS
Lab Name: TestAmerica St. Louis
Job No.: 160-9451-1
SDG No.:
Matrix: Water
Concentration Units: ug/L
% Solids:

Analyte	SSR C		Sample Result (SR) C		Spike Added (SA)	%R	Control Limit %R	Q	Method
Mercury	4.73		ND		5.00	95	80-120		7470A

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VA - IN

5A-IN
MATRIX SPIKE DUPLICATE SAMPLE RECOVERY
METALS

Client ID: BG03-20141114-21 MSD Lab ID: 160-9451-1 MSD

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Matrix: Water Concentration Units: ug/L

% Solids:

Analyte	(SDR)	C	Spike Added (SA)	%R	Control Limit %R	RPD	RPD Limit	Q	Method
Aluminum	29200		10000	255	75-125	76	20	F1 F2	6010C
Antimony	475		500	95	75-125	3	20		6010C
Arsenic	965		1000	97	75-125	4	20		6010C
Barium	1700		1000	106	75-125	8	20		6010C
Beryllium	988		1000	99	75-125	5	20		6010C
Boron	2000		2000	100	75-125	6	20		6010C
Cadmium	978		1000	98	75-125	4	20		6010C
Calcium	76200		10000	126	75-125	4	20	4	6010C
Chromium	987		1000	99	75-125	2	20		6010C
Cobalt	1060		1000	106	75-125	5	20		6010C
Copper	1030		1000	101	75-125	7	20		6010C
Iron	23300		10000	182	75-125	44	20	F1 F2	6010C
Lead	1070		1000	106	75-125	8	20		6010C
Magnesium	20000		10000	113	75-125	11	20		6010C
Manganese	1640		1000	106	75-125	6	20		6010C
Molybdenum	496		500	99	75-125	5	20		6010C
Nickel	1060		1000	106	75-125	5	20		6010C
Potassium	16400	J	10000	164	75-125	23	20	F1 F2	6010C
Selenium	483		500	97	75-125	3	20		6010C
Phosphorus	1310	J	1000	110	75-125	9	20		6010C
Silver	185		200	93	75-125	5	20		6010C
Sodium	33400		10000	113	75-125	6	20		6010C
Thallium	242		200	108	75-125	5	20		6010C
Silicon	62800		5000	726	75-125	64	20	4 F2	6010C
Tin	1000		1000	100	75-125	3	20		6010C
Titanium	1070		1000	107	75-125	13	20		6010C
Vanadium	1000		1000	100	75-125	5	20		6010C
Uranium	1150	J	1000	65	75-125	17	20	F1	6010C
Zinc	1100		1000	100	75-125	6	20		6010C

SDR = Sample Duplicate Result

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VD - IN

5A-IN
MATRIX SPIKE DUPLICATE SAMPLE RECOVERY
METALS - DISSOLVED

Client ID: BG03-20141114-21 MSD
Lab ID: 160-9451-1 MSD
Lab Name: TestAmerica St. Louis
Job No.: 160-9451-1
SDG No.:
Matrix: Water
Concentration Units: ug/L
% Solids:

Analyte	(SDR)	C	Spike Added (SA)	%R	Control Limit %R	RPD	RPD Limit	Q	Method
Aluminum	17000		10000	119	75-125	4	20		6010C
Antimony	481		500	96	75-125	8	20		6010C
Arsenic	954		1000	95	75-125	3	20		6010C
Barium	1230		1000	92	75-125	3	20		6010C
Beryllium	918		1000	92	75-125	2	20		6010C
Boron	1840		2000	88	75-125	1	20		6010C
Cadmium	973		1000	97	75-125	4	20		6010C
Calcium	70200		10000	123	75-125	8	20	4	6010C
Chromium	1010		1000	101	75-125	3	20		6010C
Cobalt	1060		1000	106	75-125	5	20		6010C
Copper	1020		1000	99	75-125	6	20		6010C
Iron	14000		10000	95	75-125	4	20		6010C
Lead	1090		1000	107	75-125	4	20		6010C
Magnesium	17300		10000	93	75-125	5	20		6010C
Manganese	1120		1000	95	75-125	3	20		6010C
Molybdenum	502		500	100	75-125	5	20		6010C
Nickel	1050		1000	105	75-125	5	20		6010C
Potassium	14200	J	10000	93	75-125	2	20		6010C
Selenium	501		500	100	75-125	1	20		6010C
Phosphorus	1140	J	1000	114	75-125	4	20		6010C
Silver	195		200	98	75-125	5	20		6010C
Sodium	30400		10000	94	75-125	4	20		6010C
Thallium	219		200	110	75-125	2	20		6010C
Silicon	37800		5000	178	75-125	6	20	4	6010C
Tin	1040		1000	104	75-125	5	20		6010C
Titanium	970		1000	91	75-125	2	20		6010C
Vanadium	953		1000	95	75-125	1	20		6010C
Uranium	1130	J	1000	113	75-125	6	20		6010C
Zinc	1040		1000	104	75-125	5	20		6010C

SDR = Sample Duplicate Result

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VD - IN

5A-IN
MATRIX SPIKE DUPLICATE SAMPLE RECOVERY
METALS - DISSOLVED

Client ID: N1-20141114-21 MSD
Lab ID: 160-9451-4 MSD
Lab Name: TestAmerica St. Louis
Job No.: 160-9451-1
SDG No.:
Matrix: Water
Concentration Units: ug/L
% Solids:

Analyte	(SDR) C		Spike Added (SA)	%R	Control Limit %R	RPD	RPD Limit	Q	Method
Mercury	4.87		5.00	97	80-120	3	20		7470A

SDR = Sample Duplicate Result

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VD - IN

LINEAR RANGE CHECK STANDARD
METALS -

Lab ID: LRC 160-160013/10

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

Sample Matrix: Water LCS Source: ICP CAL3\LRC_00017

Analyte	Water(ug/L)							
	True	Found	C	%R	Limits		Q	Method
Aluminum	100000	100000		100	90	110		6010C
Antimony	2000	1990		100	90	110		6010C
Arsenic	10000	9900		99	90	110		6010C
Barium	10000	9940		99	90	110		6010C
Beryllium	10000	9750		97	90	110		6010C
Boron	10000	9990		100	90	110		6010C
Cadmium	10000	9880		99	90	110		6010C
Calcium	100000	97800		98	90	110		6010C
Chromium	10000	9750		98	90	110		6010C
Cobalt	10000	9830		98	90	110		6010C
Copper	10000	9920		99	90	110		6010C
Iron	100000	98800		99	90	110		6010C
Lead	10000	9820		98	90	110		6010C
Magnesium	100000	98600		99	90	110		6010C
Manganese	10000	9880		99	90	110		6010C
Molybdenum	2000	1980		99	90	110		6010C
Nickel	10000	9800		98	90	110		6010C
Potassium	100000	99700		100	90	110		6010C
Selenium	2000	1990		100	90	110		6010C
Phosphorus	100000	97700		98	90	110		6010C
Silver	2000	1990		99	90	110		6010C
Sodium	100000	99800		100	90	110		6010C
Thallium	2000	1960		98	90	110		6010C
Silicon	10000	9910		99	90	110		6010C
Tin	10000	9830		98	90	110		6010C
Titanium	10000	9960		100	90	110		6010C
Vanadium	10000	9890		99	90	110		6010C
Uranium	10000	9840		98	90	110		6010C
Zinc	10000	9850		98	90	110		6010C

Calculations are performed before rounding to avoid round-off errors in calculated results.

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 160-159156/2-A

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

Sample Matrix: Water LCS Source: PREP 1 and 2_00006

Analyte	Water(ug/L)							
	True	Found	C	%R	Limits		Q	Method
Aluminum	10000	9570		96	80	120		6010C
Antimony	500	500		100	80	120		6010C
Arsenic	1000	976		98	80	120		6010C
Barium	1000	992		99	80	120		6010C
Beryllium	1000	994		99	80	120		6010C
Boron	2000	1990		100	80	120		6010C
Cadmium	1000	990		99	80	120		6010C
Calcium	10000	10700		107	80	120		6010C
Chromium	1000	1020		102	80	120		6010C
Cobalt	1000	1060		106	80	120		6010C
Copper	1000	1020		102	80	120		6010C
Iron	10000	10200		102	80	120		6010C
Lead	1000	1030		103	80	120		6010C
Magnesium	10000	9450		95	80	120		6010C
Manganese	1000	999		100	80	120		6010C
Molybdenum	500	508		102	80	120		6010C
Nickel	1000	1040		104	80	120		6010C
Potassium	10000	9590		96	80	120		6010C
Selenium	500	496		99	80	120		6010C
Phosphorus	1000	1040		104	80	120		6010C
Silver	200	198		99	80	120		6010C
Sodium	10000	9790		98	80	120		6010C
Thallium	200	212		106	80	120		6010C
Silicon	5000	5020		100	80	120		6010C
Tin	1000	1020		102	80	120		6010C
Titanium	1000	995		99	80	120		6010C
Vanadium	1000	980		98	80	120		6010C
Uranium	1000	1090		109	80	120		6010C
Zinc	1000	1030		103	80	120		6010C

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

LINEAR RANGE CHECK STANDARD
METALS -

Lab ID: LRC 160-161515/10

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

Sample Matrix: Water LCS Source: ICP CAL3\LRC_00018

Analyte	Water(ug/L)							
	True	Found	C	%R	Limits		Q	Method
Aluminum	100000	99100		99	90	110		6010C
Antimony	2000	1980		99	90	110		6010C
Arsenic	10000	9890		99	90	110		6010C
Barium	10000	9760		98	90	110		6010C
Beryllium	10000	9680		97	90	110		6010C
Boron	10000	9800		98	90	110		6010C
Cadmium	10000	9790		98	90	110		6010C
Calcium	100000	96900		97	90	110		6010C
Chromium	10000	9730		97	90	110		6010C
Cobalt	10000	9730		97	90	110		6010C
Copper	10000	9800		98	90	110		6010C
Iron	100000	98200		98	90	110		6010C
Lead	10000	9730		97	90	110		6010C
Magnesium	100000	98100		98	90	110		6010C
Manganese	10000	9780		98	90	110		6010C
Molybdenum	2000	1960		98	90	110		6010C
Nickel	10000	9720		97	90	110		6010C
Potassium	100000	99400		99	90	110		6010C
Selenium	2000	1990		100	90	110		6010C
Phosphorus	100000	97400		97	90	110		6010C
Silver	2000	1950		98	90	110		6010C
Sodium	100000	97800		98	90	110		6010C
Thallium	2000	1930		97	90	110		6010C
Silicon	10000	9850		98	90	110		6010C
Tin	10000	9750		97	90	110		6010C
Titanium	10000	9800		98	90	110		6010C
Vanadium	10000	9750		97	90	110		6010C
Uranium	10000	9680		97	90	110		6010C
Zinc	10000	9770		98	90	110		6010C

Calculations are performed before rounding to avoid round-off errors in calculated results.

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 160-160503/2-A

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

Sample Matrix: Water LCS Source: PREP 1 and 2_00006

Analyte	Water(ug/L)							
	True	Found	C	%R	Limits		Q	Method
Aluminum	10000	9150		91	80	120		6010C
Antimony	500	485		97	80	120		6010C
Arsenic	1000	955		96	80	120		6010C
Barium	1000	930		93	80	120		6010C
Beryllium	1000	934		93	80	120		6010C
Boron	2000	1830		91	80	120		6010C
Cadmium	1000	961		96	80	120		6010C
Calcium	10000	10700		107	80	120		6010C
Chromium	1000	1000		100	80	120		6010C
Cobalt	1000	1050		105	80	120		6010C
Copper	1000	993		99	80	120		6010C
Iron	10000	9590		96	80	120		6010C
Lead	1000	1040		104	80	120		6010C
Magnesium	10000	9230		92	80	120		6010C
Manganese	1000	951		95	80	120		6010C
Molybdenum	500	507		101	80	120		6010C
Nickel	1000	1030		103	80	120		6010C
Potassium	10000	9220		92	80	120		6010C
Selenium	500	482		96	80	120		6010C
Phosphorus	1000	1020		102	80	120		6010C
Silver	200	197		98	80	120		6010C
Sodium	10000	9190		92	80	120		6010C
Thallium	200	212		106	80	120		6010C
Silicon	5000	4580		92	80	120		6010C
Tin	1000	1030		103	80	120		6010C
Titanium	1000	940		94	80	120		6010C
Vanadium	1000	935		93	80	120		6010C
Uranium	1000	1040		104	80	120		6010C
Zinc	1000	983		98	80	120		6010C

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 160-160845/2-A

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

Sample Matrix: Water LCS Source: Hg QC Int._00449

Analyte	Water(ug/L)							
	True	Found	C	%R	Limits		Q	Method
Mercury	5.00	5.29		106	80	120		7470A

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 160-161422/2-A

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

Sample Matrix: Water LCS Source: Hg QC Int._00451

Analyte	Water(ug/L)							
	True	Found	C	%R	Limits		Q	Method
Mercury	5.00	5.06		101	80	120		7470A

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

8-IN
ICP-AES AND ICP-MS SERIAL DILUTIONS
METALS

Lab ID: 160-9451-1

SDG No:

Lab Name: TestAmerica St. Louis Job No: 160-9451-1

Matrix: Water Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	Method
Aluminum	3700		3820	J	NC		6010C
Antimony	ND		ND		NC		6010C
Arsenic	ND		ND		NC		6010C
Barium	640		630	J	NC		6010C
Beryllium	ND		ND		NC		6010C
Boron	ND		ND		NC		6010C
Cadmium	ND		ND		NC		6010C
Calcium	64000		63300		0.49		6010C
Chromium	ND		ND		NC		6010C
Cobalt	ND		ND		NC		6010C
Copper	25	J	ND		NC		6010C
Iron	5100		5200		NC		6010C
Lead	15	J	ND		NC		6010C
Magnesium	8800	J	9100	J	NC		6010C
Manganese	580		600	J	2.9		6010C
Molybdenum	ND		ND		NC		6010C
Nickel	ND		ND		NC		6010C
Potassium	ND		ND		NC		6010C
Selenium	ND		ND		NC		6010C
Phosphorus	210	J	ND		NC		6010C
Silver	ND		ND		NC		6010C
Sodium	22000		22400	J	NC		6010C
Thallium	27	J	ND		NC		6010C
Silicon	27000		26700		0.68		6010C
Tin	ND		ND		NC		6010C
Titanium	ND		ND		NC		6010C
Vanadium	ND		ND		NC		6010C
Uranium	500	J	1300	J	NC		6010C
Zinc	94	J	ND		NC		6010C

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIII-IN

8-IN
ICP-AES AND ICP-MS SERIAL DILUTIONS
METALS - DISSOLVED

Lab ID: 160-9451-1

SDG No:

Lab Name: TestAmerica St. Louis Job No: 160-9451-1

Matrix: Water Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	Method
Aluminum	5100		5010	J	NC		6010C
Antimony	ND		ND		NC		6010C
Arsenic	ND		ND		NC		6010C
Barium	320	J	315	J	NC		6010C
Beryllium	ND		ND		NC		6010C
Boron	83	J	ND		NC		6010C
Cadmium	ND		ND		NC		6010C
Calcium	58000		56300		2.7		6010C
Chromium	ND		ND		NC		6010C
Cobalt	ND		ND		NC		6010C
Copper	29	J	ND		NC		6010C
Iron	4500		4330	J	NC		6010C
Lead	17	J	100	J	NC		6010C
Magnesium	8000	J	7690	J	NC		6010C
Manganese	170		170	J	NC		6010C
Molybdenum	ND		ND		NC		6010C
Nickel	ND		ND		NC		6010C
Potassium	4900	J	ND		NC		6010C
Selenium	ND		ND		NC		6010C
Phosphorus	ND		ND		NC		6010C
Silver	ND		ND		NC		6010C
Sodium	21000		20300	J	NC		6010C
Thallium	ND		ND		NC		6010C
Silicon	29000		28000		3.0		6010C
Tin	ND		ND		NC		6010C
Titanium	59	J	ND		NC		6010C
Vanadium	ND		ND		NC		6010C
Uranium	ND		ND		NC		6010C
Zinc	ND		ND		NC		6010C

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIII-IN

8-IN
ICP-AES AND ICP-MS SERIAL DILUTIONS
METALS - DISSOLVED

Lab ID: 160-9451-4

SDG No:

Lab Name: TestAmerica St. Louis Job No: 160-9451-1

Matrix: Water Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	Method
Mercury	ND		ND		NC		7470A

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIII-IN

9-IN
DETECTION LIMITS
METALS

Lab Name: TestAmerica St. Louis Job Number: 160-9451-1

SDG Number:

Matrix: Water Instrument ID: ICP6500

Method: 6010C MDL Date: 03/19/2014 10:27

Prep Method: 3010A

Analyte	Wavelength/ Mass	RL (ug/L)	MDL (ug/L)
Aluminum		200	22.4
Antimony		10	3.74
Arsenic		10	1.78
Barium		50	2.12
Beryllium		5	0.283
Boron		50	7.17
Cadmium		5	0.336
Calcium		1000	54.2
Chromium		10	3.35
Cobalt		50	2.72
Copper		25	2.1
Iron		100	12.8
Lead		10	0.598
Magnesium		1000	50.5
Manganese		15	1
Molybdenum		40	1.92
Nickel		40	2.57
Phosphorus		250	13.8
Potassium		5000	456
Selenium		15	2.08
Silicon		400	19.5
Silver		10	0.994
Sodium		1000	105
Thallium		20	2.38
Tin		100	5.01
Titanium		20	1.27
Uranium		500	25.7
Vanadium		50	4.39
Zinc		20	8.32

9-IN
CALIBRATION BLANK DETECTION LIMITS
METALS

Lab Name: TestAmerica St. Louis Job Number: 160-9451-1

SDG Number:

Matrix: Water Instrument ID: ICP6500

Method: 6010C XMDL Date: 03/19/2014 10:24

Analyte	Wavelength/ Mass	XRL (ug/L)	XMDL (ug/L)
Aluminum		200	22.4
Antimony		10	3.74
Arsenic		10	1.78
Barium		50	2.12
Beryllium		5	0.283
Boron		50	7.17
Cadmium		5	0.336
Calcium		1000	54.2
Chromium		10	3.35
Cobalt		50	2.72
Copper		25	2.1
Iron		100	12.8
Lead		10	0.598
Magnesium		1000	50.5
Manganese		15	1
Molybdenum		40	1.92
Nickel		40	2.57
Phosphorus		250	13.8
Potassium		5000	456
Selenium		15	2.08
Silicon		400	19.5
Silver		10	0.994
Sodium		1000	105
Thallium		20	2.38
Tin		100	5.01
Titanium		20	1.27
Uranium		500	25.7
Vanadium		50	4.39
Zinc		20	8.32

9-IN
DETECTION LIMITS
METALS - DISSOLVED

Lab Name: TestAmerica St. Louis Job Number: 160-9451-1

SDG Number:

Matrix: Water Instrument ID: ICP6500

Method: 6010C MDL Date: 03/19/2014 10:27

Prep Method: 3010A

Analyte	Wavelength/ Mass	RL (ug/L)	MDL (ug/L)
Aluminum		200	22.4
Antimony		10	3.74
Arsenic		10	1.78
Barium		50	2.12
Beryllium		5	0.283
Boron		50	7.17
Cadmium		5	0.336
Calcium		1000	54.2
Chromium		10	3.35
Cobalt		50	2.72
Copper		25	2.1
Iron		100	12.8
Lead		10	0.598
Magnesium		1000	50.5
Manganese		15	1
Molybdenum		40	1.92
Nickel		40	2.57
Phosphorus		250	13.8
Potassium		5000	456
Selenium		15	2.08
Silicon		400	19.5
Silver		10	0.994
Sodium		1000	105
Thallium		20	2.38
Tin		100	5.01
Titanium		20	1.27
Uranium		500	25.7
Vanadium		50	4.39
Zinc		20	8.32

9-IN
CALIBRATION BLANK DETECTION LIMITS
METALS - DISSOLVED

Lab Name: TestAmerica St. Louis Job Number: 160-9451-1

SDG Number:

Matrix: Water Instrument ID: ICP6500

Method: 6010C XMDL Date: 03/19/2014 10:24

Analyte	Wavelength/ Mass	XRL (ug/L)	XMDL (ug/L)
Aluminum		200	22.4
Antimony		10	3.74
Arsenic		10	1.78
Barium		50	2.12
Beryllium		5	0.283
Boron		50	7.17
Cadmium		5	0.336
Calcium		1000	54.2
Chromium		10	3.35
Cobalt		50	2.72
Copper		25	2.1
Iron		100	12.8
Lead		10	0.598
Magnesium		1000	50.5
Manganese		15	1
Molybdenum		40	1.92
Nickel		40	2.57
Phosphorus		250	13.8
Potassium		5000	456
Selenium		15	2.08
Silicon		400	19.5
Silver		10	0.994
Sodium		1000	105
Thallium		20	2.38
Tin		100	5.01
Titanium		20	1.27
Uranium		500	25.7
Vanadium		50	4.39
Zinc		20	8.32

9-IN
DETECTION LIMITS
METALS

Lab Name: TestAmerica St. Louis Job Number: 160-9451-1

SDG Number:

Matrix: Water Instrument ID: HAA2

Method: 7470A MDL Date: 06/28/2011 19:17

Prep Method: 7470A

Analyte	Wavelength/ Mass	RL (ug/L)	MDL (ug/L)
Mercury		0.2	0.06

9-IN
CALIBRATION BLANK DETECTION LIMITS
METALS

Lab Name: TestAmerica St. Louis Job Number: 160-9451-1

SDG Number:

Matrix: Water Instrument ID: HAA2

Method: 7470A XMDL Date: 06/28/2011 19:19

Analyte	Wavelength/ Mass	XRL (ug/L)	XMDL (ug/L)
Mercury		0.2	0.06

9-IN
DETECTION LIMITS
METALS - DISSOLVED

Lab Name: TestAmerica St. Louis Job Number: 160-9451-1

SDG Number:

Matrix: Water Instrument ID: HAA2

Method: 7470A MDL Date: 06/28/2011 19:17

Prep Method: 7470A

Analyte	Wavelength/ Mass	RL (ug/L)	MDL (ug/L)
Mercury		0.2	0.06

9-IN
CALIBRATION BLANK DETECTION LIMITS
METALS - DISSOLVED

Lab Name: TestAmerica St. Louis Job Number: 160-9451-1

SDG Number:

Matrix: Water Instrument ID: HAA2

Method: 7470A XMDL Date: 06/28/2011 19:19

Analyte	Wavelength/ Mass	XRL (ug/L)	XMDL (ug/L)
Mercury		0.2	0.06

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: TestAmerica St. Louis Job Number: 160-9451-1

SDG No.:

ICP-AES Instrument ID: ICP6500 Date: 10/17/2014

Analyte	Wave Length	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	In
Aluminum	396.152														
Antimony	206.833											0.009771		0.000037	
Arsenic	189.042													-0.000092	
Barium	455.403														
Beryllium	313.042														
Bismuth	223.061														
Boron	249.678													-0.000697	
Cadmium	228.802			0.00291							-0.002107				
Calcium	184.006														
Chromium	283.563													0.001797	
Cobalt	228.616														
Copper	217.894														
Iron	259.940														
Lead	220.353		-0.000067										0.0003	0.000015	
Lithium	670.784														
Magnesium	279.806														
Manganese	257.610														
Molybdenum	202.030														
Nickel	221.647														
Phosphorus	177.495														
Potassium	766.490														
Selenium	196.090													-0.000161	
Silicon	251.611														
Silver	328.068														
Sodium	589.592														
Strontium	407.771								0.000051						
Sulfur	182.034														
Thallium	190.856										0.004905				
Thorium	283.231														
Tin	189.989														

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: TestAmerica St. Louis Job Number: 160-9451-1

SDG No.:

ICP-AES Instrument ID: ICP6500 Date: 10/17/2014

Analyte	Wave Length	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	In
Titanium	334.941										0.004905				
Uranium	367.007													0.003929	
Vanadium	290.882		0.00006				0.000458								
Yttrium	371.030														
Zinc	213.856		0.000045										0.001724	0.000154	

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: TestAmerica St. Louis Job Number: 160-9451-1

SDG No.:

ICP-AES Instrument ID: ICP6500 Date: 10/17/2014

Analyte	Wave Length	K	Li	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Se	Si	Sn
Aluminum	396.152					0.039350									
Antimony	206.833														-0.005978
Arsenic	189.042														
Barium	455.403														
Beryllium	313.042														
Bismuth	223.061														
Boron	249.678														
Cadmium	228.802														
Calcium	184.006														
Chromium	283.563				0.000411										
Cobalt	228.616														
Copper	217.894														
Iron	259.940														
Lead	220.353					.001683									
Lithium	670.784														
Magnesium	279.806														
Manganese	257.610														
Molybdenum	202.030														
Nickel	221.647														
Phosphorus	177.495														
Potassium	766.490														
Selenium	196.090				0.000548										
Silicon	251.611														
Silver	328.068														
Sodium	589.592														
Strontium	407.771														
Sulfur	182.034														
Thallium	190.856				0.001127										
Thorium	283.231														
Tin	189.989														

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: TestAmerica St. Louis Job Number: 160-9451-1

SDG No.:

ICP-AES Instrument ID: ICP6500 Date: 10/17/2014

Analyte	Wave Length	K	Li	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Se	Si	Sn
Titanium	334.941				0.001127										
Uranium	367.007														
Vanadium	290.882												0.00354		
Yttrium	371.030														
Zinc	213.856							0.006227							

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: TestAmerica St. Louis Job Number: 160-9451-1

SDG No.:

ICP-AES Instrument ID: ICP6500 Date: 10/17/2014

Analyte	Wave Length	Sr	Th	Ti	Tl	U	V	Y	Zn						
Aluminum	396.152														
Antimony	206.833						-0.001548								
Arsenic	189.042														
Barium	455.403														
Beryllium	313.042			-0.000304											
Bismuth	223.061														
Boron	249.678														
Cadmium	228.802														
Calcium	184.006														
Chromium	283.563		-0.016			0.004988	0.000751								
Cobalt	228.616			0.001621											
Copper	217.894														
Iron	259.940														
Lead	220.353					0.001155									
Lithium	670.784														
Magnesium	279.806		-0.036831												
Manganese	257.610														
Molybdenum	202.030														
Nickel	221.647														
Phosphorus	177.495														
Potassium	766.490														
Selenium	196.090														
Silicon	251.611														
Silver	328.068					0.001663									
Sodium	589.592														
Strontium	407.771														
Sulfur	182.034														
Thallium	190.856		-0.000423	-0.000526											
Thorium	283.231			0.008116		-0.00617									
Tin	189.989														

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: TestAmerica St. Louis Job Number: 160-9451-1

SDG No.:

ICP-AES Instrument ID: ICP6500 Date: 10/17/2014

Analyte	Wave Length	Sr	Th	Ti	Tl	U	V	Y	Zn						
Titanium	334.941														
Uranium	367.007		0.1427												
Vanadium	290.882				0.002273	0.000924									
Yttrium	371.030														
Zinc	213.856														

11-IN
LINEAR RANGES
METALS

Lab Name: TestAmerica St. Louis Job No: 160-9451-1

SDG No.:

Instrument ID: ICP6500 Date: 09/25/2013 10:39

Analyte	Integ. Time (Sec.)	Concentration (mg/L)	Method
Aluminum		90	6010C
Antimony		1.8	6010C
Arsenic		9	6010C
Barium		9	6010C
Beryllium		9	6010C
Boron		9	6010C
Cadmium		9	6010C
Calcium		90	6010C
Chromium		9	6010C
Cobalt		9	6010C
Copper		9	6010C
Iron		90	6010C
Lead		9	6010C
Magnesium		90	6010C
Manganese		9	6010C
Molybdenum		1.8	6010C
Nickel		9	6010C
Potassium		90	6010C
Selenium		1.8	6010C
Phosphorus		90	6010C
Silver		3.6	6010C
Sodium		90	6010C
Thallium		1.8	6010C
Silicon		9	6010C
Tin		9	6010C
Titanium		9	6010C
Vanadium		9	6010C
Uranium		9	6010C
Zinc		9	6010C

11-IN
LINEAR RANGES
METALS

Lab Name: TestAmerica St. Louis Job No: 160-9451-1

SDG No.:

Instrument ID: HAA2 Date: 03/14/2012 13:48

Analyte	Integ. Time (Sec.)	Concentration (ug/L)	Method
Mercury		10	7470A

12-IN
PREPARATION LOG
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Prep Method: 3010A

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight	Initial Volume (mL)	Final Volume (mL)
MB 160-159156/1-A	11/24/2014 08:24	159156		50	50
LCS 160-159156/2-A	11/24/2014 08:24	159156		50	50
160-9451-1	11/24/2014 08:24	159156		50	50
160-9451-1 MS	11/24/2014 08:24	159156		50	50
160-9451-1 MSD	11/24/2014 08:24	159156		50	50
160-9451-2	11/24/2014 08:24	159156		50	50
160-9451-3	11/24/2014 08:24	159156		50	50
160-9451-4	11/24/2014 08:24	159156		50	50

12-IN
PREPARATION LOG
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Prep Method: 3010A

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight	Initial Volume (mL)	Final Volume (mL)
LB 160-157827/1-B	12/02/2014 13:02	160503		50	50
LCS 160-160503/2-A	12/02/2014 13:02	160503		50	50
160-9451-1	12/02/2014 13:02	160503		50	50
160-9451-1 MS	12/02/2014 13:02	160503		50	50
160-9451-1 MSD	12/02/2014 13:02	160503		50	50
160-9451-2	12/02/2014 13:02	160503		50	50
160-9451-3	12/02/2014 13:04	160503		50	50
160-9451-4	12/02/2014 13:04	160503		50	50

12-IN
PREPARATION LOG
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Prep Method: 7470A

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight	Initial Volume (mL)	Final Volume (mL)
MB 160-160845/1-A	12/03/2014 15:51	160845		30	30
LCS 160-160845/2-A	12/03/2014 15:51	160845		30	30
160-9451-1	12/03/2014 15:51	160845		30	30
160-9451-2	12/03/2014 15:51	160845		30	30
160-9451-3	12/03/2014 15:51	160845		30	30
160-9451-4	12/03/2014 15:51	160845		30	30

12-IN
PREPARATION LOG
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Prep Method: 7470A

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight	Initial Volume (mL)	Final Volume (mL)
LB 160-157827/1-D	12/05/2014 13:47	161422		30	30
LCS 160-161422/2-A	12/05/2014 13:47	161422		30	30
160-9451-1	12/05/2014 13:47	161422		30	30
160-9451-2	12/05/2014 13:47	161422		30	30
160-9451-3	12/05/2014 13:47	161422		30	30
160-9451-4	12/05/2014 13:47	161422		30	30
160-9451-4 MS	12/05/2014 13:47	161422		30	30
160-9451-4 MSD	12/05/2014 13:47	161422		30	30

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Instrument ID: ICP6500 Analysis Method: 6010C

Start Date: 11/26/2014 06:55 End Date: 11/26/2014 12:03

Lab Sample Id	D/F	Type	Time	Analytes																										
				Ag	Al	As	B	Ba	Be	Ca	Cd	Co	Cr	Cu	Fe	K	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Se	Si	Sn	Ti	Tl
ICIS 160-160013/1	1		06:55	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
IC 160-160013/2			06:59	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
IC 160-160013/3			07:03	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
IC 160-160013/4			07:07	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICV 160-160013/5	1		07:10	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICB 160-160013/6	1		07:14	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CRI 160-160013/7	1		07:18	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICSA 160-160013/8	1		07:22	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICSAB 160-160013/9	1		07:26	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LRC 160-160013/10	1		07:29	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCV 160-160013/11	1		07:33	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 160-160013/12	1		07:37	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			07:41																											
ZZZZZZ			07:45																											
ZZZZZZ			07:48																											
ZZZZZZ			07:52																											
ZZZZZZ			07:56																											
ZZZZZZ			08:00																											
ZZZZZZ			08:04																											
ZZZZZZ			08:08																											
ZZZZZZ			08:12																											
ZZZZZZ			08:15																											
ZZZZZZ			08:19																											
ZZZZZZ			08:23																											
ZZZZZZ			08:27																											
ZZZZZZ			08:31																											
ZZZZZZ			08:35																											
ZZZZZZ			08:38																											
ZZZZZZ			08:42																											
ZZZZZZ			08:46																											
ZZZZZZ			08:50																											
ZZZZZZ			08:54																											
CCB 160-160013/64	1		12:03	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			08:58																											
ZZZZZZ			09:02																											
ZZZZZZ			09:05																											
ZZZZZZ			09:09																											
ZZZZZZ			09:13																											
ZZZZZZ			09:17																											
ZZZZZZ			09:21																											
ZZZZZZ			09:25																											
ZZZZZZ			09:29																											

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Instrument ID: ICP6500 Analysis Method: 6010C

Start Date: 11/26/2014 06:55 End Date: 11/26/2014 12:03

Lab Sample Id	D/F	Type	Time	Analytes																										
				Ag	Al	As	B	Ba	Be	Ca	Cd	Co	Cr	Cu	Fe	K	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Se	Si	Sn	Ti	Tl
ZZZZZZ			09:32																											
CCV 160-160013/43	1		09:36	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 160-160013/44	1		09:40	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
MB 160-159156/1-A	1	T	10:50	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LCS 160-159156/2-A	1	T	10:54	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
160-9451-1	10	T	10:57	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
160-9451-1 SD	50	T	11:01	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
160-9451-1 MS	10	T	11:05	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
160-9451-1 MSD	10	T	11:09	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
160-9451-2	10	T	11:13	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
160-9451-3	10	T	11:17	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			11:21																											
ZZZZZZ			11:24																											
CCV 160-160013/55	1		11:28	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 160-160013/56	1		11:32	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			11:36																											
ZZZZZZ			11:40																											
ZZZZZZ			11:44																											
ZZZZZZ			11:48																											
ZZZZZZ			11:51																											
160-9451-4	1	T	11:55	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCV 160-160013/63	1		11:59	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Prep Types:
T = Total/NA

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Instrument ID: ICP6500 Analysis Method: 6010C

Start Date: 11/26/2014 06:55 End Date: 11/26/2014 12:03

Lab Sample Id	D/F	Type	Time	Analytes																										
				U	V	Zn																								
CCV 160-160013/63	1		11:59	X	X	X																								
160-9451-4	1	T	11:55	X	X	X																								
ZZZZZZ			11:51																											
ZZZZZZ			11:48																											
ZZZZZZ			11:44																											
ZZZZZZ			11:40																											
ZZZZZZ			11:36																											
CCB 160-160013/56	1		11:32	X	X	X																								
CCV 160-160013/55	1		11:28	X	X	X																								
ZZZZZZ			11:24																											
ZZZZZZ			11:21																											
160-9451-3	10	T	11:17	X	X	X																								
160-9451-2	10	T	11:13	X	X	X																								
160-9451-1 MSD	10	T	11:09	X	X	X																								
160-9451-1 MS	10	T	11:05	X	X	X																								
160-9451-1 SD	50	T	11:01	X	X	X																								
160-9451-1	10	T	10:57	X	X	X																								
LCS 160-159156/2-A	1	T	10:54	X	X	X																								
MB 160-159156/1-A	1	T	10:50	X	X	X																								
CCB 160-160013/44	1		09:40	X	X	X																								
CCV 160-160013/43	1		09:36	X	X	X																								
ZZZZZZ			09:32																											
ZZZZZZ			09:29																											
ZZZZZZ			09:25																											
ZZZZZZ			09:21																											
ZZZZZZ			09:17																											
ZZZZZZ			09:13																											
ZZZZZZ			09:09																											
ZZZZZZ			09:05																											
ZZZZZZ			09:02																											
ZZZZZZ			08:58																											
CCB 160-160013/64	1		12:03	X	X	X																								
ZZZZZZ			08:54																											
ZZZZZZ			08:50																											
ZZZZZZ			08:46																											
ZZZZZZ			08:42																											
ZZZZZZ			08:38																											
ZZZZZZ			08:35																											
ZZZZZZ			08:31																											
ZZZZZZ			08:27																											
ZZZZZZ			08:23																											
ZZZZZZ			08:19																											

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Instrument ID: ICP6500 Analysis Method: 6010C

Start Date: 11/26/2014 06:55 End Date: 11/26/2014 12:03

Lab Sample Id	D/F	Type	Time	Analytes																										
				U	V	Zn																								
ZZZZZZ			08:15																											
ZZZZZZ			08:12																											
ZZZZZZ			08:08																											
ZZZZZZ			08:04																											
ZZZZZZ			08:00																											
ZZZZZZ			07:56																											
ZZZZZZ			07:52																											
ZZZZZZ			07:48																											
ZZZZZZ			07:45																											
ZZZZZZ			07:41																											
CCB 160-160013/12	1		07:37	X	X	X																								
CCV 160-160013/11	1		07:33	X	X	X																								
LRC 160-160013/10	1		07:29	X	X	X																								
ICSAB 160-160013/9	1		07:26	X	X	X																								
ICSA 160-160013/8	1		07:22	X	X	X																								
CRI 160-160013/7	1		07:18	X	X	X																								
ICB 160-160013/6	1		07:14	X	X	X																								
ICV 160-160013/5	1		07:10	X	X	X																								
IC 160-160013/4			07:07	X	X	X																								
IC 160-160013/3			07:03	X	X	X																								
IC 160-160013/2			06:59	X	X	X																								
ICIS 160-160013/1	1		06:55	X	X	X																								

Prep Types:
T = Total/NA

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Instrument ID: ICP6500 Analysis Method: 6010C

Start Date: 12/05/2014 12:11 End Date: 12/05/2014 22:25

Lab Sample Id	D/F	Type	Time	Analytes																										
				Ag	Al	As	B	Ba	Be	Ca	Cd	Co	Cr	Cu	Fe	K	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Se	Si	Sn	Ti	Tl
ICIS 160-161515/1	1		12:11	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
IC 160-161515/2			12:15	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
IC 160-161515/3			12:18	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
IC 160-161515/4			12:22	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICV 160-161515/5	1		12:26	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICB 160-161515/6	1		12:30	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CRI 160-161515/7	1		12:34	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICSA 160-161515/8	1		12:38	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICSAB 160-161515/9	1		12:42	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LRC 160-161515/10	1		12:45	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCV 160-161515/11	1		12:49	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 160-161515/12	1		12:53	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCV 160-161515/13			12:57																											
CCB 160-161515/14			13:00																											
ZZZZZZ			13:28																											
ZZZZZZ			13:32																											
ZZZZZZ			13:36																											
ZZZZZZ			13:39																											
ZZZZZZ			13:43																											
ZZZZZZ			13:47																											
ZZZZZZ			13:50																											
ZZZZZZ			13:54																											
ZZZZZZ			13:58																											
ZZZZZZ			14:02																											
CCV 160-161515/25			14:05																											
CCB 160-161515/26			14:09																											
ZZZZZZ			14:13																											
ZZZZZZ			14:17																											
ZZZZZZ			14:21																											
ZZZZZZ			14:24																											
ZZZZZZ			14:28																											
ZZZZZZ			14:32																											
ZZZZZZ			14:36																											
ZZZZZZ			14:40																											
ZZZZZZ			14:43																											
ZZZZZZ			14:47																											
CCV 160-161515/37			14:50																											
CCB 160-161515/38			14:54																											
ZZZZZZ			14:58																											
ZZZZZZ			15:02																											
ZZZZZZ			15:06																											
ZZZZZZ			15:10																											

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Instrument ID: ICP6500 Analysis Method: 6010C

Start Date: 12/05/2014 12:11 End Date: 12/05/2014 22:25

Lab Sample Id	D/F	Type	Time	Analytes																										
				Ag	Al	As	B	Ba	Be	Ca	Cd	Co	Cr	Cu	Fe	K	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Se	Si	Sn	Ti	Tl
ZZZZZZ			15:14																											
ZZZZZZ			15:18																											
ZZZZZZ			15:22																											
ZZZZZZ			15:25																											
ZZZZZZ			15:29																											
ZZZZZZ			15:33																											
CCV 160-161515/49			15:37																											
CCB 160-161515/50			15:40																											
ZZZZZZ			15:44																											
ZZZZZZ			15:48																											
ZZZZZZ			15:52																											
ZZZZZZ			15:56																											
ZZZZZZ			16:00																											
ZZZZZZ			16:04																											
ZZZZZZ			16:08																											
ZZZZZZ			16:11																											
ZZZZZZ			16:15																											
ZZZZZZ			16:19																											
CCV 160-161515/61	1		16:22	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 160-161515/62	1		16:26	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			16:30																											
ZZZZZZ			16:34																											
LB 160-157827/1-B	1	D	16:38	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LCS 160-160503/2-A	1	T	16:42	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
160-9451-1	10	D	16:45	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
160-9451-1 SD	50	D	16:49	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
160-9451-1 MS	10	D	16:53	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
160-9451-1 MSD	10	D	16:57	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
160-9451-2	10	D	17:00	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
160-9451-3	10	D	17:04	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCV 160-161515/73	1		17:08	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 160-161515/74	1		17:12	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
160-9451-4	1	D	17:16	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			17:20																											
ZZZZZZ			17:24																											
ZZZZZZ			17:27																											
ZZZZZZ			17:31																											
ZZZZZZ			17:35																											
ZZZZZZ			17:39																											
ZZZZZZ			17:42																											
ZZZZZZ			17:46																											
ZZZZZZ			17:50																											

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Instrument ID: ICP6500 Analysis Method: 6010C

Start Date: 12/05/2014 12:11 End Date: 12/05/2014 22:25

Lab Sample Id	D/F	Type	Time	Analytes																										
				Ag	Al	As	B	Ba	Be	Ca	Cd	Co	Cr	Cu	Fe	K	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Se	Si	Sn	Ti	Tl
CCV 160-161515/85	1		17:54	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 160-161515/86	1		17:58	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			18:02																											
ZZZZZZ			18:06																											
ZZZZZZ			18:09																											
ZZZZZZ			18:13																											
ZZZZZZ			18:17																											
ZZZZZZ			18:21																											
ZZZZZZ			18:25																											
ZZZZZZ			18:29																											
ZZZZZZ			18:32																											
ZZZZZZ			18:36																											
CCV 160-161515/97			18:40																											
CCB 160-161515/98			18:44																											
ZZZZZZ			18:47																											
ZZZZZZ			18:51																											
ZZZZZZ			18:55																											
ZZZZZZ			18:59																											
ZZZZZZ			19:02																											
ZZZZZZ			19:06																											
ZZZZZZ			19:10																											
ZZZZZZ			19:14																											
ZZZZZZ			19:17																											
ZZZZZZ			19:21																											
CCV 160-161515/109			19:25																											
CCB 160-161515/110			19:29																											
ZZZZZZ			19:33																											
ZZZZZZ			19:36																											
ZZZZZZ			19:40																											
ZZZZZZ			19:44																											
ZZZZZZ			19:48																											
ZZZZZZ			19:52																											
ZZZZZZ			19:55																											
ZZZZZZ			19:59																											
ZZZZZZ			20:03																											
ZZZZZZ			20:07																											
CCV 160-161515/121			20:11																											
CCB 160-161515/122			20:14																											
ZZZZZZ			20:18																											
ZZZZZZ			20:22																											
ZZZZZZ			20:26																											
ZZZZZZ			20:30																											

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Instrument ID: ICP6500 Analysis Method: 6010C

Start Date: 12/05/2014 12:11 End Date: 12/05/2014 22:25

Lab Sample Id	D/F	Type	Time	Analytes																										
				Ag	Al	As	B	Ba	Be	Ca	Cd	Co	Cr	Cu	Fe	K	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Se	Si	Sn	Ti	Tl
ZZZZZZ			20:33																											
ZZZZZZ			20:37																											
ZZZZZZ			20:40																											
CCB 160-161515/156			22:25																											
ZZZZZZ			20:44																											
ZZZZZZ			20:48																											
ZZZZZZ			20:51																											
CCV 160-161515/133			20:55																											
CCB 160-161515/134			20:59																											
ZZZZZZ			21:03																											
ZZZZZZ			21:07																											
ZZZZZZ			21:11																											
ZZZZZZ			21:15																											
ZZZZZZ			21:18																											
ZZZZZZ			21:22																											
ZZZZZZ			21:26																											
ZZZZZZ			21:30																											
ZZZZZZ			21:34																											
ZZZZZZ			21:38																											
CCV 160-161515/145			21:42																											
CCB 160-161515/146			21:46																											
ZZZZZZ			21:50																											
ZZZZZZ			21:54																											
ZZZZZZ			21:58																											
ZZZZZZ			22:01																											
ZZZZZZ			22:05																											
ZZZZZZ			22:09																											
ZZZZZZ			22:13																											
ZZZZZZ			22:17																											
CCV 160-161515/155			22:21																											

Prep Types:
D = Dissolved
T = Total/NA

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Instrument ID: ICP6500 Analysis Method: 6010C

Start Date: 12/05/2014 12:11 End Date: 12/05/2014 22:25

Lab Sample Id	D/F	Type	Time	Analytes																										
				U	V	Zn																								
CCV 160-161515/155			22:21																											
ZZZZZZ			22:17																											
ZZZZZZ			22:13																											
ZZZZZZ			22:09																											
ZZZZZZ			22:05																											
ZZZZZZ			22:01																											
ZZZZZZ			21:58																											
ZZZZZZ			21:54																											
ZZZZZZ			21:50																											
CCB 160-161515/146			21:46																											
CCV 160-161515/145			21:42																											
ZZZZZZ			21:38																											
ZZZZZZ			21:34																											
ZZZZZZ			21:30																											
ZZZZZZ			21:26																											
ZZZZZZ			21:22																											
ZZZZZZ			21:18																											
ZZZZZZ			21:15																											
ZZZZZZ			21:11																											
ZZZZZZ			21:07																											
ZZZZZZ			21:03																											
CCB 160-161515/134			20:59																											
CCV 160-161515/133			20:55																											
ZZZZZZ			20:51																											
ZZZZZZ			20:48																											
ZZZZZZ			20:44																											
CCB 160-161515/156			22:25																											
ZZZZZZ			20:40																											
ZZZZZZ			20:37																											
ZZZZZZ			20:33																											
ZZZZZZ			20:30																											
ZZZZZZ			20:26																											
ZZZZZZ			20:22																											
ZZZZZZ			20:18																											
CCB 160-161515/122			20:14																											
CCV 160-161515/121			20:11																											
ZZZZZZ			20:07																											
ZZZZZZ			20:03																											
ZZZZZZ			19:59																											
ZZZZZZ			19:55																											
ZZZZZZ			19:52																											
ZZZZZZ			19:48																											

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Instrument ID: ICP6500 Analysis Method: 6010C

Start Date: 12/05/2014 12:11 End Date: 12/05/2014 22:25

Lab Sample Id	D/F	Type	Time	Analytes																										
				U	V	Zn																								
ZZZZZZ			19:44																											
ZZZZZZ			19:40																											
ZZZZZZ			19:36																											
ZZZZZZ			19:33																											
CCB 160-161515/110			19:29																											
CCV 160-161515/109			19:25																											
ZZZZZZ			19:21																											
ZZZZZZ			19:17																											
ZZZZZZ			19:14																											
ZZZZZZ			19:10																											
ZZZZZZ			19:06																											
ZZZZZZ			19:02																											
ZZZZZZ			18:59																											
ZZZZZZ			18:55																											
ZZZZZZ			18:51																											
ZZZZZZ			18:47																											
CCB 160-161515/98			18:44																											
CCV 160-161515/97			18:40																											
ZZZZZZ			18:36																											
ZZZZZZ			18:32																											
ZZZZZZ			18:29																											
ZZZZZZ			18:25																											
ZZZZZZ			18:21																											
ZZZZZZ			18:17																											
ZZZZZZ			18:13																											
ZZZZZZ			18:09																											
ZZZZZZ			18:06																											
ZZZZZZ			18:02																											
CCB 160-161515/86	1		17:58	X	X	X																								
CCV 160-161515/85	1		17:54	X	X	X																								
ZZZZZZ			17:50																											
ZZZZZZ			17:46																											
ZZZZZZ			17:42																											
ZZZZZZ			17:39																											
ZZZZZZ			17:35																											
ZZZZZZ			17:31																											
ZZZZZZ			17:27																											
ZZZZZZ			17:24																											
ZZZZZZ			17:20																											
160-9451-4	1	D	17:16	X	X	X																								
CCB 160-161515/74	1		17:12	X	X	X																								
CCV 160-161515/73	1		17:08	X	X	X																								

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Instrument ID: ICP6500 Analysis Method: 6010C

Start Date: 12/05/2014 12:11 End Date: 12/05/2014 22:25

Lab Sample Id	D/F	Type	Time	Analytes																									
				U	V	Zn																							
160-9451-3	10	D	17:04	X	X	X																							
160-9451-2	10	D	17:00	X	X	X																							
160-9451-1 MSD	10	D	16:57	X	X	X																							
160-9451-1 MS	10	D	16:53	X	X	X																							
160-9451-1 SD	50	D	16:49	X	X	X																							
160-9451-1	10	D	16:45	X	X	X																							
LCS 160-160503/2-A	1	T	16:42	X	X	X																							
LB 160-157827/1-B	1	D	16:38	X	X	X																							
ZZZZZZ			16:34																										
ZZZZZZ			16:30																										
CCB 160-161515/62	1		16:26	X	X	X																							
CCV 160-161515/61	1		16:22	X	X	X																							
ZZZZZZ			16:19																										
ZZZZZZ			16:15																										
ZZZZZZ			16:11																										
ZZZZZZ			16:08																										
ZZZZZZ			16:04																										
ZZZZZZ			16:00																										
ZZZZZZ			15:56																										
ZZZZZZ			15:52																										
ZZZZZZ			15:48																										
ZZZZZZ			15:44																										
CCB 160-161515/50			15:40																										
CCV 160-161515/49			15:37																										
ZZZZZZ			15:33																										
ZZZZZZ			15:29																										
ZZZZZZ			15:25																										
ZZZZZZ			15:22																										
ZZZZZZ			15:18																										
ZZZZZZ			15:14																										
ZZZZZZ			15:10																										
ZZZZZZ			15:06																										
ZZZZZZ			15:02																										
ZZZZZZ			14:58																										
CCB 160-161515/38			14:54																										
CCV 160-161515/37			14:50																										
ZZZZZZ			14:47																										
ZZZZZZ			14:43																										
ZZZZZZ			14:40																										
ZZZZZZ			14:36																										
ZZZZZZ			14:32																										
ZZZZZZ			14:28																										

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Instrument ID: ICP6500 Analysis Method: 6010C

Start Date: 12/05/2014 12:11 End Date: 12/05/2014 22:25

Lab Sample Id	D/F	Type	Time	Analytes																										
				U	V	Zn																								
ZZZZZZ			14:24																											
ZZZZZZ			14:21																											
ZZZZZZ			14:17																											
ZZZZZZ			14:13																											
CCB 160-161515/26			14:09																											
CCV 160-161515/25			14:05																											
ZZZZZZ			14:02																											
ZZZZZZ			13:58																											
ZZZZZZ			13:54																											
ZZZZZZ			13:50																											
ZZZZZZ			13:47																											
ZZZZZZ			13:43																											
ZZZZZZ			13:39																											
ZZZZZZ			13:36																											
ZZZZZZ			13:32																											
ZZZZZZ			13:28																											
CCB 160-161515/14			13:00																											
CCV 160-161515/13			12:57																											
CCB 160-161515/12	1		12:53	X	X	X																								
CCV 160-161515/11	1		12:49	X	X	X																								
LRC 160-161515/10	1		12:45	X	X	X																								
ICSAB 160-161515/9	1		12:42	X	X	X																								
ICSA 160-161515/8	1		12:38	X	X	X																								
CRI 160-161515/7	1		12:34	X	X	X																								
ICB 160-161515/6	1		12:30	X	X	X																								
ICV 160-161515/5	1		12:26	X	X	X																								
IC 160-161515/4			12:22	X	X	X																								
IC 160-161515/3			12:18	X	X	X																								
IC 160-161515/2			12:15	X	X	X																								
ICIS 160-161515/1	1		12:11	X	X	X																								

Prep Types:
D = Dissolved
T = Total/NA

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Instrument ID: HAA2 Analysis Method: 7470A

Start Date: 12/04/2014 09:49 End Date: 12/04/2014 17:29

Lab Sample Id	D/F	Type	Time	Analytes																								
				Hg																								
IC 160-161064/1			09:49	X																								
IC 160-161064/2			09:51	X																								
IC 160-161064/3			09:56	X																								
IC 160-161064/4			09:58	X																								
IC 160-161064/5			10:00	X																								
IC 160-161064/6			10:13	X																								
ICV 160-161064/7	1		10:16	X																								
ICB 160-161064/8	1		10:16	X																								
CCV 160-161064/9	1		10:25	X																								
CCB 160-161064/10	1		10:28	X																								
MB 160-160845/1-A	1	T	10:31	X																								
LCS 160-160845/2-A	1	T	10:33	X																								
160-9451-1	1	T	10:35	X																								
160-9451-2	1	T	10:38	X																								
160-9451-3	1	T	10:40	X																								
160-9451-4	1	T	10:42	X																								
ZZZZZZ			10:45																									
ZZZZZZ			10:47																									
ZZZZZZ			10:49																									
ZZZZZZ			10:52																									
CCV 160-161064/21	1		10:54	X																								
CCB 160-161064/22	1		10:56	X																								
ZZZZZZ			10:59																									
ZZZZZZ			11:01																									
ZZZZZZ			11:05																									
ZZZZZZ			11:07																									
ZZZZZZ			11:09																									
ZZZZZZ			11:12																									
ZZZZZZ			11:15																									
ZZZZZZ			11:18																									
ZZZZZZ			11:20																									
ZZZZZZ			11:23																									
CCV 160-161064/33	1		11:25	X																								
CCB 160-161064/34	1		11:28	X																								
ZZZZZZ			11:31																									
ZZZZZZ			11:33																									
ZZZZZZ			11:35																									
ZZZZZZ			11:37																									
ZZZZZZ			11:40																									
ZZZZZZ			11:42																									
ZZZZZZ			11:44																									
ZZZZZZ			11:46																									

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Instrument ID: HAA2 Analysis Method: 7470A

Start Date: 12/04/2014 09:49 End Date: 12/04/2014 17:29

Lab Sample Id	D/F	Type	Time	Analytes																								
				Hg																								
ZZZZZZ			11:49																									
ZZZZZZ			11:51																									
CCV 160-161064/45			11:53																									
CCB 160-161064/46			11:56																									
ZZZZZZ			11:59																									
ZZZZZZ			12:01																									
ZZZZZZ			12:04																									
ZZZZZZ			12:06																									
ZZZZZZ			12:08																									
ZZZZZZ			12:11																									
ZZZZZZ			12:13																									
ZZZZZZ			12:16																									
ZZZZZZ			12:19																									
ZZZZZZ			12:21																									
CCV 160-161064/57			12:24																									
CCB 160-161064/58			12:27																									
ZZZZZZ			12:30																									
ZZZZZZ			12:32																									
ZZZZZZ			12:34																									
ZZZZZZ			12:37																									
ZZZZZZ			12:39																									
ZZZZZZ			12:42																									
ZZZZZZ			12:44																									
ZZZZZZ			12:46																									
ZZZZZZ			12:49																									
ZZZZZZ			12:51																									
CCV 160-161064/69			12:54																									
CCB 160-161064/70			12:56																									
ZZZZZZ			12:59																									
ZZZZZZ			13:01																									
ZZZZZZ			13:04																									
ZZZZZZ			13:07																									
ZZZZZZ			13:09																									
ZZZZZZ			13:11																									
ZZZZZZ			13:13																									
ZZZZZZ			13:16																									
ZZZZZZ			13:19																									
ZZZZZZ			13:21																									
CCV 160-161064/81			13:23																									
CCB 160-161064/82			13:26																									
ZZZZZZ			13:29																									
ZZZZZZ			13:31																									

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Instrument ID: HAA2 Analysis Method: 7470A

Start Date: 12/04/2014 09:49 End Date: 12/04/2014 17:29

Lab Sample Id	D/F	Type	Time	Analytes																								
				Hg																								
ZZZZZZ			13:34																									
ZZZZZZ			13:36																									
ZZZZZZ			13:38																									
ZZZZZZ			13:41																									
ZZZZZZ			13:44																									
ZZZZZZ			13:46																									
ZZZZZZ			13:49																									
ZZZZZZ			13:52																									
CCV 160-161064/93			13:54																									
CCB 160-161064/94			13:57																									
ZZZZZZ			14:00																									
ZZZZZZ			14:02																									
ZZZZZZ			14:04																									
ZZZZZZ			14:06																									
ZZZZZZ			14:08																									
CCV 160-161064/100			14:11																									
CCB 160-161064/101			14:52																									
CCV 160-161064/102			17:04																									
CCB 160-161064/103			17:07																									
ZZZZZZ			17:09																									
ZZZZZZ			17:15																									
ZZZZZZ			17:19																									
CCV 160-161064/107			17:26																									
CCB 160-161064/108			17:29																									

Prep Types:
T = Total/NA

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Instrument ID: HAA2 Analysis Method: 7470A

Start Date: 12/06/2014 11:21 End Date: 12/08/2014 08:54

Lab Sample Id	D/F	Type	Time	Analytes																								
				Hg																								
IC 160-161529/1			11:21	X																								
IC 160-161529/2			11:24	X																								
IC 160-161529/3			11:26	X																								
IC 160-161529/4			11:28	X																								
IC 160-161529/5			11:31	X																								
IC 160-161529/6			11:33	X																								
ICV 160-161529/7	1		11:36	X																								
ICB 160-161529/8	1		11:39	X																								
CCV 160-161529/9			11:54																									
CCB 160-161529/10			11:56																									
ZZZZZZ			11:59																									
ZZZZZZ			12:01																									
ZZZZZZ			12:06																									
ZZZZZZ			12:09																									
ZZZZZZ			12:12																									
ZZZZZZ			12:14																									
ZZZZZZ			12:16																									
ZZZZZZ			12:19																									
ZZZZZZ			12:22																									
CCV 160-161529/20			12:24																									
CCB 160-161529/21			12:27																									
ZZZZZZ			12:30																									
ZZZZZZ			12:32																									
ZZZZZZ			12:34																									
ZZZZZZ			12:36																									
ZZZZZZ			12:39																									
ZZZZZZ			12:41																									
ZZZZZZ			12:43																									
ZZZZZZ			12:45																									
ZZZZZZ			12:48																									
ZZZZZZ			12:50																									
CCV 160-161529/32			12:53																									
CCB 160-161529/33			12:55																									
ZZZZZZ			12:58																									
ZZZZZZ			13:00																									
ZZZZZZ			13:02																									
ZZZZZZ			13:05																									
ZZZZZZ			13:07																									
ZZZZZZ			13:10																									
ZZZZZZ			13:12																									
ZZZZZZ			13:15																									
ZZZZZZ			13:17																									

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Instrument ID: HAA2 Analysis Method: 7470A

Start Date: 12/06/2014 11:21 End Date: 12/08/2014 08:54

Lab Sample Id	D/F	Type	Time	Analytes																								
				Hg																								
ZZZZZZ			13:19																									
CCV 160-161529/44			13:21																									
CCB 160-161529/45			13:24																									
ZZZZZZ			13:27																									
ZZZZZZ			13:29																									
ZZZZZZ			13:32																									
ZZZZZZ			13:34																									
ZZZZZZ			13:37																									
ZZZZZZ			13:39																									
ZZZZZZ			13:41																									
ZZZZZZ			13:44																									
ZZZZZZ			13:46																									
ZZZZZZ			13:49																									
CCV 160-161529/56	1		13:52	X																								
CCB 160-161529/57	1		13:54	X																								
LB 160-157827/1-D	1	D	13:57	X																								
LCS 160-161422/2-A	1	T	13:59	X																								
160-9451-1	1	D	14:01	X																								
160-9451-2	1	D	14:04	X																								
160-9451-3	1	D	14:06	X																								
160-9451-4	1	D	14:09	X																								
160-9451-4 SD	5	D	14:11	X																								
160-9451-4 MS	1	D	14:13	X																								
160-9451-4 MSD	1	D	14:15	X																								
ZZZZZZ			14:18																									
CCV 160-161529/68	1		14:21	X																								
CCB 160-161529/69	1		14:23	X																								
ZZZZZZ			14:26																									
ZZZZZZ			14:28																									
ZZZZZZ			14:31																									
ZZZZZZ			14:34																									
ZZZZZZ			14:36																									
ZZZZZZ			14:39																									
ZZZZZZ			14:41																									
ZZZZZZ			14:44																									
ZZZZZZ			14:46																									
ZZZZZZ			14:48																									
CCV 160-161529/80			14:51																									
CCB 160-161529/81			14:53																									
ZZZZZZ			14:56																									
CCV 160-161529/83			14:58																									
CCB 160-161529/84			15:01																									

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Instrument ID: HAA2 Analysis Method: 7470A

Start Date: 12/06/2014 11:21 End Date: 12/08/2014 08:54

Lab Sample Id	D/F	Type	Time	Analytes																								
				Hg																								
CCV 160-161529/85			08:22																									
CCB 160-161529/86			08:24																									
ZZZZZZ			08:27																									
ZZZZZZ			08:30																									
CCV 160-161529/89			08:32																									
ZZZZZZ			08:35																									
CCB 160-161529/91			08:54																									

Prep Types:
D = Dissolved
T = Total/NA

FORM XIII-IN

FC 11/26/14

ABATCH: 160013

File: 112614C1

	Pos ID	Rack	Row	Col	Type	Samplename	Comment	Custom ID1	Custom ID2	Custom ID3
1	1001	3	1	1	Unk	~~LB 160-153858/1-B~~				
2	1002	3	1	2	Unk	LCS 160-158796/2-				
3	1003	3	1	3	Unk	LCSD 160-158796/3				
4	1004	3	1	4	Unk	LCS 160-158796/5-				
5	1005	3	1	5	Unk	LCSD 160-158796/6				
6	1006	3	1	6	Unk	160-9093-G-1-K	DF=10			
7	1007	3	1	7	Unk	160-9093-G-1-K SD	DF=50			
8	1008	3	1	8	Unk	MB 160-158541/1-A	Already reported			
9	1009	3	1	9	Unk	LCSSRM 160-15854	DF=2			
10	1010	3	1	10	Unk	160-9129-E-1-I	DF=10			
11	1011	3	1	11	Unk	160-9129-E-1-I SD	DF=50			
12	1012	3	1	12	Unk	160-9129-E-1-J MS	DF=10			
13	1013	3	1	13	Unk	160-9129-E-1-K MS	DF=10			
14	1014	3	1	14	Unk	160-9129-E-2-E	DF=10			
15	1015	3	1	15	Unk	160-9129-E-3-E	DF=10			
16	1016	3	2	1	Unk	160-9129-E-4-F	DF=10			
17	1017	3	2	2	Unk	160-9129-E-5-E	DF=10			
18	1018	3	2	3	Unk	160-9129-E-6-E	DF=10			
19	1019	3	2	4	Unk	160-9129-E-7-E	DF=10			
20	1020	3	2	5	Unk	160-9129-E-8-E	DF=10			
21	1021	3	2	6	Unk	160-9129-E-9-E	DF=10			
22	1022	3	2	7	Unk	TEST 1	DF=50			
23	1023	3	2	8	Unk	TEST 14	DF=50			
24	1024	3	2	9	Unk	TEST 21	DF=50			
25	1025	3	2	10	Unk	TEST 4				
26	1026	3	2	11	Unk	~~TEST 5~~				
27	1027	3	2	12	Unk	MB 160-159156/1-A				
28	1028	3	2	13	Unk	LCS 160-159156/2-				
29	1029	3	2	14	Unk	160-9451-C-1-A	DF=10			
30	1030	3	2	15	Unk	160-9451-C-1-A SD	DF=50			
31	1031	3	3	1	Unk	160-9451-C-1-B MS	DF=10			
32	1032	3	3	2	Unk	160-9451-C-1-C MS	DF=10			
33	1033	3	3	3	Unk	160-9451-C-2-A	DF=10			
34	1034	3	3	4	Unk	160-9451-C-3-A	DF=10			
35	1035	3	3	5	Unk	~~160-9451-C-4-A~~	~~DF=10~~ rerun w/o Dilution			
36	1036	3	3	6	Unk	~~MB 160-159179/1-A~~				
37	1037	3	3	7	Unk	LCS 160-159179/2-				
38	1038	3	3	8	Unk	160-9422-B-19-A				
39	1039	3	3	9	Unk	160-9422-B-19-A SD				
40	1040	3	3	10	Unk	160-9422-B-19-B M				
41	1041	3	3	11	Unk	~~160-9422-B-19-C M~~				
42	1042	3	3	12	Unk	160-9451-C-4-A	All			

FC 11/26/14

All

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	11/26/2014 7:10:45	11/26/2014 7:10:45	Linear	1/Conc	-0.000443	0.752011	0.000000	1.000000
Al 396.152 { 85}	11/26/2014 7:10:45	11/26/2014 7:10:45	Linear	1/Conc	-0.003961	0.160131	0.000000	1.000000
As 189.042 {478}	11/26/2014 7:10:45	11/26/2014 7:10:45	Linear	1/Conc	-0.000082	0.040610	0.000000	1.000000
B 249.678 {135}	11/26/2014 7:10:45	11/26/2014 7:10:45	Linear	1/Conc	0.000511	0.139381	0.000000	1.000000
Ba 455.403 { 74}	11/26/2014 7:10:45	11/26/2014 7:10:45	Linear	1/Conc	0.027403	13.506862	0.000000	1.000000
Be 313.042 {108}	11/26/2014 7:10:45	11/26/2014 7:10:45	Linear	1/Conc	0.001220	19.310561	0.000000	1.000000
Bi 223.061 {451}	11/26/2014 7:10:45	11/26/2014 7:10:45	Linear	1/Conc	0.000264	0.042205	0.000000	1.000000
Ca 184.006 {483}	11/26/2014 7:10:45	11/26/2014 7:10:45	Linear	1/Conc	-0.000316	0.076235	0.000000	1.000000
Cd 228.802 {447}	11/26/2014 7:10:45	11/26/2014 7:10:45	Linear	1/Conc	-0.000229	0.702170	0.000000	1.000000
Co 228.616 {448}	11/26/2014 7:10:45	11/26/2014 7:10:45	Linear	1/Conc	0.000066	0.268895	0.000000	1.000000
Cr 283.563 {119}	11/26/2014 7:10:45	11/26/2014 7:10:45	Linear	1/Conc	0.001132	0.135011	0.000000	1.000000
Cu 217.894 {455}	11/26/2014 7:10:45	11/26/2014 7:10:45	Linear	1/Conc	0.000053	0.055208	0.000000	1.000000
Fe 259.940 {130}	11/26/2014 7:10:45	11/26/2014 7:10:45	Linear	1/Conc	0.000526	0.301764	0.000000	1.000000
K 766.490 { 44}	11/26/2014 7:10:45	11/26/2014 7:10:45	Linear	1/Conc	0.003079	0.135966	0.000000	1.000000
Li 670.784 { 50}	11/26/2014 7:10:45	11/26/2014 7:10:45	Linear	1/Conc	-0.012067	3.262551	0.000000	1.000000
Mg 279.806 {121}	11/26/2014 7:10:45	11/26/2014 7:10:45	Linear	1/Conc	0.000368	0.042903	0.000000	1.000000
Mn 257.610 {131}	11/26/2014 7:10:45	11/26/2014 7:10:45	Linear	1/Conc	0.000440	1.593338	0.000000	1.000000
Mo 202.030 {467}	11/26/2014 7:10:45	11/26/2014 7:10:45	Linear	1/Conc	-0.000000	0.293447	0.000000	1.000000
Na 589.592 { 57}	11/26/2014 7:10:45	11/26/2014 7:10:45	Linear	1/Conc	-0.040721	0.443704	0.000000	1.000000
Ni 221.647 {452}	11/26/2014 7:10:45	11/26/2014 7:10:45	Linear	1/Conc	0.000173	0.423976	0.000000	1.000000
P 177.495 {490}	11/26/2014 7:10:45	11/26/2014 7:10:45	Linear	1/Conc	-0.000040	0.046620	0.000000	1.000000
Pb 220.353 {453}	11/26/2014 7:10:45	11/26/2014 7:10:45	Linear	1/Conc	-0.000089	0.081546	0.000000	1.000000
S 182.034 {485}	11/26/2014 7:10:45	11/26/2014 7:10:45	Linear	1/Conc	0.000244	0.023630	0.000000	1.000000
Sb 206.833 {463}	11/26/2014 7:10:46	11/26/2014 7:10:46	Linear	1/Conc	0.000091	0.049073	0.000000	1.000000
Se 196.090 {472}	11/26/2014 7:10:46	11/26/2014 7:10:46	Linear	1/Conc	0.000101	0.030735	0.000000	1.000000
Si 251.611 {134}	11/26/2014 7:10:46	11/26/2014 7:10:46	Linear	1/Conc	0.002836	0.075811	0.000000	1.000000
Sn 189.989 {478}	11/26/2014 7:10:46	11/26/2014 7:10:46	Linear	1/Conc	0.000016	0.093832	0.000000	1.000000
Sr 407.771 { 83}	11/26/2014 7:10:46	11/26/2014 7:10:46	Linear	1/Conc	-0.004056	21.384652	0.000000	1.000000
Th 283.231 {119}	11/26/2014 7:10:46	11/26/2014 7:10:46	Linear	1/Conc	0.002055	0.073491	0.000000	1.000000
Ti 334.941 {101}	11/26/2014 7:10:46	11/26/2014 7:10:46	Linear	1/Conc	0.004072	1.296167	0.000000	1.000000
Tl 190.856 {477}	11/26/2014 7:10:46	11/26/2014 7:10:46	Linear	1/Conc	-0.000279	0.048639	0.000000	1.000000
U 367.007 { 92}	11/26/2014 7:10:46	11/26/2014 7:10:46	Linear	1/Conc	0.061984	0.050425	0.000000	1.000000
V 290.882 {116}	11/26/2014 7:10:46	11/26/2014 7:10:46	Linear	1/Conc	0.001793	0.254666	0.000000	1.000000
Y 371.030 { 91}*	11/26/2014 7:10:46	11/26/2014 7:10:46	Linear	1/Conc	1.000000	0.000000	0.000000	1.000000
Zn 213.856 {458}	11/26/2014 7:10:46	11/26/2014 7:10:46	Linear	1/Conc	0.000259	0.372031	0.000000	1.000000

Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.999685	0.000148	0.000880	0.002933	OK.	1.000000	0.000000	1	0
Al 396.152 { 85}	0.999988	0.000196	0.008816	0.029387	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999673	0.000018	0.001812	0.006040	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999431	0.000257	0.003035	0.010116	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999996	0.001549	0.000148	0.000492	OK.	1.000000	0.000000	1	0
Be 313.042 {108}	0.999993	0.000877	0.000035	0.000118	OK.	1.000000	0.000000	1	0
Bi 223.061 {451}	0.999702	0.000080	0.002967	0.009890	OK.	1.000000	0.000000	1	0
Ca 184.006 {483}	0.999847	0.000734	0.000968	0.003228	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.999730	0.000200	0.000176	0.000586	OK.	1.000000	0.000000	1	0
Co 228.616 {448}	0.999868	0.000170	0.000367	0.001222	OK.	1.000000	0.000000	1	0
Cr 283.563 {119}	0.999869	0.000038	0.000992	0.003307	OK.	1.000000	0.000000	1	0
Cu 217.894 {455}	0.999675	0.000039	0.002125	0.007083	OK.	1.000000	0.000000	1	0
Fe 259.940 {130}	1.000000	0.000042	0.001423	0.004744	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999988	0.000829	0.023623	0.078743	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999983	0.000738	0.001004	0.003347	OK.	1.000000	0.000000	1	0
Mg 279.806 {121}	0.999910	0.000316	0.010343	0.034478	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999999	0.000039	0.000262	0.000874	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999631	0.000124	0.000301	0.001004	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999999	0.000326	0.007241	0.024137	OK.	1.000000	0.000000	1	0
Ni 221.647 {452}	0.999892	0.000216	0.000319	0.001064	OK.	1.000000	0.000000	1	0
P 177.495 {490}	0.999977	0.000086	0.001598	0.005328	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.999840	0.000025	0.001390	0.004634	OK.	1.000000	0.000000	1	0
S 182.034 {485}	0.999640	0.000789	0.002996	0.009986	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999595	0.000011	0.002262	0.007539	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.999549	0.000009	0.002717	0.009055	OK.	1.000000	0.000000	1	0
Si 251.611 {134}	0.999996	0.000024	0.005628	0.018761	OK.	1.000000	0.000000	1	0
Sn 189.989 {478}	0.999833	0.000094	0.000716	0.002386	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	1.000000	0.000210	0.000060	0.000200	OK.	1.000000	0.000000	1	0
Th 283.231 {119}	0.999809	0.000112	0.004276	0.014252	OK.	1.000000	0.000000	1	0
Ti 334.941 {101}	1.000000	0.000023	0.000667	0.002222	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999893	0.000008	0.001746	0.005821	OK.	1.000000	0.000000	1	0
U 367.007 { 92}	0.999708	0.000179	0.016166	0.053887	OK.	1.000000	0.000000	1	0
V 290.882 {116}	1.000000	0.000005	0.002626	0.008752	OK.	1.000000	0.000000	1	0
Y 371.030 { 91}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 213.856 {458}	0.999824	0.000173	0.000196	0.000654	OK.	1.000000	0.000000	1	0

Sample Name: CALBLK1 Acquired: 11/26/2014 6:55:26 Type: Cal
Method: 2014v3(v308) Mode: IR Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.0004**	**-.0040**	**-.0001**	**.0005**	**.0274**	**.0012**	**.0003**	**-.0003**	**-.0002**
Stddev	.0002	.0010	.0001	.0003	.0007	.0010	.0001	.0000	.0002
%RSD	35.70	24.14	79.84	67.53	2.480	78.48	45.62	8.721	74.68
#1	-.0006	-.0041	-.0001	.0004	.0282	.0007	.0004	-.0003	-.0004
#2	-.0003	-.0029	-.0001	.0002	.0269	.0023	.0003	-.0004	-.0001
#3	-.0005	-.0048	.0000	.0009	.0272	.0006	.0001	-.0003	-.0001

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.0001**	**.0011**	**.0001**	**.0005**	**.0031**	**-.0121**	**.0004**	**.0004**	**.0000**
Stddev	.0001	.0001	.0001	.0002	.0022	.0036	.0001	.0007	.000
%RSD	217.2	9.061	213.2	47.58	72.15	29.43	37.11	157.9	128600.
#1	.0000	.0012	.0000	.0006	.0036	-.0139	.0005	.0011	-.0001
#2	.0000	.0010	.0000	.0002	.0050	-.0080	.0003	-.0003	.0001
#3	.0002	.0012	.0002	.0007	.0007	-.0144	.0003	.0005	.0000

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.0407**	**.0002**	**.0000**	**-.0001**	**.0002**	**.0001**	**.0001**	**.0028**	**.0000**
Stddev	.0014	.0001	.000	.0001	.0001	.0001	.0001	.0001	.0001
%RSD	3.374	76.55	387.6	118.1	25.41	125.7	65.40	4.991	579.7
#1	-.0413	.0003	.0001	-.0002	.0002	.0000	.0001	.0027	.0000
#2	-.0391	.0000	.0000	.0000	.0003	.0002	.0002	.0030	-.0001
#3	-.0417	.0002	-.0002	-.0001	.0003	.0002	.0000	.0028	.0001

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.0041**	**.0021**	**.0041**	**-.0003**	**.0620**	**.0018**	**.0003**
Stddev	.0009	.0004	.0016	.0001	.0005	.0004	.0000
%RSD	21.75	20.12	39.36	19.20	.7984	21.30	13.94
#1	-.0050	.0018	.0031	-.0003	.0619	.0019	.0003
#2	-.0033	.0025	.0032	-.0002	.0615	.0021	.0002
#3	-.0039	.0018	.0059	-.0003	.0625	.0014	.0003

Sample Name: CALBLK1 Acquired: 11/26/2014 6:55:26 Type: Cal
Method: 2014v3(v308) Mode: IR Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_3710
Units	Cts/S
Avg	4721.6
Stddev	59.9
%RSD	1.2689
#1	4767.1
#2	4744.1
#3	4653.8

Sample Name: CAL 1 Acquired: 11/26/2014 6:59:22 Type: Cal
Method: 2014v3(v308) Mode: IR Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.0077	.0279	.0003	.0087	.6962	.1004	.0085	.0828	.0033
Stddev	.0004	.0020	.0001	.0003	.0044	.0005	.0002	.0012	.0001
%RSD	4.784	7.302	28.32	3.323	.6340	.5368	2.290	1.392	1.954
#1	.0076	.0277	.0004	.0085	.6914	.1003	.0083	.0815	.0033
#2	.0075	.0259	.0003	.0087	.7000	.0999	.0086	.0834	.0032
#3	.0081	.0300	.0002	.0090	.6973	.1010	.0087	.0836	.0033

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.0144	.0022	.0014	.0317	.6699	.1558	.0418	.0244	.0118
Stddev	.0002	.0001	.0001	.0003	.0062	.0006	.0012	.0004	.0002
%RSD	1.335	4.354	3.629	.8211	.9229	.4033	2.821	1.534	1.346
#1	.0142	.0022	.0013	.0314	.6637	.1563	.0412	.0248	.0116
#2	.0146	.0023	.0014	.0317	.6700	.1551	.0431	.0245	.0118
#3	.0144	.0021	.0014	.0319	.6761	.1559	.0410	.0241	.0120

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.4005	.0183	.0116	.0006	.1188	.0005	.0005	.0329	.0097
Stddev	.0033	.0003	.0002	.0001	.0023	.0001	.0000	.0008	.0002
%RSD	.8220	1.647	1.487	21.80	1.899	20.23	2.557	2.344	2.139
#1	.4008	.0180	.0114	.0005	.1164	.0005	.0005	.0321	.0095
#2	.4037	.0183	.0117	.0007	.1190	.0006	.0005	.0331	.0097
#3	.3971	.0186	.0116	.0005	.1209	.0005	.0005	.0336	.0099

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.1065	.0155	.0299	.0008	.0893	.0146	.0086
Stddev	.0009	.0006	.0004	.0001	.0014	.0000	.0001
%RSD	.8386	3.700	1.297	7.509	1.528	.3280	.8215
#1	.1056	.0148	.0295	.0008	.0895	.0146	.0085
#2	.1074	.0156	.0301	.0009	.0905	.0146	.0085
#3	.1065	.0159	.0303	.0008	.0878	.0146	.0086

Sample Name: CAL 1 Acquired: 11/26/2014 6:59:22 Type: Cal
Method: 2014v3(v308) Mode: IR Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_3710
Units	Cts/S
Avg	4848.6
Stddev	45.8
%RSD	.94466
#1	4900.9
#2	4815.5
#3	4829.4

Sample Name: Cal 2 Acquired: 11/26/2014 7:03:17 Type: Cal
Method: 2014v3(v308) Mode: IR Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.7309	7.953	.1956	.6913	67.84	97.03	.2041	3.723	3.398
Stddev	.0062	.044	.0011	.0018	.31	.62	.0012	.016	.018
%RSD	.8419	.5584	.5380	.2601	.4571	.6362	.5991	.4273	.5349
#1	.7380	7.944	.1965	.6911	67.76	96.81	.2053	3.739	3.416
#2	.7275	7.913	.1945	.6896	67.58	96.55	.2029	3.707	3.380
#3	.7271	8.001	.1958	.6932	68.18	97.72	.2041	3.724	3.397

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1.316	.6669	.2662	15.09	6.772	16.43	2.098	7.954	.2821
Stddev	.008	.0028	.0010	.05	.027	.05	.018	.052	.0015
%RSD	.6150	.4217	.3580	.3086	.4014	.3226	.8342	.6568	.5281
#1	1.325	.6701	.2670	15.12	6.760	16.39	2.106	7.964	.2836
#2	1.310	.6658	.2651	15.04	6.753	16.40	2.078	7.898	.2806
#3	1.314	.6648	.2663	15.11	6.803	16.49	2.110	8.001	.2821

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	22.11	2.077	2.309	.3981	1.136	.0478	.0295	.3806	.4570
Stddev	.10	.011	.014	.0016	.008	.0005	.0002	.0015	.0025
%RSD	.4721	.5216	.6213	.3944	.6721	1.006	.8151	.3924	.5507
#1	22.09	2.089	2.323	.3998	1.144	.0483	.0297	.3823	.4599
#2	22.01	2.069	2.295	.3966	1.128	.0473	.0293	.3795	.4551
#3	22.22	2.072	2.308	.3979	1.136	.0478	.0297	.3800	.4561

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	106.9	.3614	6.478	.0488	.3496	1.280	1.830
Stddev	1.9	.0017	.016	.0001	.0026	.007	.012
%RSD	1.776	.4755	.2430	.2560	.7534	.5852	.6307
#1	105.7	.3628	6.475	.0489	.3526	1.284	1.842
#2	105.8	.3595	6.465	.0486	.3488	1.271	1.819
#3	109.1	.3618	6.496	.0488	.3475	1.285	1.828

Sample Name: Cal 2 Acquired: 11/26/2014 7:03:17 Type: Cal
Method: 2014v3(v308) Mode: IR Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_3710
Units	Cts/S
Avg	4894.6
Stddev	18.0
%RSD	.36712
#1	4875.5
#2	4911.2
#3	4897.1

Sample Name: Cal 3 Acquired: 11/26/2014 7:07:02 Type: Cal
Method: 2014v3(v308) Mode: IR Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1.543**	**16.08**	**.4132**	**1.392**	**134.8**	**192.5**	**.4297**	**7.704**	**7.143**
Stddev	.025	.03	.0060	.002	1.8	4.3	.0060	.112	.096
%RSD	1.617	.1864	1.447	.1567	1.321	2.243	1.388	1.455	1.337
#1	1.561	16.09	.4153	1.389	136.8	195.8	.4326	7.773	7.189
#2	1.515	16.04	.4064	1.392	133.5	187.7	.4229	7.575	7.033
#3	1.554	16.10	.4178	1.393	134.1	194.1	.4337	7.766	7.207

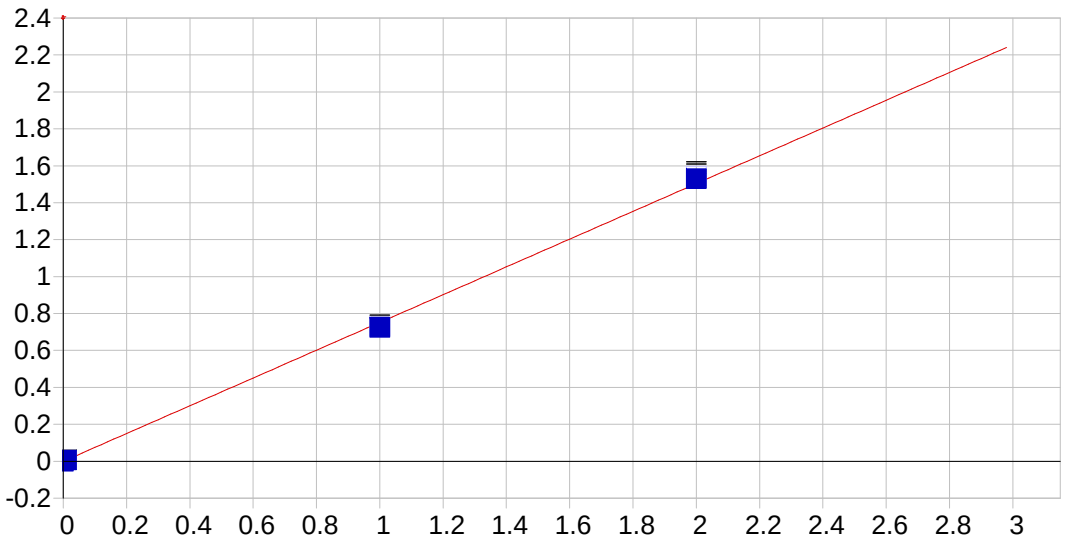
Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2.723**	**1.378**	**.5621**	**30.18**	**13.64**	**32.48**	**4.316**	**15.95**	**.5982**
Stddev	.038	.023	.0077	.16	.05	.06	.032	.06	.0086
%RSD	1.381	1.664	1.363	.5276	.3364	.1816	.7413	.3642	1.437
#1	2.742	1.391	.5654	30.33	13.68	32.50	4.349	15.99	.6033
#2	2.680	1.352	.5534	30.01	13.59	32.41	4.285	15.88	.5883
#3	2.747	1.392	.5676	30.19	13.65	32.53	4.313	15.96	.6030

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**44.37**	**4.282**	**4.684**	**.8258**	**2.409**	**.1015**	**.0625**	**.7625**	**.9502**
Stddev	.07	.061	.062	.0111	.033	.0014	.0009	.0031	.0147
%RSD	.1663	1.418	1.331	1.348	1.385	1.416	1.480	.4110	1.545
#1	44.41	4.311	4.714	.8325	2.422	.1024	.0629	.7640	.9576
#2	44.29	4.212	4.613	.8130	2.371	.0999	.0614	.7588	.9333
#3	44.42	4.323	4.726	.8320	2.433	.1023	.0631	.7645	.9597

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**214.1**	**.7483**	**12.97**	**.1002**	**.6678**	**2.556**	**3.806**
Stddev	3.0	.0129	.05	.0014	.0094	.012	.055
%RSD	1.421	1.718	.4141	1.353	1.405	.4586	1.454
#1	213.3	.7577	13.01	.1010	.6741	2.563	3.832
#2	211.4	.7337	12.91	.0986	.6570	2.542	3.742
#3	217.4	.7536	12.99	.1009	.6724	2.563	3.844

Sample Name: Cal 3 Acquired: 11/26/2014 7:07:02 Type: Cal
Method: 2014v3(v308) Mode: IR Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_3710
Units	Cts/S
Avg	4440.2
Stddev	76.1
%RSD	1.7146
#1	4376.8
#2	4524.6
#3	4419.3

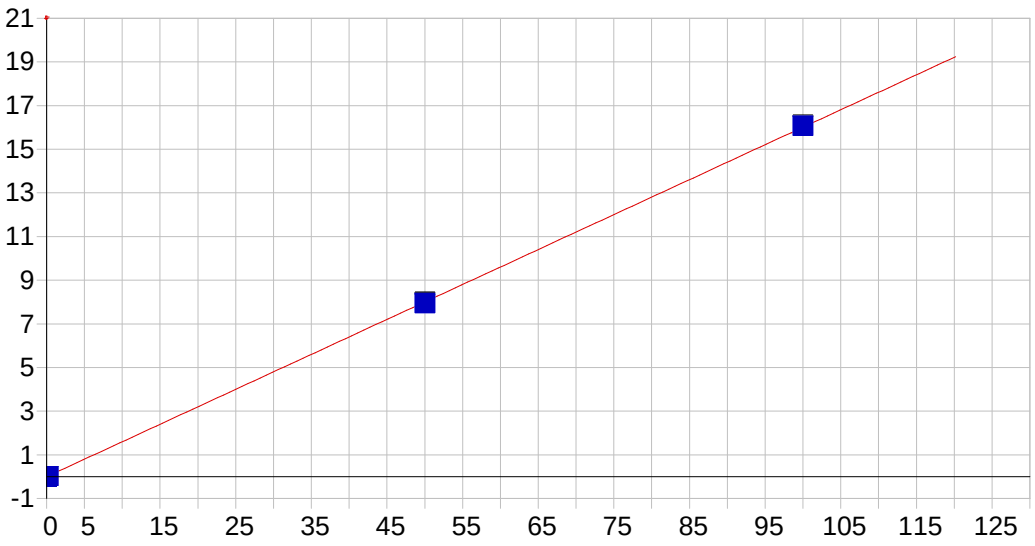


Ag 328.068 {103}

Date of Fit:	11/26/2014 7:10:45	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000443	Re-Slope:	1.000000
A1 (Gain):	0.752011	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999685	Status:	OK.
Std Error of Est:	0.000148		
Predicted MDL:	0.000880		
Predicted MQL:	0.002933		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	-.00044	.000	1
CAL 1	.01000	.01002	.000	.202	.00772	.000	1
Cal 2	1.0000	.96415	-.036	-3.59	.73086	.006	1
Cal 3	2.0000	2.0358	.036	1.79	1.5430	.025	1



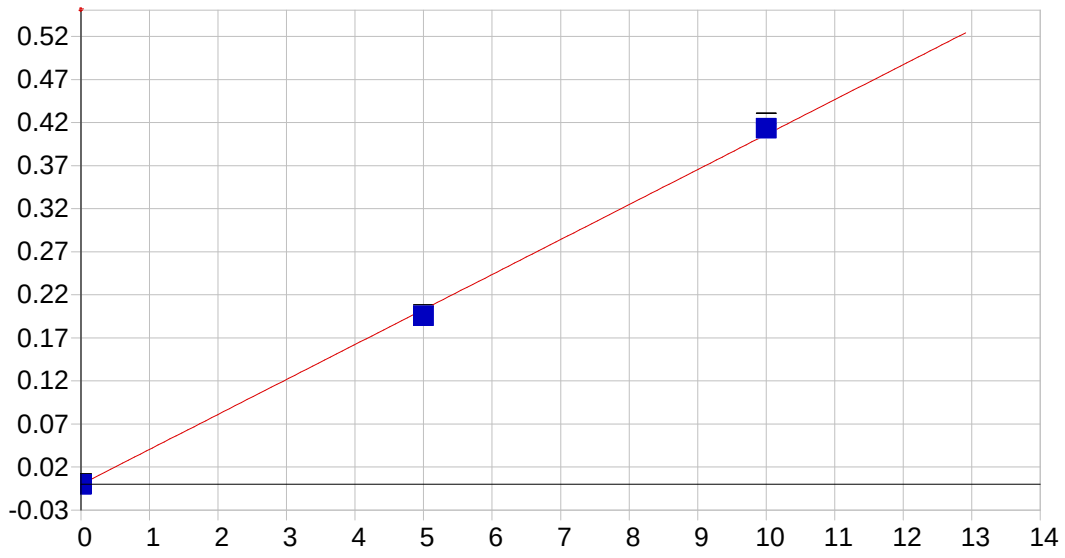
Al 396.152 { 85}

Date of Fit:	11/26/2014 7:10:45	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.003961	Re-Slope:	1.000000

A1 (Gain):	0.160131	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999988	Status:	OK.
Std Error of Est:	0.000196		
Predicted MDL:	0.008816		
Predicted MQL:	0.029387		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	-.00396	.001	1
CAL 1	.20000	.19712	-.003	-1.44	.02785	.002	1
Cal 2	50.000	49.649	-.351	-.702	7.9527	.044	1
Cal 3	100.00	100.35	.354	.354	16.078	.030	1

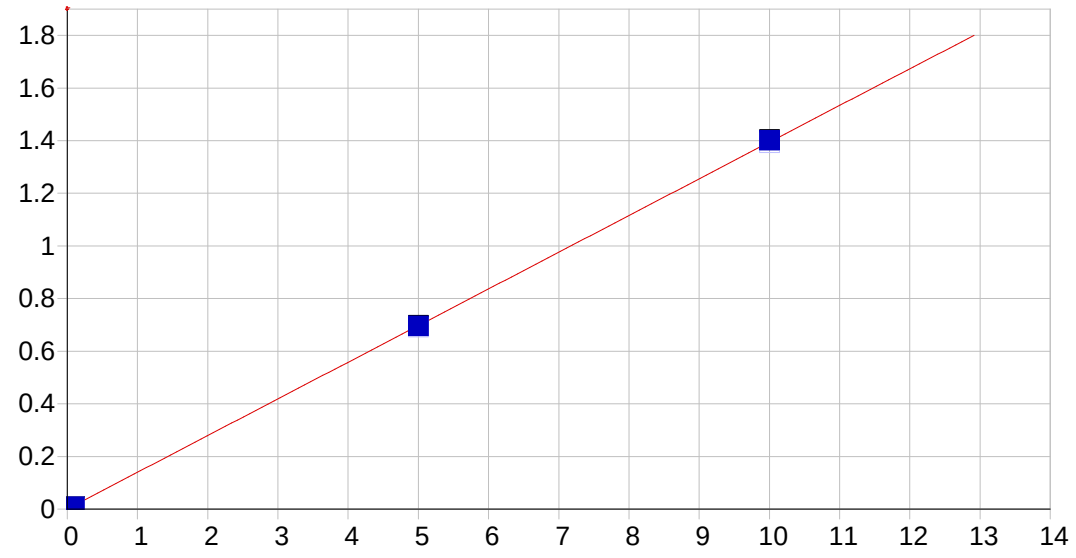


As 189.042 {478}

Date of Fit:	11/26/2014 7:10:45	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000082	Re-Slope:	1.000000
A1 (Gain):	0.040610	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999673	Status:	OK.
Std Error of Est:	0.000018		
Predicted MDL:	0.001812		
Predicted MQL:	0.006040		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	-.00008	.000	1
CAL 1	.01000	.00914	-.001	-8.64	.00029	.000	1
Cal 2	5.0000	4.8201	-.180	-3.60	.19558	.001	1
Cal 3	10.000	10.181	.181	1.81	.41319	.006	1

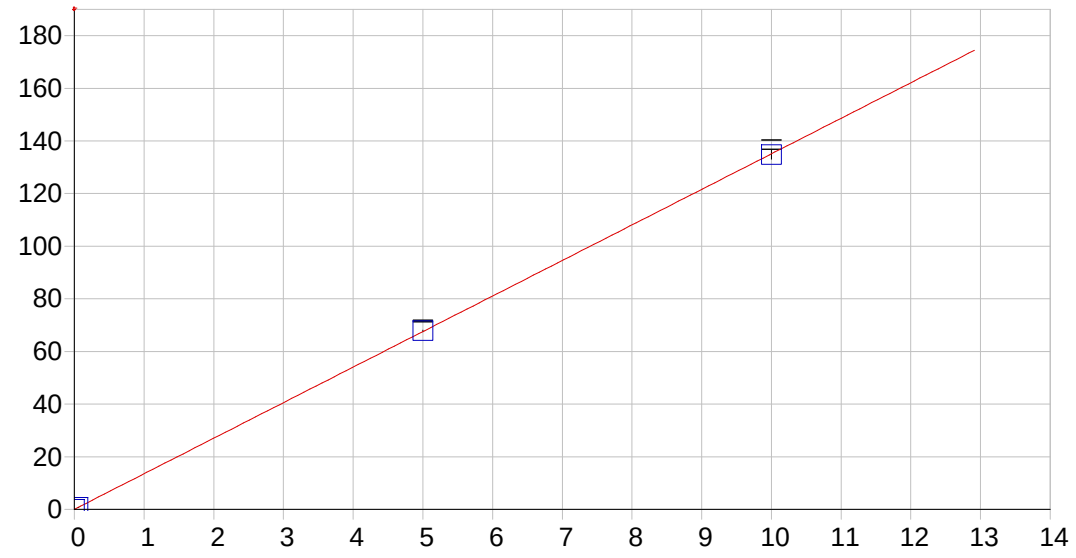


B 249.678 {135}

Date of Fit:	11/26/2014 7:10:45	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000511	Re-Slope:	1.000000
A1 (Gain):	0.139381	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999431	Status:	OK.
Std Error of Est:	0.000257		
Predicted MDL:	0.003035		
Predicted MQL:	0.010116		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00004	.000	.000	.00052	.000	1
CAL 1	.10000	.05915	-.041	-40.8	.00875	.000	1
Cal 2	5.0000	4.9910	-.009	-.180	.69130	.002	1
Cal 3	10.000	10.050	.050	.501	1.3916	.002	1



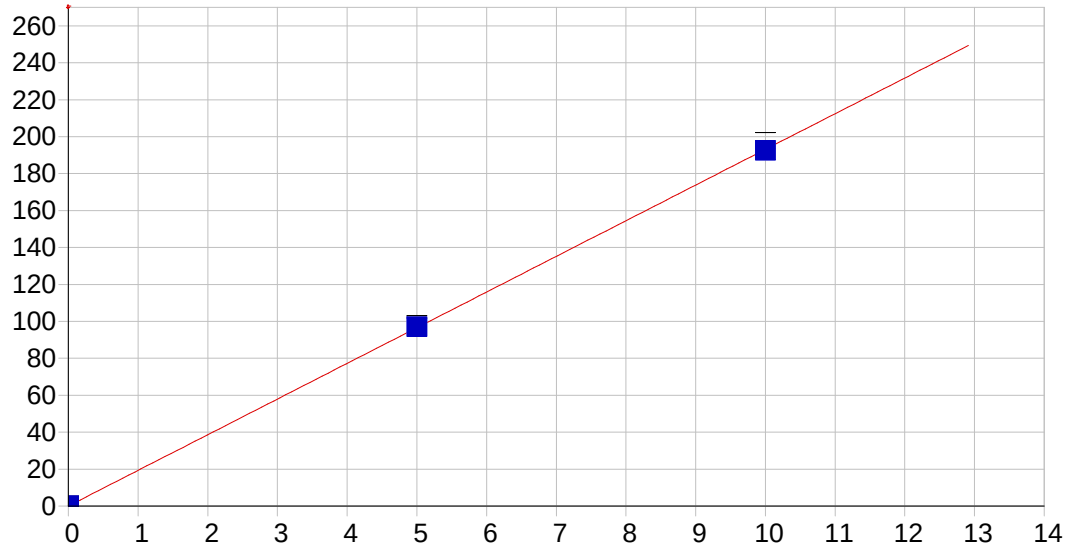
Ba 455.403 { 74}

Date of Fit:	11/26/2014 7:10:45	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.027403	Re-Slope:	1.000000
A1 (Gain):	13.506862	Y-int:	0.000000

A2 (Curvature):	0.000000					
n (Exponent):	1.000000					
Correlation:	0.999996		Status:	OK.		
Std Error of Est:	0.001549					
Predicted MDL:	0.000148					
Predicted MQL:	0.000492					

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.02741	.001	1
CAL 1	.05000	.04952	.000	-.968	.69621	.004	1
Cal 2	5.0000	5.0207	.021	.415	67.842	.310	1
Cal 3	10.000	9.9797	-.020	-.203	134.82	1.78	1

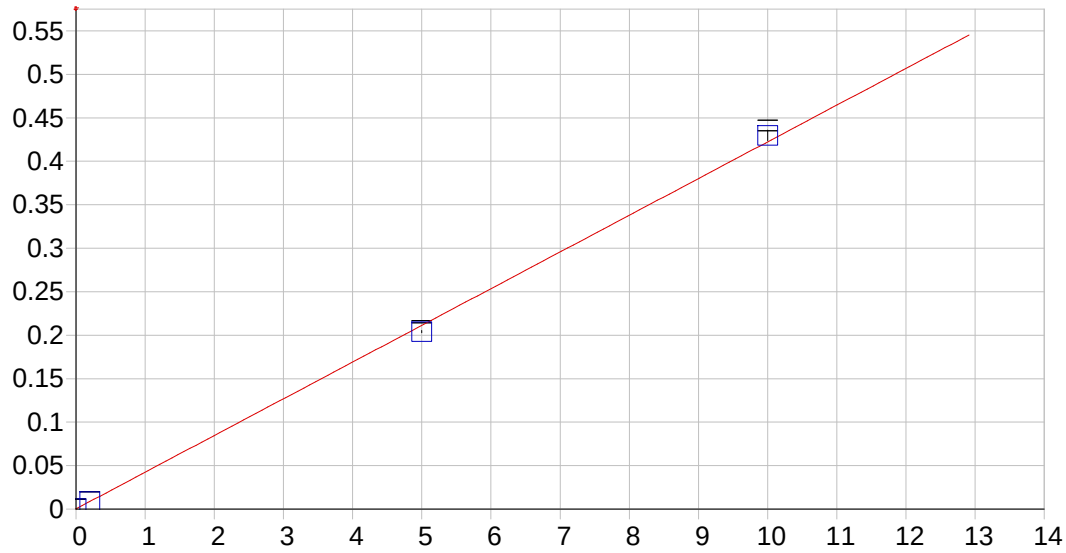


Be 313.042 {108}

Date of Fit:	11/26/2014 7:10:45	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.001220	Re-Slope:	1.000000
A1 (Gain):	19.310561	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999993	Status:	OK.
Std Error of Est:	0.000877		
Predicted MDL:	0.000035		
Predicted MQL:	0.000118		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00122	.001	1
CAL 1	.00500	.00514	.000	2.84	.10040	.001	1
Cal 2	5.0000	5.0259	.026	.518	97.025	.617	1
Cal 3	10.000	9.9739	-.026	-.261	192.54	4.32	1

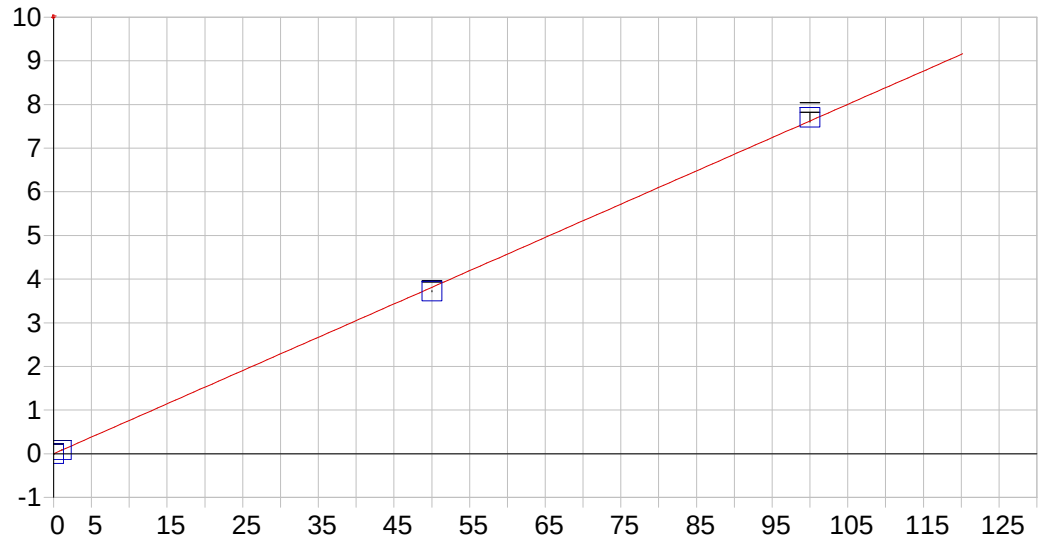


Bi 223.061 {451}

Date of Fit:	11/26/2014 7:10:45	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000264	Re-Slope:	1.000000
A1 (Gain):	0.042205	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999702	Status:	OK.
Std Error of Est:	0.000080		
Predicted MDL:	0.002967		
Predicted MQL:	0.009890		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00001	.000	.000	.00026	.000	1
CAL 1	.20000	.19512	-.005	-2.44	.00850	.000	1
Cal 2	5.0000	4.8291	-.171	-3.42	.20408	.001	1
Cal 3	10.000	10.176	.176	1.76	.42974	.006	1



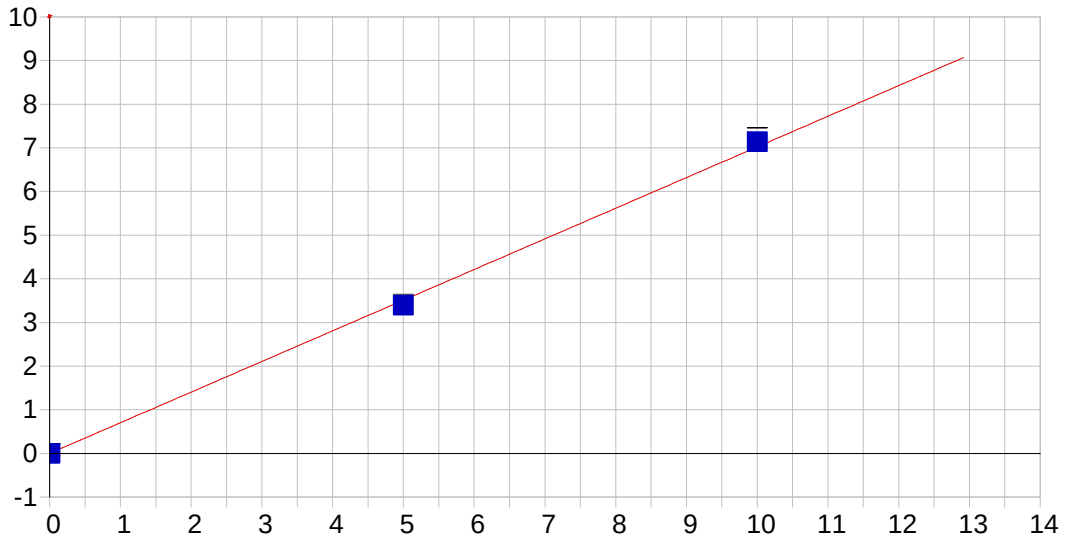
Ca 184.006 {483}

Date of Fit:	11/26/2014 7:10:45	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000316	Re-Slope:	1.000000
A1 (Gain):	0.076235	Y-int:	0.000000

A2 (Curvature):		0.000000					
n (Exponent):		1.000000					
Correlation:		0.999847		Status:	OK.		
Std Error of Est:		0.000734					
Predicted MDL:		0.000968					
Predicted MQL:		0.003228					

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	-.00008	.000	.000	-.00032	.000	1
CAL 1	1.0000	1.0906	.091	9.06	.08282	.001	1
Cal 2	50.000	48.843	-1.16	-2.31	3.7232	.016	1
Cal 3	100.00	101.07	1.07	1.07	7.7045	.112	1

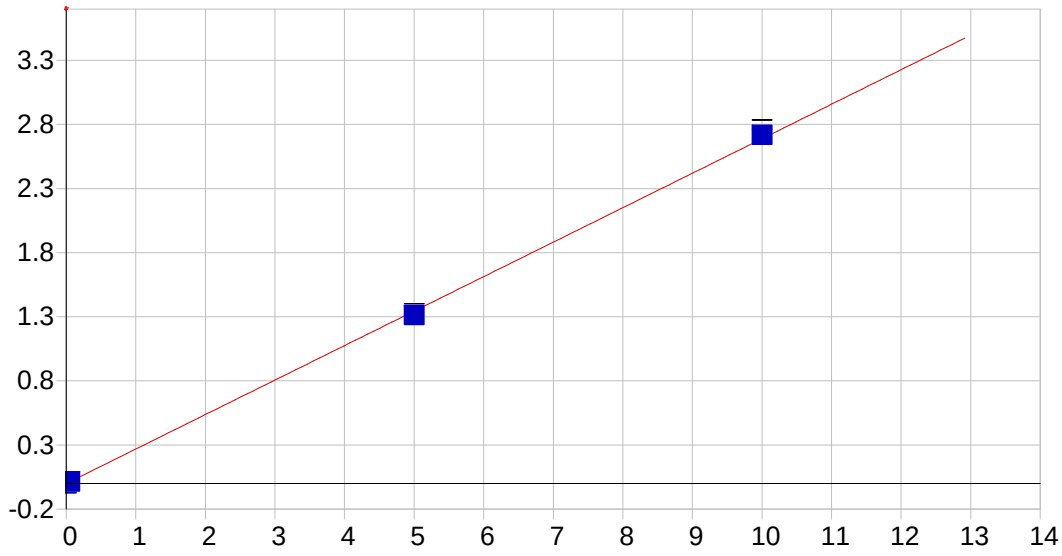


Cd 228.802 {447}

Date of Fit:	11/26/2014 7:10:45	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000229	Re-Slope:	1.000000
A1 (Gain):	0.702170	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999730	Status:	OK.
Std Error of Est:	0.000200		
Predicted MDL:	0.000176		
Predicted MQL:	0.000586		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	-.00023	.000	1
CAL 1	.00500	.00507	.000	1.40	.00328	.000	1
Cal 2	5.0000	4.8353	-.165	-3.29	3.3978	.018	1
Cal 3	10.000	10.165	.165	1.65	7.1427	.095	1

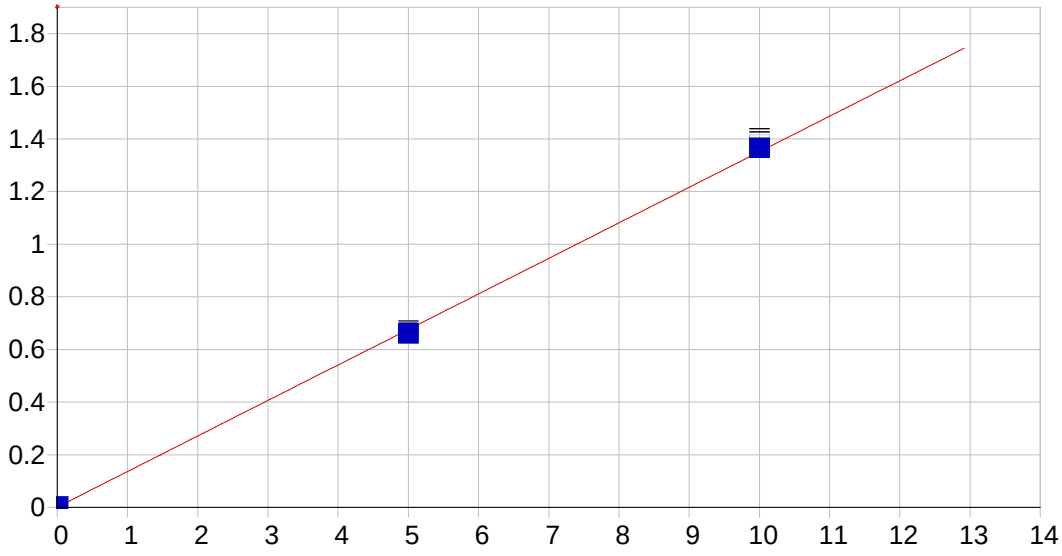


Co 228.616 {448}

Date of Fit:	11/26/2014 7:10:45	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000066	Re-Slope:	1.000000
A1 (Gain):	0.268895	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999868	Status:	OK.
Std Error of Est:	0.000170		
Predicted MDL:	0.000367		
Predicted MQL:	0.001222		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00007	.000	1
CAL 1	.05000	.05337	.003	6.74	.01443	.000	1
Cal 2	5.0000	4.8871	-.113	-2.26	1.3164	.008	1
Cal 3	10.000	10.110	.110	1.10	2.7228	.038	1



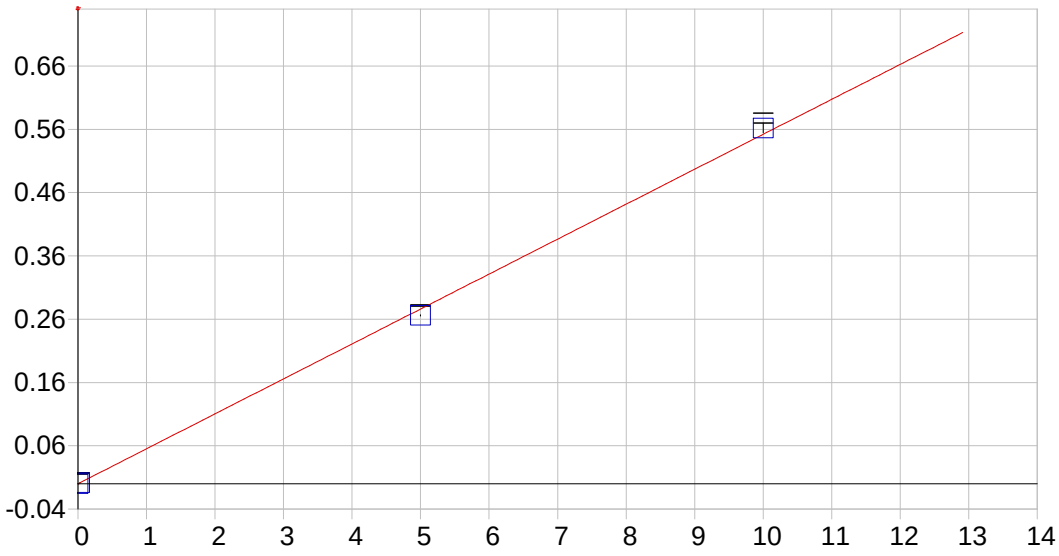
Cr 283.563 {119}

Date of Fit:	11/26/2014 7:10:45	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.001132	Re-Slope:	1.000000
A1 (Gain):	0.135011	Y-int:	0.000000

A2 (Curvature):		0.000000					
n (Exponent):		1.000000					
Correlation:		0.999869		Status:	OK.		
Std Error of Est:		0.000038					
Predicted MDL:		0.000992					
Predicted MQL:		0.003307					

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00113	.000	1
CAL 1	.01000	.00851	-.001	-14.9	.00222	.000	1
Cal 2	5.0000	4.8882	-.112	-2.24	.66689	.003	1
Cal 3	10.000	10.113	.113	1.13	1.3781	.023	1

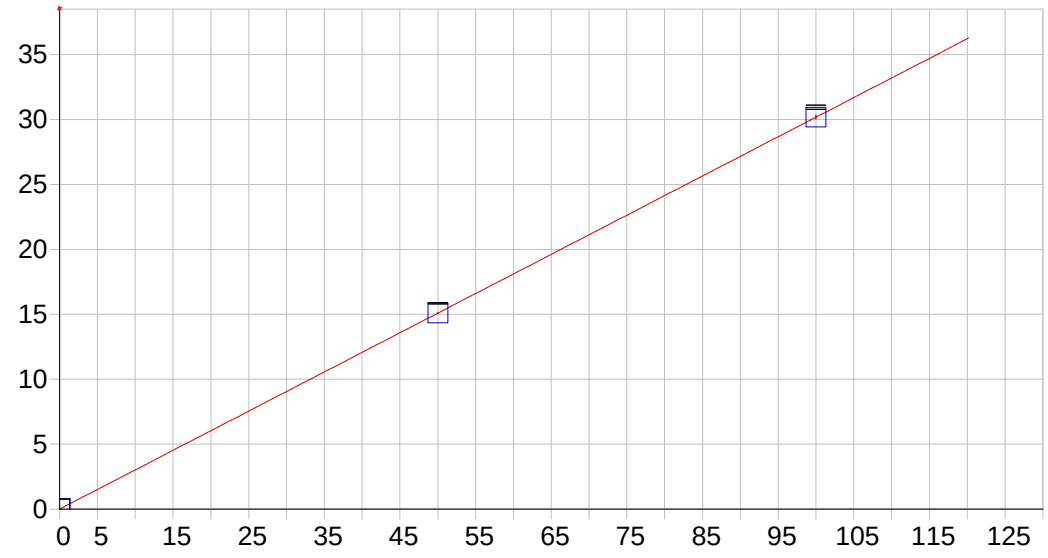


Cu 217.894 {455}

Date of Fit:	11/26/2014 7:10:45	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000053	Re-Slope:	1.000000
A1 (Gain):	0.055208	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999675	Status:	OK.
Std Error of Est:	0.000039		
Predicted MDL:	0.002125		
Predicted MQL:	0.007083		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00005	.000	1
CAL 1	.02500	.02415	-.001	-3.39	.00139	.000	1
Cal 2	5.0000	4.8201	-.180	-3.60	.26616	.001	1
Cal 3	10.000	10.181	.181	1.81	.56211	.008	1

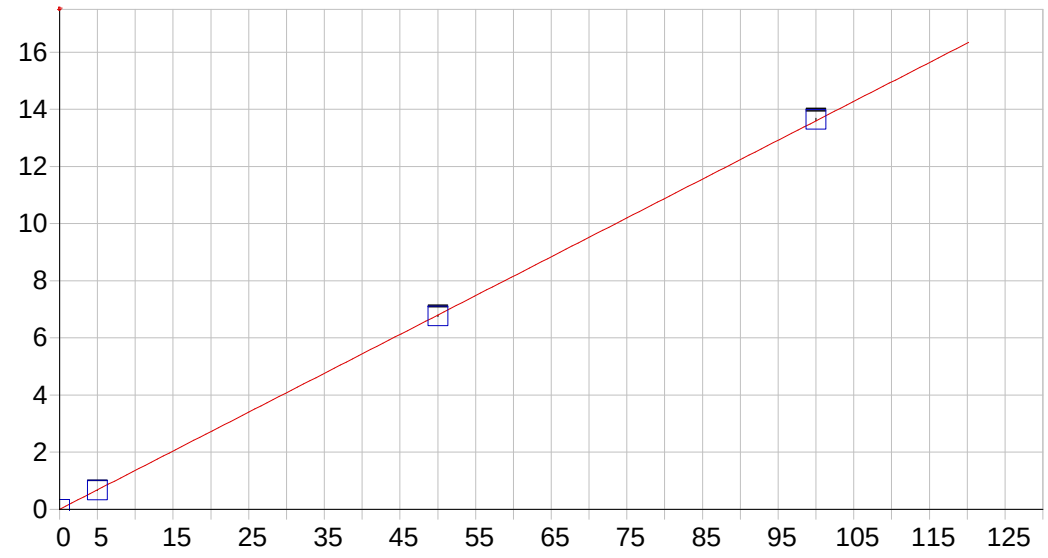


Fe 259.940 {130}

Date of Fit:	11/26/2014 7:10:45	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000526	Re-Slope:	1.000000
A1 (Gain):	0.301764	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	1.000000	Status:	OK.
Std Error of Est:	0.000042		
Predicted MDL:	0.001423		
Predicted MQL:	0.004744		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00052	.000	1
CAL 1	.10000	.10314	.003	3.14	.03165	.000	1
Cal 2	50.000	50.002	.002	.005	15.089	.047	1
Cal 3	100.00	99.995	-.005	-.005	30.175	.159	1



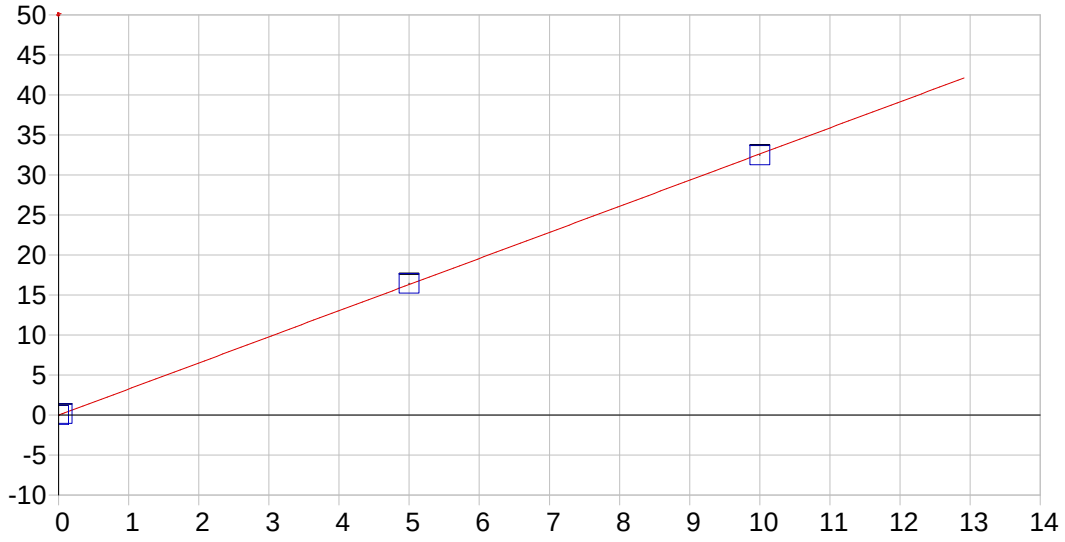
K 766.490 { 44}

Date of Fit:	11/26/2014 7:10:45	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.003079	Re-Slope:	1.000000
A1 (Gain):	0.135966	Y-int:	0.000000

A2 (Curvature):		0.000000					
n (Exponent):		1.000000					
Correlation:		0.999988		Status:	OK.		
Std Error of Est:		0.000829					
Predicted MDL:		0.023623					
Predicted MQL:		0.078743					

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00010	.000	.000	.00309	.002	1
CAL 1	5.0000	4.9046	-.095	-1.91	.66994	.006	1
Cal 2	50.000	49.784	-.216	-.432	6.7720	.027	1
Cal 3	100.00	100.31	.311	.311	13.642	.046	1

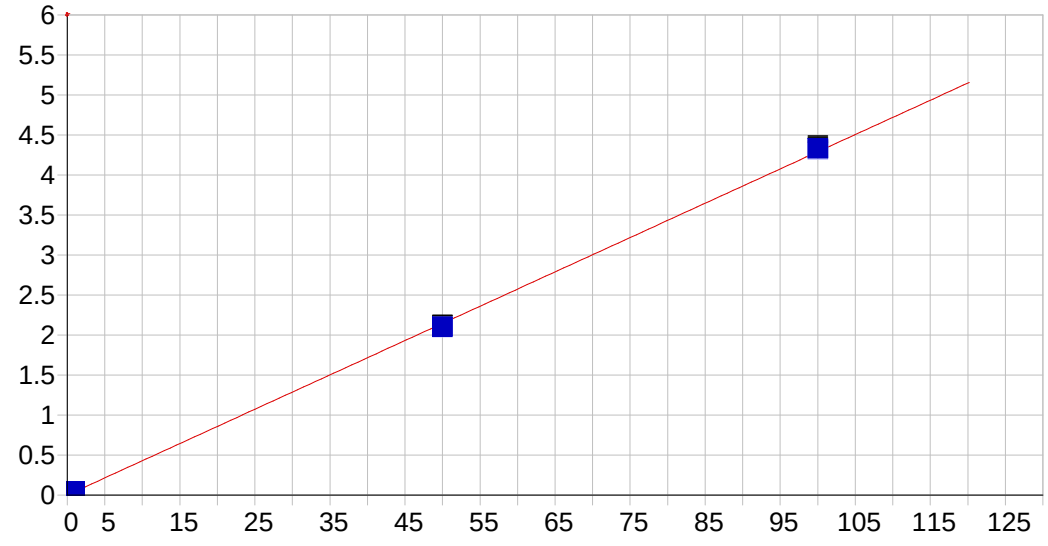


Li 670.784 { 50}

Date of Fit:	11/26/2014 7:10:45	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.012067	Re-Slope:	1.000000
A1 (Gain):	3.262551	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999983	Status:	OK.
Std Error of Est:	0.000738		
Predicted MDL:	0.001004		
Predicted MQL:	0.003347		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	-.01207	.004	1
CAL 1	.05000	.05145	.001	2.90	.15580	.001	1
Cal 2	5.0000	5.0391	.039	.782	16.428	.053	1
Cal 3	10.000	9.9595	-.041	-.405	32.481	.059	1

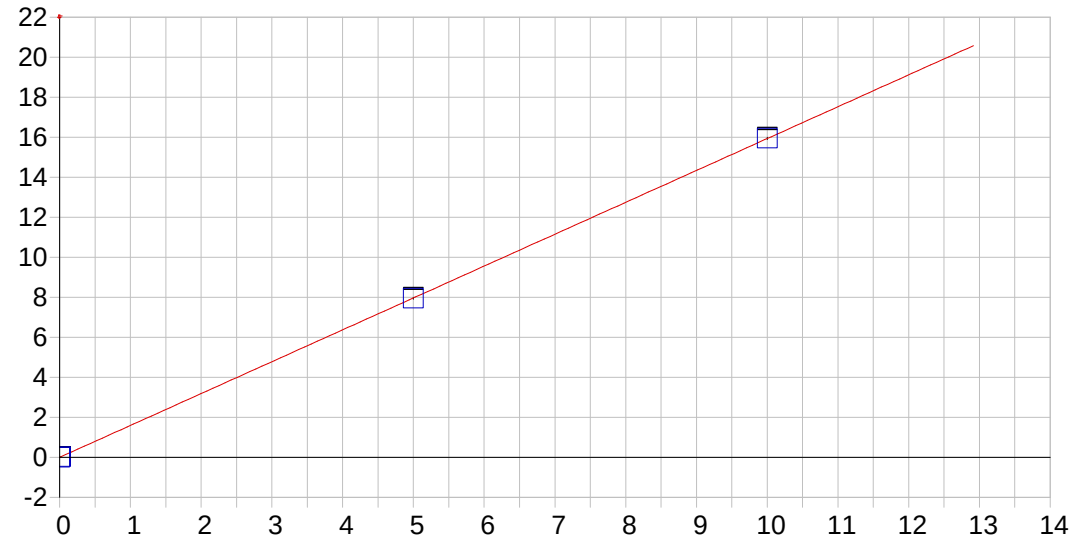


Mg 279.806 {121}

Date of Fit:	11/26/2014 7:10:45	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000368	Re-Slope:	1.000000
A1 (Gain):	0.042903	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999910	Status:	OK.
Std Error of Est:	0.000316		
Predicted MDL:	0.010343		
Predicted MQL:	0.034478		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00004	.000	.000	.00037	.000	1
CAL 1	1.0000	.97200	-.028	-2.80	.04175	.001	1
Cal 2	50.000	49.073	-.927	-1.85	2.0979	.018	1
Cal 3	100.00	100.95	.955	.955	4.3159	.032	1



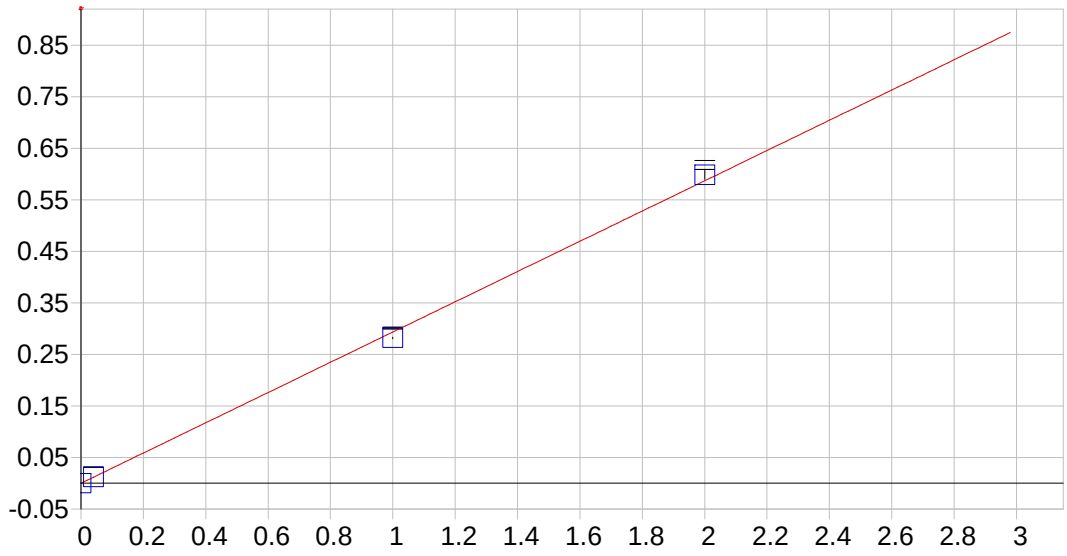
Mn 257.610 {131}

Date of Fit:	11/26/2014 7:10:45	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000440	Re-Slope:	1.000000
A1 (Gain):	1.593338	Y-int:	0.000000

A2 (Curvature):		0.000000					
n (Exponent):		1.000000					
Correlation:		0.999999		Status:	OK.		
Std Error of Est:		0.000039					
Predicted MDL:		0.000262					
Predicted MQL:		0.000874					

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00044	.001	1
CAL 1	.01500	.01507	.000	.442	.02445	.000	1
Cal 2	5.0000	4.9920	-.008	-.161	7.9543	.052	1
Cal 3	10.000	10.008	.008	.080	15.947	.058	1

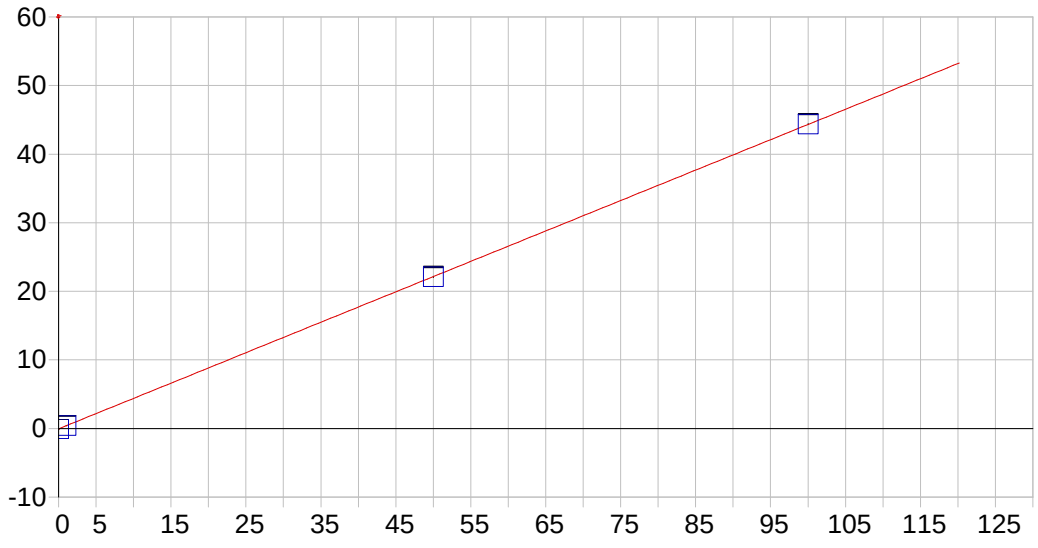


Mo 202.030 {467}

Date of Fit:	11/26/2014 7:10:45	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000000	Re-Slope:	1.000000
A1 (Gain):	0.293447	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999631	Status:	OK.
Std Error of Est:	0.000124		
Predicted MDL:	0.000301		
Predicted MQL:	0.001004		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00000	.000	1
CAL 1	.04000	.04026	.000	.645	.01181	.000	1
Cal 2	1.0000	.96124	-.039	-3.88	.28207	.001	1
Cal 3	2.0000	2.0385	.039	1.93	.59819	.009	1

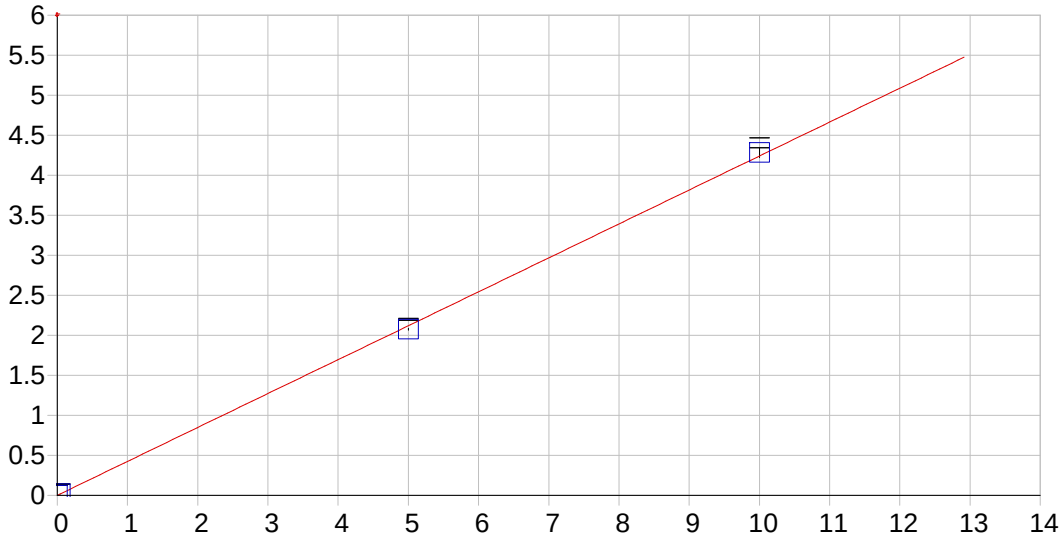


Na 589.592 { 57}

Date of Fit:	11/26/2014 7:10:45	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.040721	Re-Slope:	1.000000
A1 (Gain):	0.443704	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999999	Status:	OK.
Std Error of Est:	0.000326		
Predicted MDL:	0.007241		
Predicted MQL:	0.024137		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00001	.000	.000	-.04072	.001	1
CAL 1	1.0000	.99450	-.006	-.550	.40054	.003	1
Cal 2	50.000	49.912	-.088	-.175	22.106	.104	1
Cal 3	100.00	100.09	.093	.093	44.371	.074	1



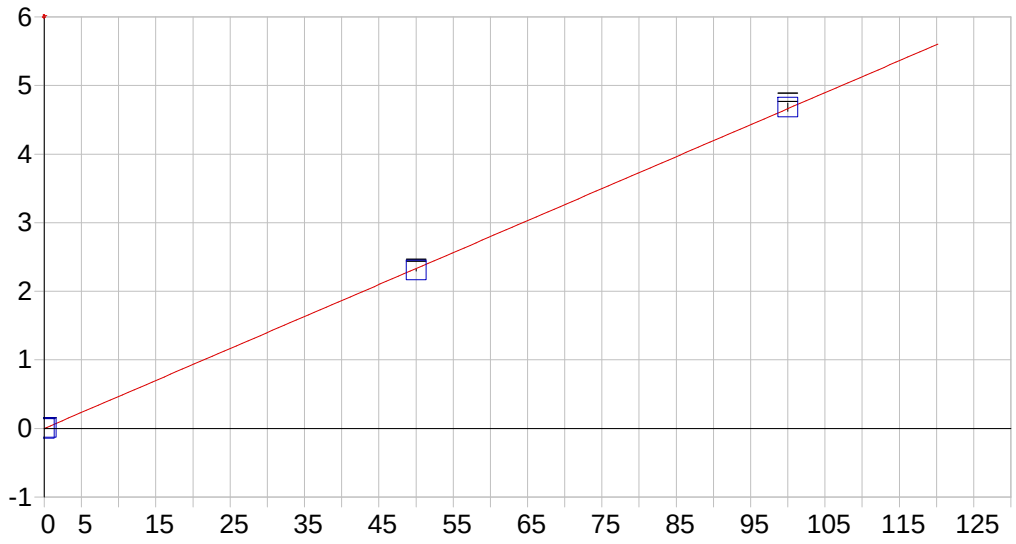
Ni 221.647 {452}

Date of Fit:	11/26/2014 7:10:45	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000173	Re-Slope:	1.000000
A1 (Gain):	0.423976	Y-int:	0.000000

A2 (Curvature):		0.000000					
n (Exponent):		1.000000					
Correlation:		0.999892		Status:	OK.		
Std Error of Est:		0.000216					
Predicted MDL:		0.000319					
Predicted MQL:		0.001064					

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00017	.000	1
CAL 1	.04000	.04272	.003	6.79	.01828	.000	1
Cal 2	5.0000	4.8979	-.102	-2.04	2.0768	.011	1
Cal 3	10.000	10.099	.099	.994	4.2821	.061	1

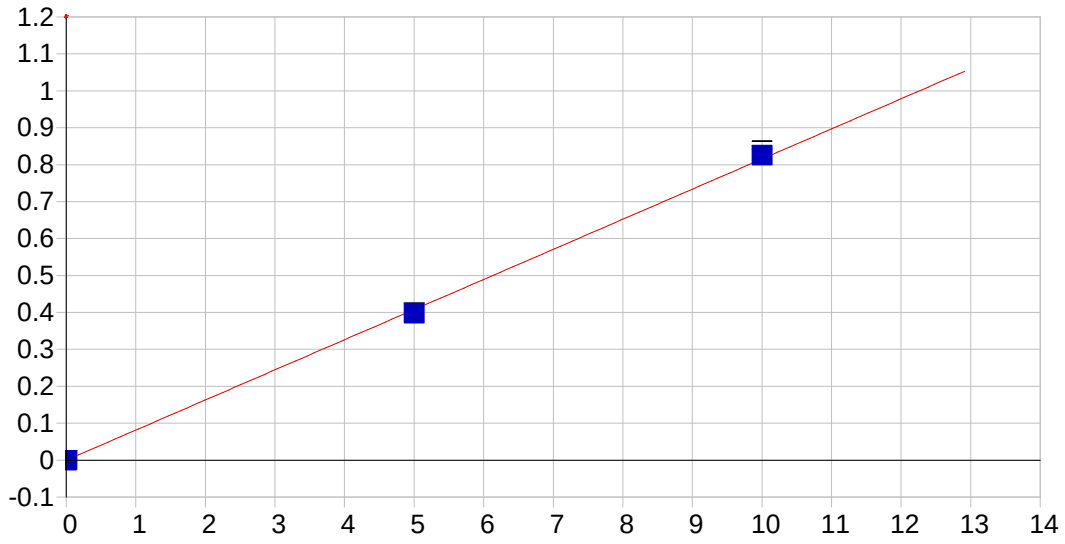


P 177.495 {490}

Date of Fit:	11/26/2014 7:10:45	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000040	Re-Slope:	1.000000
A1 (Gain):	0.046620	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999977	Status:	OK.
Std Error of Est:	0.000086		
Predicted MDL:	0.001598		
Predicted MQL:	0.005328		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	-.00004	.000	1
CAL 1	.25000	.24871	-.001	-.515	.01156	.000	1
Cal 2	50.000	49.523	-.477	-.953	2.3087	.014	1
Cal 3	100.00	100.48	.478	.478	4.6842	.062	1

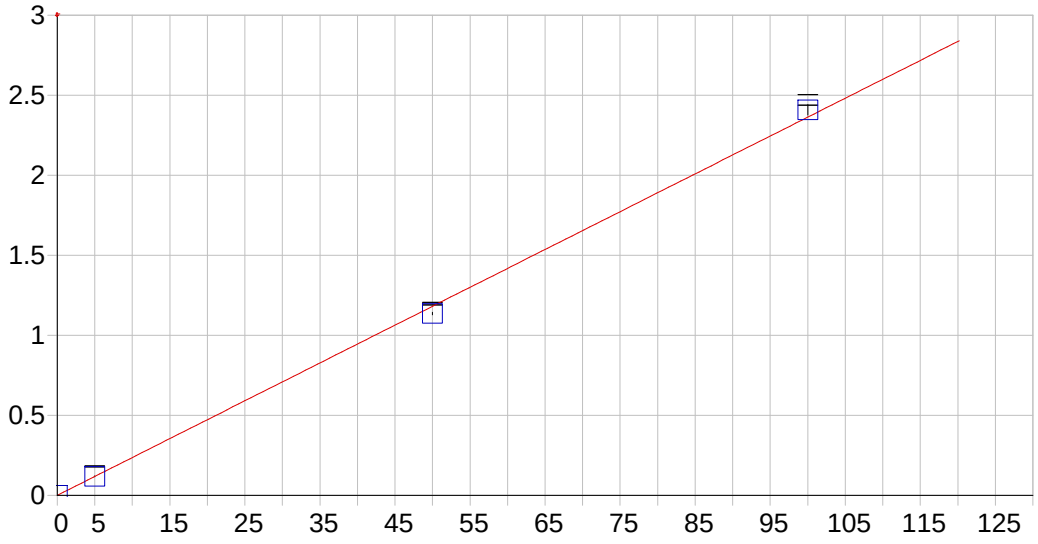


Pb 220.353 {453}

Date of Fit:	11/26/2014 7:10:45	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000089	Re-Slope:	1.000000
A1 (Gain):	0.081546	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999840	Status:	OK.
Std Error of Est:	0.000025		
Predicted MDL:	0.001390		
Predicted MQL:	0.004634		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	-.00009	.000	1
CAL 1	.01000	.00788	-.002	-21.2	.00059	.000	1
Cal 2	5.0000	4.8802	-.120	-2.40	.39811	.002	1
Cal 3	10.000	10.122	.122	1.22	.82581	.011	1



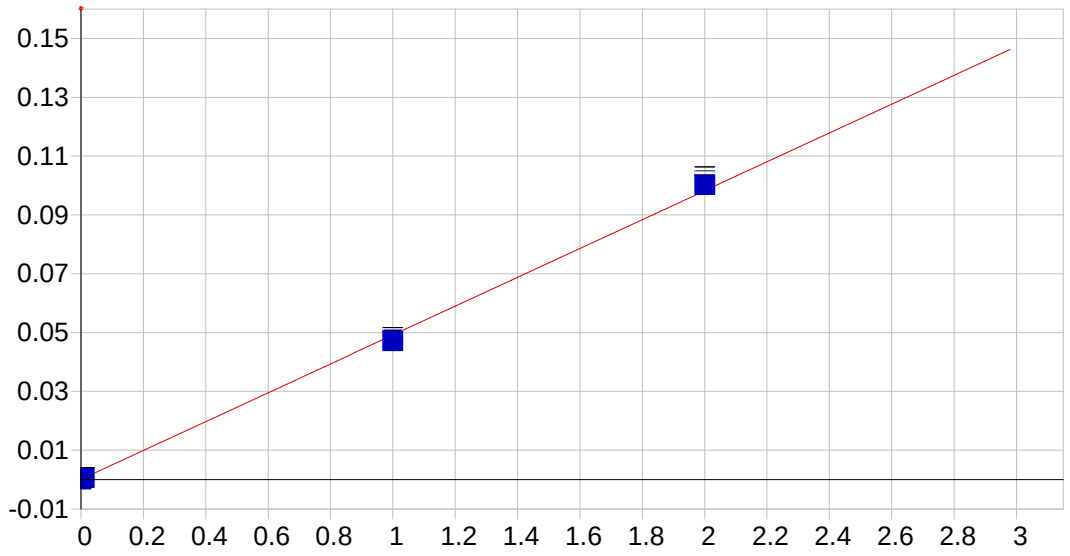
S 182.034 {485}

Date of Fit:	11/26/2014 7:10:45	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000244	Re-Slope:	1.000000
A1 (Gain):	0.023630	Y-int:	0.000000

A2 (Curvature):	0.000000					
n (Exponent):	1.000000					
Correlation:	0.999640		Status:	OK.		
Std Error of Est:	0.000789					
Predicted MDL:	0.002996					
Predicted MQL:	0.009986					

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00008	.000	.000	.00025	.000	1
CAL 1	5.0000	5.0152	.015	.304	.11875	.002	1
Cal 2	50.000	48.066	-1.93	-3.87	1.1360	.008	1
Cal 3	100.00	101.92	1.92	1.92	2.4086	.033	1

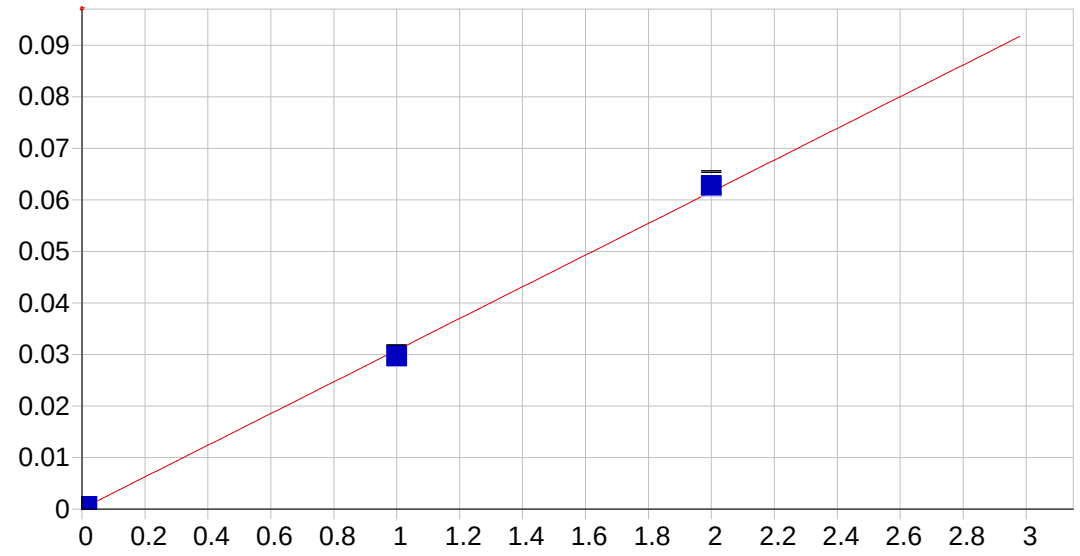


Sb 206.833 {463}

Date of Fit:	11/26/2014 7:10:46	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000091	Re-Slope:	1.000000
A1 (Gain):	0.049073	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999595	Status:	OK.
Std Error of Est:	0.000011		
Predicted MDL:	0.002262		
Predicted MQL:	0.007539		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00009	.000	1
CAL 1	.01000	.00934	-.001	-6.64	.00052	.000	1
Cal 2	1.0000	.95971	-.040	-4.03	.04783	.000	1
Cal 3	2.0000	2.0409	.041	2.05	.10153	.001	1

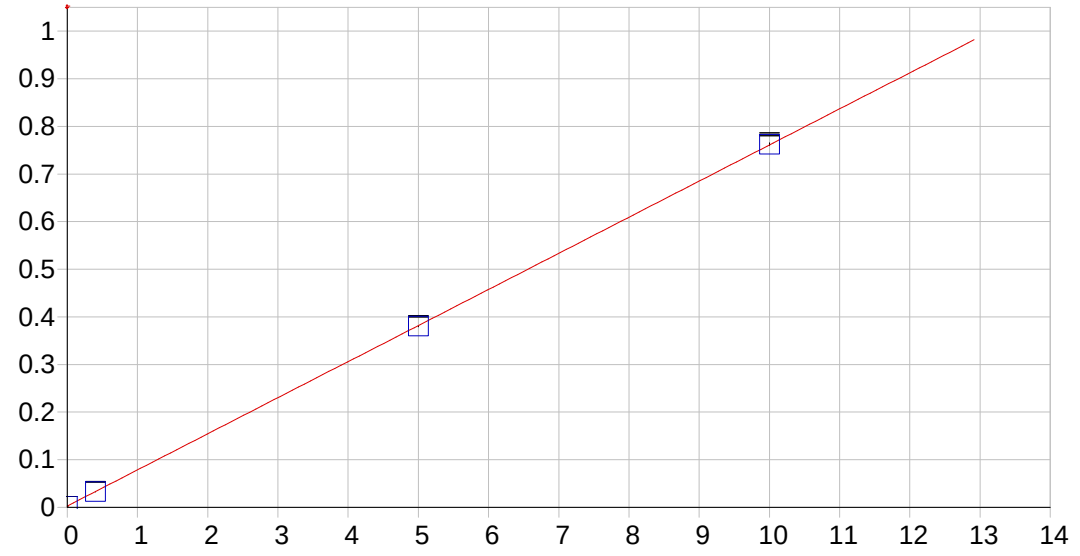


Se 196.090 {472}

Date of Fit:	11/26/2014 7:10:46	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000101	Re-Slope:	1.000000
A1 (Gain):	0.030735	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999549	Status:	OK.
Std Error of Est:	0.000009		
Predicted MDL:	0.002717		
Predicted MQL:	0.009055		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00010	.000	1
CAL 1	.01500	.01211	-.003	-19.3	.00047	.000	1
Cal 2	1.0000	.96328	-.037	-3.67	.02954	.000	1
Cal 3	2.0000	2.0396	.040	1.98	.06246	.001	1



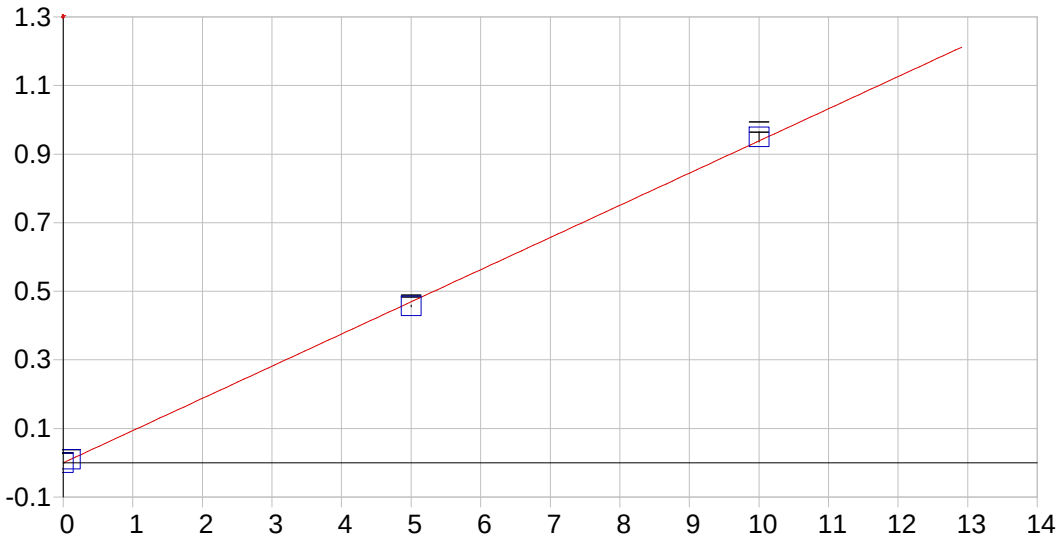
Si 251.611 {134}

Date of Fit:	11/26/2014 7:10:46	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.002836	Re-Slope:	1.000000
A1 (Gain):	0.075811	Y-int:	0.000000

A2 (Curvature):	0.000000					
n (Exponent):	1.000000					
Correlation:	0.999996		Status:	OK.		
Std Error of Est:	0.000024					
Predicted MDL:	0.005628					
Predicted MQL:	0.018761					

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00284	.000	1
CAL 1	.40000	.39686	-.003	-.784	.03292	.001	1
Cal 2	5.0000	4.9832	-.017	-.336	.38061	.001	1
Cal 3	10.000	10.020	.020	.199	.76245	.003	1

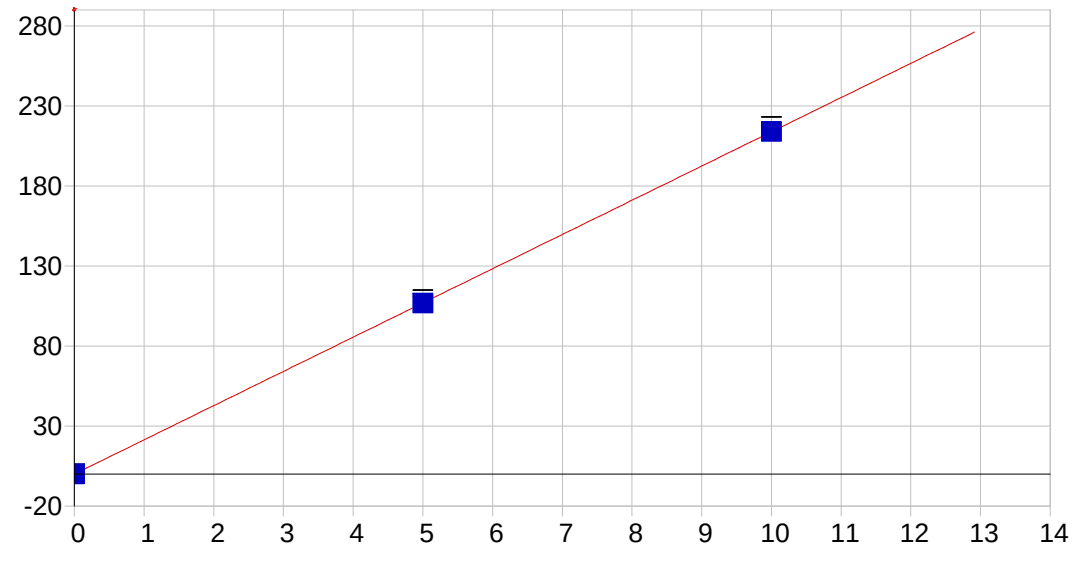


Sn 189.989 {478}

Date of Fit:	11/26/2014 7:10:46	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000016	Re-Slope:	1.000000
A1 (Gain):	0.093832	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999833	Status:	OK.
Std Error of Est:	0.000094		
Predicted MDL:	0.000716		
Predicted MQL:	0.002386		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00002	.000	1
CAL 1	.10000	.10298	.003	2.98	.00968	.000	1
Cal 2	5.0000	4.8705	-.130	-2.59	.45702	.003	1
Cal 3	10.000	10.127	.127	1.27	.95021	.015	1

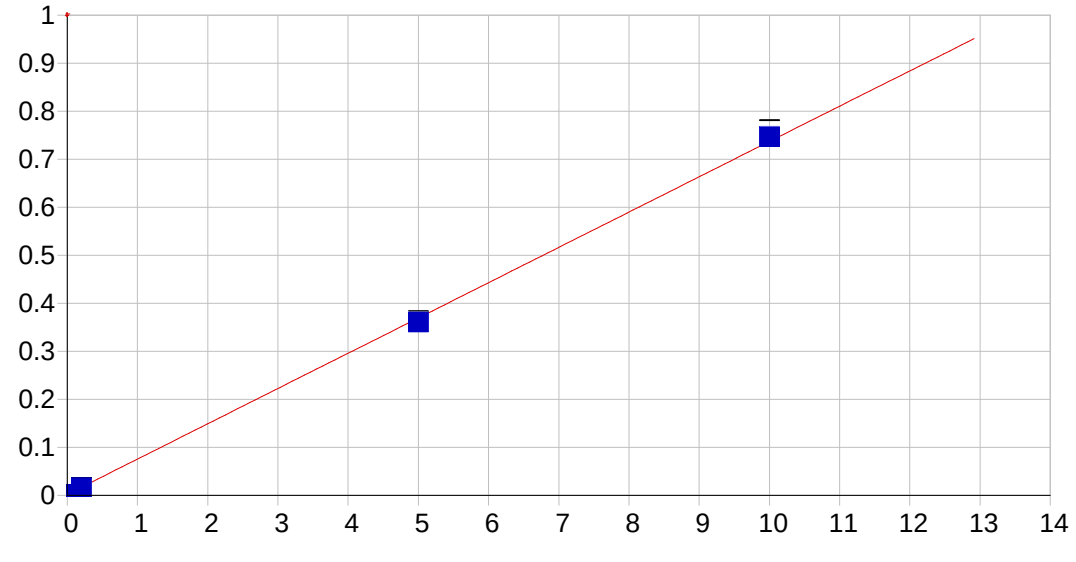


Sr 407.771 { 83}

Date of Fit:	11/26/2014 7:10:46	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.004056	Re-Slope:	1.000000
A1 (Gain):	21.384652	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	1.000000	Status:	OK.
Std Error of Est:	0.000210		
Predicted MDL:	0.000060		
Predicted MQL:	0.000200		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	-.00406	.001	1
CAL 1	.00500	.00512	.000	2.37	.10651	.001	1
Cal 2	5.0000	4.9952	-.005	-.096	106.87	1.90	1
Cal 3	10.000	10.005	.005	.047	214.05	3.04	1



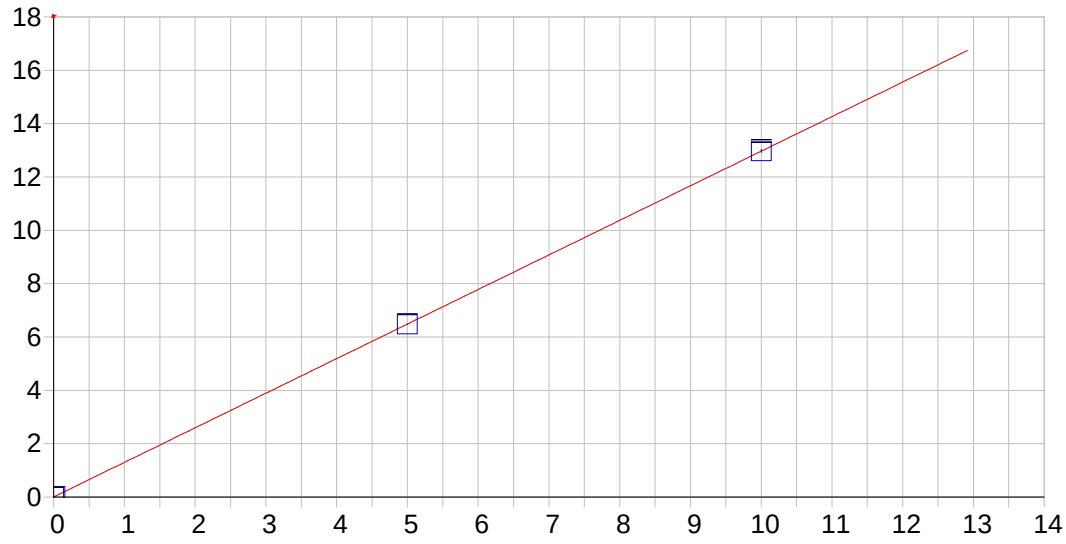
Th 283.231 {119}

Date of Fit:	11/26/2014 7:10:46	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.002055	Re-Slope:	1.000000
A1 (Gain):	0.073491	Y-int:	0.000000

A2 (Curvature):		0.000000					
n (Exponent):		1.000000					
Correlation:		0.999809		Status:	OK.		
Std Error of Est:		0.000112					
Predicted MDL:		0.004276					
Predicted MQL:		0.014252					

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00002	.000	.000	.00206	.000	1
CAL 1	.20000	.18531	-.015	-7.35	.01546	.001	1
Cal 2	5.0000	4.8793	-.121	-2.41	.36136	.002	1
Cal 3	10.000	10.135	.135	1.35	.74833	.013	1

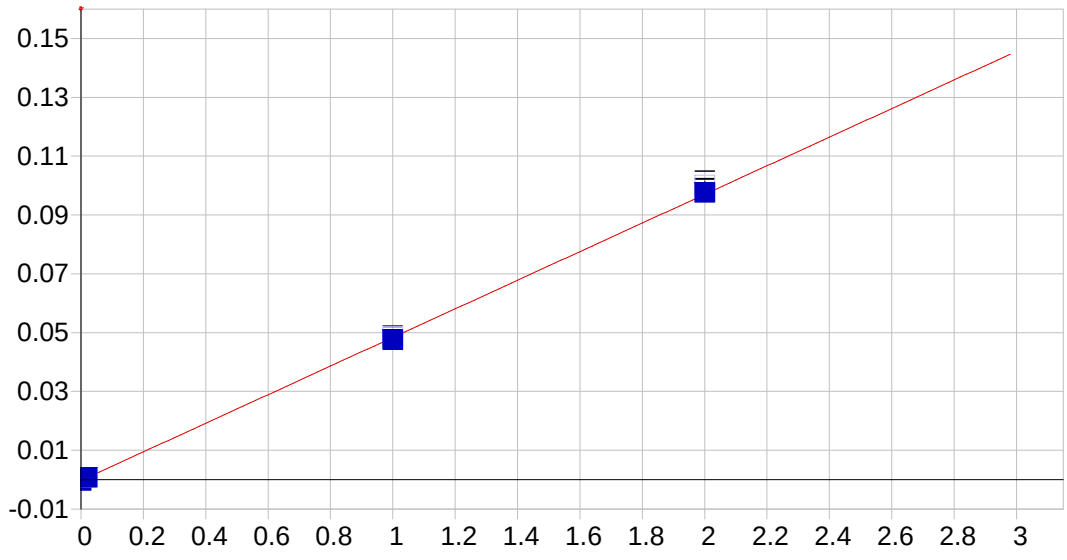


Ti 334.941 {101}

Date of Fit:	11/26/2014 7:10:46	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.004072	Re-Slope:	1.000000
A1 (Gain):	1.296167	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	1.000000	Status:	OK.
Std Error of Est:	0.000023		
Predicted MDL:	0.000667		
Predicted MQL:	0.002222		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00407	.002	1
CAL 1	.02000	.01995	.000	-.228	.02994	.000	1
Cal 2	5.0000	4.9949	-.005	-.101	6.4783	.016	1
Cal 3	10.000	10.005	.005	.051	12.972	.054	1

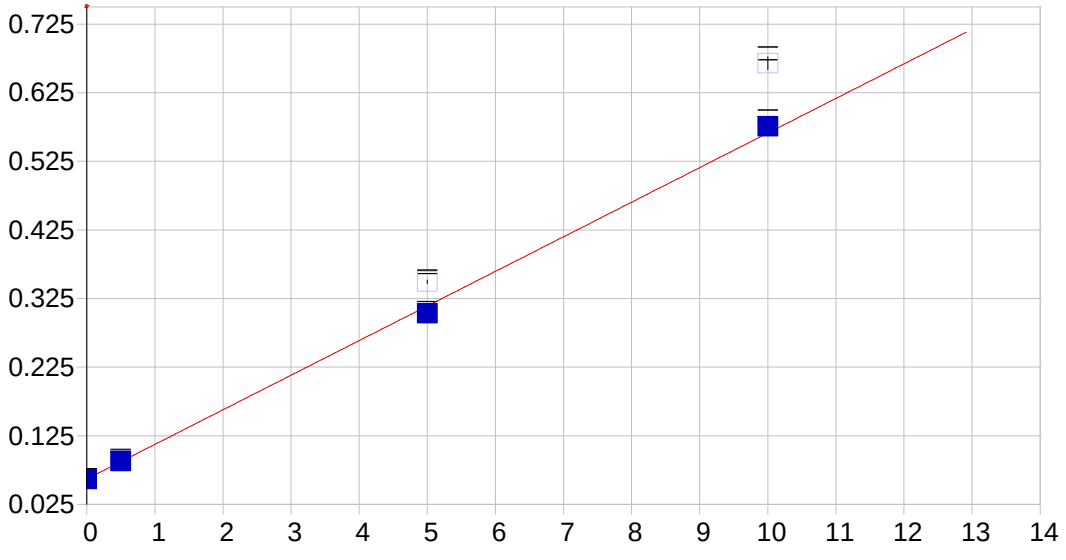


Tl 190.856 {477}

Date of Fit:	11/26/2014 7:10:46	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000279	Re-Slope:	1.000000
A1 (Gain):	0.048639	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999893	Status:	OK.
Std Error of Est:	0.000008		
Predicted MDL:	0.001746		
Predicted MQL:	0.005821		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	-.00028	.000	1
CAL 1	.02000	.02248	.002	12.4	.00082	.000	1
Cal 2	1.0000	.98345	-.017	-1.66	.04879	.000	1
Cal 3	2.0000	2.0141	.014	.706	.10016	.001	1



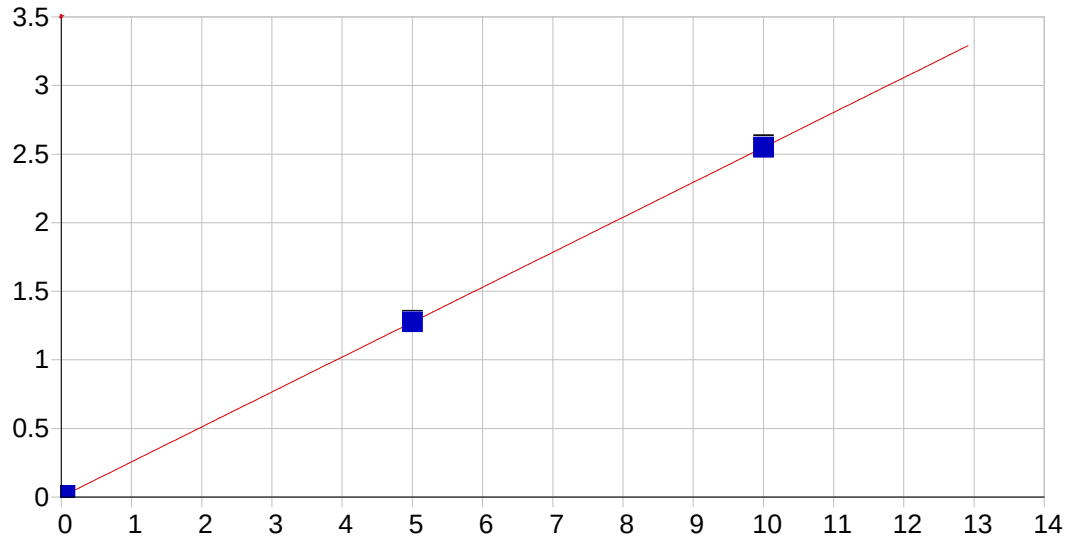
U 367.007 { 92}

Date of Fit:	11/26/2014 7:10:46	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.061984	Re-Slope:	1.000000
A1 (Gain):	0.050425	Y-int:	0.000000

A2 (Curvature):		0.000000					
n (Exponent):		1.000000					
Correlation:		0.999708		Status:	OK.		
Std Error of Est:		0.000179					
Predicted MDL:		0.016166					
Predicted MQL:		0.053887					

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.06198	.000	1
CAL 1	.50000	.51218	.012	2.44	.08927	.001	1
Cal 2	5.0000	4.7940	-.206	-4.12	.34961	.003	1
Cal 3	10.000	10.195	.195	1.95	.66784	.009	1

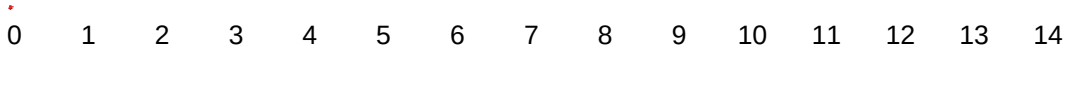


V 290.882 {116}

Date of Fit:	11/26/2014 7:10:46	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.001793	Re-Slope:	1.000000
A1 (Gain):	0.254666	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	1.000000	Status:	OK.
Std Error of Est:	0.000005		
Predicted MDL:	0.002626		
Predicted MQL:	0.008752		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00179	.000	1
CAL 1	.05000	.04973	.000	-.541	.01460	.000	1
Cal 2	5.0000	5.0031	.003	.061	1.2799	.007	1
Cal 3	10.000	9.9972	-.003	-.028	2.5557	.012	1

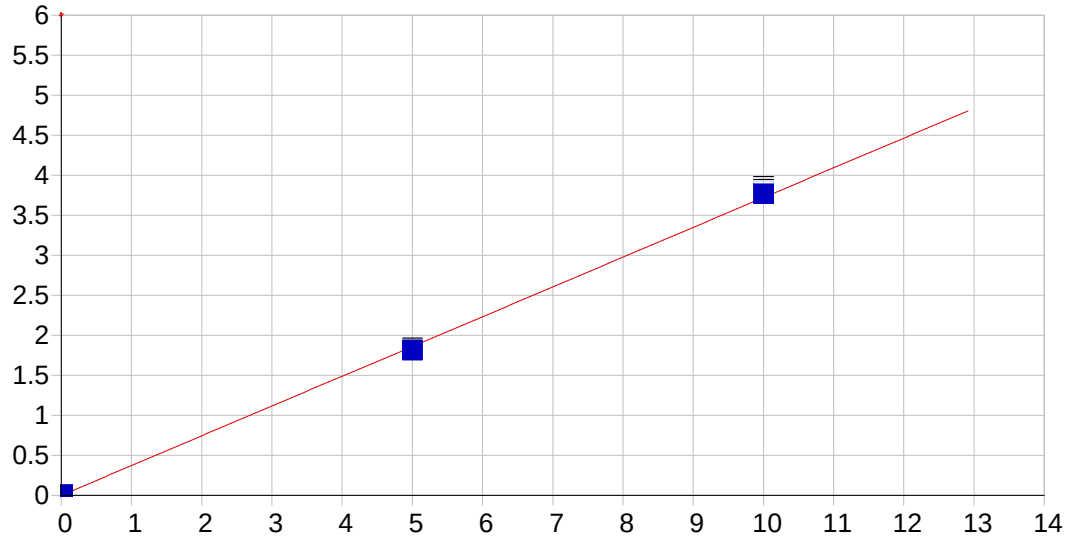


Y 371.030 { 91}*

Date of Fit:	11/26/2014 7:10:46	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	1.000000	Re-Slope:	1.000000
A1 (Gain):	0.000000	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.000000	Status:	Warning Zero Gain
Std Error of Est:	0.000000		
Predicted MDL:	n/a		
Predicted MQL:	n/a		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CAL 1	1.0000	.00000	-1.00	-100.	1.0000	.000	1
CALBLK1	.00000	.00000	.000	.000	1.0000	.000	1
Cal 2	5.0000	.00000	-5.00	-100.	1.0000	.000	1
Cal 3	10.000	.00000	-10.0	-100.	1.0000	.000	1



Zn 213.856 {458}

Date of Fit:	11/26/2014 7:10:46	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000259	Re-Slope:	1.000000
A1 (Gain):	0.372031	Y-int:	0.000000

A2 (Curvature):		0.000000					
n (Exponent):		1.000000					
Correlation:		0.999824		Status:	OK.		
Std Error of Est:		0.000173					
Predicted MDL:		0.000196					
Predicted MQL:		0.000654					
Std. Name	**Stated Conc.**	**Found Conc.**	**Difference**	**% Diff.**	**(S)IR**	**Std Dev**	**Emphasis**
CALBLK1	.00000	.00000	.000	.000	.00026	.000	1
CAL 1	.02000	.02200	.002	10.0	.00856	.000	1
Cal 2	5.0000	4.8679	-.132	-2.64	1.8297	.012	1
Cal 3	10.000	10.130	.130	1.30	3.8060	.055	1

Sample Name: ICV Acquired: 11/26/2014 7:10:53 Type: QC
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.9743**	**48.85**	**4.883**	**5.075**	**4.958**	**4.953**	**4.973**	**51.56**	**4.993**
Stddev	.0068	.32	.026	.006	.025	.074	.028	.11	.027
%RSD	.6967	.6649	.5399	.1240	.5095	1.504	.5697	.2162	.5320
#1	.9740	48.61	4.858	5.080	4.941	4.867	4.952	51.49	4.967
#2	.9812	49.22	4.879	5.077	4.987	5.003	4.963	51.51	4.990
#3	.9676	48.73	4.911	5.068	4.945	4.988	5.005	51.69	5.020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.150**	**5.016**	**4.954**	**49.66**	**49.15**	**4.975**	**48.84**	**4.914**	**1.014**
Stddev	.025	.033	.026	.11	.20	.029	.40	.030	.005
%RSD	.4893	.6503	.5263	.2203	.4128	.5751	.8267	.6167	.4934
#1	5.127	5.025	4.932	49.59	48.97	4.963	48.43	4.890	1.011
#2	5.145	5.043	4.947	49.79	49.37	5.007	49.24	4.948	1.011
#3	5.177	4.980	4.983	49.61	49.11	4.954	48.83	4.905	1.020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**49.31**	**5.058**	**5.266**	**5.067**	**50.34**	**.9971**	**.9988**	**5.230**	**5.031**
Stddev	.20	.028	.030	.023	.34	.0059	.0049	.008	.022
%RSD	.4063	.5475	.5627	.4549	.6825	.5896	.4873	.1550	.4356
#1	49.21	5.032	5.236	5.045	50.06	.9907	1.001	5.222	5.015
#2	49.54	5.053	5.267	5.065	50.24	.9984	.9933	5.231	5.022
#3	49.18	5.087	5.295	5.091	50.73	1.002	1.003	5.238	5.056
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: ICV Acquired: 11/26/2014 7:10:53 Type: QC
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.951**	**4.888**	**4.978**	**1.017**	**4.966**	**4.792**	**5.020**
Stddev	.093	.019	.015	.005	.070	.033	.027
%RSD	1.885	.3862	.3071	.4803	1.412	.6778	.5382
#1	4.844	4.880	4.964	1.014	5.014	4.760	4.998
#2	5.004	4.909	4.994	1.013	4.999	4.825	5.013
#3	5.007	4.874	4.976	1.022	4.886	4.792	5.050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**4656.1**
Stddev	5.3
%RSD	.11324
#1	4656.9
#2	4650.5
#3	4661.0

Sample Name: ICB Acquired: 11/26/2014 7:14:39 Type: QC
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0011**	**.0080**	**<.0000**	**.0151**	**.0004**	**.0005**	**<.0000**	**.0031**	**.0002**
Stddev	.0007	.0046	.0025	.0022	.0001	.0001	.0028	.0017	.0001
%RSD	64.34	57.84	321.8	14.88	24.63	15.34	59.97	54.44	54.95
#1	.0017	.0113	-.0035	.0176	.0004	.0006	-.0079	.0051	.0001
#2	.0013	.0027	.0016	.0144	.0003	.0004	-.0040	.0021	.0004
#3	.0003	.0100	-.0004	.0132	.0005	.0005	-.0023	.0021	.0002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000**	**<.0000**	**.0014**	**.0038**	**.0242**	**.0007**	**<.0000**	**.0004**	**<.0000**
Stddev	.0003	.0006	.0018	.0013	.0123	.0013	.0200	.0002	.0003
%RSD	551.9	59.19	125.1	34.84	50.94	187.0	205.7	41.23	807.8
#1	.0003	-.0006	.0017	.0027	.0361	.0001	-.0316	.0004	.0002
#2	.0000	-.0008	.0031	.0053	.0115	-.0002	-.0053	.0006	.0000
#3	-.0002	-.0017	-.0005	.0034	.0249	.0022	.0077	.0003	-.0004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0125**	**<.0000**	**.0018**	**<.0000**	**.0066**	**<.0000**	**<.0000**	**<.0000**	**.0014**
Stddev	.0063	.0003	.0023	.0009	.0007	.0021	.0021	.0075	.0006
%RSD	50.41	1394.	127.1	65.77	11.32	80.00	148.8	296.5	41.67
#1	.0055	.0003	.0022	-.0010	.0071	-.0002	-.0037	-.0045	.0021
#2	.0144	-.0002	-.0006	-.0008	.0057	-.0040	.0006	-.0088	.0009
#3	.0177	-.0001	.0039	-.0025	.0069	-.0035	-.0012	.0057	.0013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Sample Name: ICB Acquired: 11/26/2014 7:14:39 Type: QC
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005	<.0000	.0023	.0032	<.0000	.0021	.0003
Stddev	.0000	.0040	.0009	.0006	.0130	.0018	.0002
%RSD	3.436	123.7	38.19	17.20	257.7	85.65	65.43
#1	.0005	.0005	.0018	.0034	.0044	.0032	.0004
#2	.0005	-.0028	.0033	.0026	.0003	.0000	.0003
#3	.0005	-.0074	.0017	.0037	-.0198	.0032	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_3710
Units	Cts/S
Avg	4775.4
Stddev	22.6
%RSD	.47387
#1	4749.3
#2	4788.1
#3	4788.9

Sample Name: LLC Acquired: 11/26/2014 7:18:35 Type: QC
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0092**	**.1883**	**.0106**	W **.0650**	**.0497**	**.0052**	**.1994**	**1.107**
Stddev	.0011	.0049	.0018	.0016	.0002	.0000	.0039	.005
%RSD	11.51	2.584	17.04	2.438	.4009	.5475	1.952	.4572
#1	.0087	.1834	.0095	.0650	.0498	.0052	.2032	1.112
#2	.0104	.1931	.0096	.0665	.0495	.0051	.1954	1.104
#3	.0084	.1884	.0127	.0633	.0498	.0052	.1994	1.104
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value				.0500				
Range				20.00%				

Elem	Cd2288	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0051**	**.0539**	**.0094**	**.0283**	**.1036**	**4.858**	**.0507**	**.9793**
Stddev	.0002	.0002	.0009	.0017	.0025	.012	.0010	.0111
%RSD	3.525	.3048	9.265	6.019	2.450	.2366	1.906	1.136
#1	.0049	.0541	.0090	.0302	.1064	4.848	.0502	.9907
#2	.0051	.0538	.0104	.0270	.1026	4.871	.0501	.9685
#3	.0052	.0538	.0088	.0278	.1016	4.856	.0518	.9788
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mn2576	Mo2020	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0151**	**.0411**	**.9870**	**.0436**	**.2521**	**.0080**	**5.043**	**.0100**
Stddev	.0001	.0002	.0066	.0005	.0021	.0007	.022	.0049
%RSD	.7067	.4824	.6680	1.200	.8161	9.130	.4308	49.16
#1	.0151	.0410	.9879	.0437	.2532	.0075	5.068	.0046
#2	.0153	.0411	.9932	.0431	.2535	.0078	5.030	.0142
#3	.0150	.0414	.9801	.0441	.2498	.0088	5.030	.0112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Sample Name: LLC Acquired: 11/26/2014 7:18:35 Type: QC
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2516	Sn1899	Sr4077	Th2832	Ti3349	Tl1908	U_3670
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0148**	**.3956**	**.1033**	**.0052**	**.2013**	**.0204**	W **.0253**	**.5417**
Stddev	.0028	.0094	.0005	.0000	.0030	.0005	.0019	.0269
%RSD	19.07	2.370	.4749	.4444	1.498	2.380	7.625	4.960
#1	.0134	.4026	.1028	.0052	.2013	.0199	.0261	.5109
#2	.0129	.3850	.1037	.0052	.2044	.0209	.0231	.5539
#3	.0180	.3993	.1036	.0052	.1983	.0205	.0268	.5603
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass
Value							.0200	
Range							20.00%	

Elem	V_2908	Zn2138
Units	ppm	ppm
Avg	**.0506**	**.0218**
Stddev	.0014	.0002
%RSD	2.853	1.109
#1	.0506	.0219
#2	.0491	.0215
#3	.0520	.0219
Check ?	Chk Pass	Chk Pass
Value		
Range		

Int. Std.	Y_3710
Units	Cts/S
Avg	**4680.4**
Stddev	40.0
%RSD	.85560
#1	4648.1
#2	4667.9
#3	4725.2

Sample Name: ICSA Acquired: 11/26/2014 7:22:30 Type: QC
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	98.95	<.0000	<.0000	.0003	.0000	.0107
Stddev	.0004	.32	.0003	.0024	.0001	.0001	.0020
%RSD	65.85	.3224	6.770	35.42	34.93	157.5	18.63
#1	-.0009	98.59	-.0048	-.0089	.0002	.0001	.0099
#2	-.0002	99.06	-.0053	-.0068	.0004	.0000	.0092
#3	-.0005	99.20	-.0046	-.0042	.0003	.0000	.0130
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Ca1840	Cd2288	Co2286	Cr2835	Cu2178	Fe2599	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	97.70	<.0000	.0010	<.0000	.0030	99.03	98.97
Stddev	.82	.0002	.0001	.0002	.0032	.46	.18
%RSD	.8444	104.9	14.16	4.599	108.6	.4613	.1784
#1	97.03	-.0002	.0008	-.0038	.0029	98.55	98.77
#2	97.46	.0000	.0010	-.0036	-.0002	99.08	99.10
#3	98.62	-.0004	.0011	-.0040	.0063	99.46	99.05
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Li6707	Mg2798	Mn2576	Mo2020	Na5895	Ni2216	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0033	99.28	W .0046	<.0000	98.86	.0011	97.61
Stddev	.0003	.74	.0003	.0005	.23	.0003	.96
%RSD	8.296	.7477	6.123	73.68	.2370	30.58	.9849
#1	.0030	98.51	.0043	-.0001	98.62	.0014	96.81
#2	.0033	99.34	.0045	-.0011	99.08	.0007	97.33
#3	.0035	99.99	.0048	-.0007	98.87	.0011	98.67
Check ?	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			.0031				
Low Limit			-.0031				

Sample Name: ICSA Acquired: 11/26/2014 7:22:30 Type: QC
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	98.61	.0008	.0046	<.0000	<.0000	W<.0000
Stddev	.0009	.87	.0024	.0019	.0038	.0003	.0001
%RSD	52.71	.8795	292.3	41.40	27.91	20.30	1.748
#1	-.0007	98.00	.0012	.0026	-.0093	-.0018	-.0040
#2	-.0020	98.23	.0031	.0047	-.0144	-.0012	-.0039
#3	-.0025	99.60	-.0018	.0064	-.0166	-.0017	-.0041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn
High Limit							.0011
Low Limit							-.0011

Elem	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0301	.0023	.0030	<.0000	<.0000	<.0000
Stddev	.0035	.0009	.0013	.0239	.0009	.0000
%RSD	11.65	40.41	42.93	366.3	27.67	.1655
#1	.0263	.0033	.0044	-.0266	-.0032	-.0093
#2	.0308	.0014	.0022	-.0129	-.0043	-.0093
#3	.0332	.0022	.0023	.0199	-.0025	-.0093
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit						
Low Limit						

Int. Std.	Y_3710
Units	Cts/S
Avg	4639.6
Stddev	44.9
%RSD	.96672
#1	4684.7
#2	4639.2
#3	4595.0

Sample Name: ICSAB Acquired: 11/26/2014 7:26:20 Type: QC
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.5031**	**98.61**	**2.492**	**2.480**	**2.492**	**2.541**	**2.509**	**98.35**	**2.532**
Stddev	.0020	.50	.002	.011	.011	.011	.002	.34	.005
%RSD	.3990	.5043	.0885	.4469	.4242	.4133	.0710	.3414	.1872
#1	.5010	98.61	2.493	2.468	2.491	2.543	2.507	98.64	2.536
#2	.5050	99.11	2.494	2.490	2.503	2.551	2.509	98.42	2.534
#3	.5032	98.11	2.490	2.482	2.482	2.530	2.511	97.98	2.527
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.533**	**2.496**	**2.515**	**98.56**	**99.20**	**2.483**	**99.58**	**2.446**	**.5023**
Stddev	.008	.008	.009	.26	.36	.009	.54	.011	.0009
%RSD	.3289	.3322	.3514	.2605	.3589	.3521	.5465	.4391	.1880
#1	2.539	2.499	2.521	98.64	99.14	2.482	99.85	2.445	.5033
#2	2.537	2.503	2.518	98.77	99.58	2.493	99.93	2.457	.5023
#3	2.524	2.487	2.504	98.27	98.88	2.475	98.95	2.436	.5014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**98.64**	**2.500**	**99.37**	**2.498**	**99.94**	**.4984**	**.5044**	**2.505**	**2.508**
Stddev	.40	.007	.37	.013	.20	.0044	.0023	.012	.015
%RSD	.4054	.2663	.3737	.5035	.2032	.8808	.4590	.4943	.6156
#1	98.56	2.507	99.67	2.506	100.1	.4939	.5024	2.517	2.516
#2	99.07	2.500	99.48	2.504	100.0	.5027	.5038	2.493	2.518
#3	98.28	2.494	98.95	2.484	99.71	.4985	.5069	2.505	2.490
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: ICSAB Acquired: 11/26/2014 7:26:20 Type: QC
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.536	2.511	2.494	.5060	2.497	2.451	2.556
Stddev	.011	.007	.007	.0046	.025	.020	.004
%RSD	.4434	.2831	.3019	.9112	1.011	.8124	.1388
#1	2.537	2.509	2.496	.5067	2.506	2.457	2.559
#2	2.547	2.519	2.500	.5102	2.517	2.467	2.557
#3	2.525	2.506	2.486	.5011	2.469	2.429	2.552
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4499.4
Stddev	4.5
%RSD	.09939
#1	4501.4
#2	4494.3
#3	4502.6

Sample Name: LDR Acquired: 11/26/2014 7:29:48 Type: QC
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.988**	**99.95**	**9.902**	**9.991**	**9.938**	**9.749**	**9.925**	**97.79**	**9.884**
Stddev	.026	.34	.029	.045	.057	.084	.040	.11	.029
%RSD	1.310	.3404	.2875	.4540	.5780	.8659	.4065	.1158	.2912
#1	1.999	99.85	9.922	9.958	9.872	9.830	9.956	97.88	9.914
#2	1.958	99.67	9.915	9.972	9.967	9.662	9.940	97.83	9.882
#3	2.006	100.3	9.869	10.04	9.976	9.755	9.879	97.66	9.856
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.834**	**9.751**	**9.920**	**98.77**	**99.69**	**9.998**	**98.59**	**9.883**	**1.982**
Stddev	.016	.083	.039	.31	.33	.018	.38	.033	.005
%RSD	.1600	.8547	.3938	.3108	.3282	.1828	.3832	.3299	.2692
#1	9.849	9.758	9.962	98.65	99.55	9.993	98.46	9.870	1.988
#2	9.836	9.665	9.913	98.53	99.47	9.984	98.30	9.859	1.981
#3	9.818	9.831	9.885	99.11	100.1	10.02	99.02	9.920	1.977
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**99.84**	**9.803**	**97.70**	**9.815**	**99.22**	**1.992**	**1.992**	**9.906**	**9.831**
Stddev	.31	.018	.14	.026	.35	.010	.004	.026	.018
%RSD	.3096	.1788	.1435	.2625	.3563	.4994	.1941	.2591	.1860
#1	99.81	9.821	97.82	9.840	99.55	2.003	1.992	9.913	9.850
#2	99.55	9.803	97.73	9.815	99.26	1.987	1.996	9.877	9.827
#3	100.2	9.786	97.54	9.789	98.84	1.985	1.988	9.926	9.814
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: LDR Acquired: 11/26/2014 7:29:48 Type: QC
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.06**	**9.785**	**9.960**	**1.957**	**9.839**	**9.886**	**9.846**
Stddev	.14	.118	.032	.005	.105	.031	.019
%RSD	1.423	1.211	.3164	.2435	1.063	.3098	.1930
#1	10.19	9.841	9.936	1.961	9.844	9.869	9.864
#2	10.07	9.649	9.948	1.958	9.732	9.867	9.849
#3	9.907	9.865	9.996	1.952	9.941	9.921	9.826
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**4553.1**
Stddev	11.8
%RSD	.25955
#1	4558.1
#2	4561.6
#3	4539.6

Sample Name: CCV Acquired: 11/26/2014 7:33:40 Type: QC
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.9874**	**49.23**	**4.978**	**4.958**	**4.966**	**5.015**	**5.004**	**50.61**	**4.999**
Stddev	.0124	.23	.029	.013	.013	.050	.038	.41	.029
%RSD	1.253	.4769	.5928	.2603	.2663	.9965	.7613	.8040	.5731
#1	.9762	49.18	4.964	4.943	4.963	5.065	4.994	50.58	4.990
#2	.9854	49.02	4.959	4.967	4.954	4.965	4.972	50.21	4.976
#3	1.001	49.48	5.012	4.964	4.980	5.015	5.046	51.03	5.031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.051**	**5.041**	**4.991**	**49.72**	**49.24**	**4.947**	**49.20**	**4.965**	**.9950**
Stddev	.029	.046	.031	.20	.15	.009	.34	.034	.0061
%RSD	.5779	.9060	.6124	.4064	.3001	.1916	.6858	.6754	.6087
#1	5.043	5.007	4.981	49.54	49.22	4.938	49.14	4.966	.9941
#2	5.026	5.023	4.967	49.66	49.11	4.946	48.90	4.931	.9894
#3	5.083	5.093	5.025	49.94	49.40	4.957	49.56	4.998	1.001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**49.62**	**5.061**	**51.23**	**5.047**	**49.82**	**.9906**	**1.003**	**4.911**	**5.034**
Stddev	.09	.032	.27	.038	.29	.0027	.004	.017	.035
%RSD	.1792	.6222	.5209	.7506	.5855	.2752	.4343	.3453	.6925
#1	49.58	5.058	51.16	5.042	49.77	.9900	1.008	4.894	5.020
#2	49.55	5.031	51.01	5.012	49.56	.9882	.9989	4.909	5.009
#3	49.72	5.094	51.53	5.087	50.13	.9936	1.003	4.928	5.074
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: CCV Acquired: 11/26/2014 7:33:40 Type: QC
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.045**	**4.991**	**4.948**	**1.017**	**5.000**	**4.973**	**5.035**
Stddev	.055	.050	.020	.006	.070	.025	.035
%RSD	1.094	.9945	.3944	.5574	1.405	.5133	.6851
#1	5.028	4.958	4.930	1.016	5.005	4.968	5.030
#2	5.000	4.966	4.945	1.012	4.928	4.951	5.004
#3	5.107	5.048	4.968	1.023	5.068	5.001	5.072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**4654.5**
Stddev	38.0
%RSD	.81647
#1	4664.5
#2	4686.5
#3	4612.5

Sample Name: CCB Acquired: 11/26/2014 7:37:23 Type: QC
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0012**	**<.0000**	**<.0000**	**.0157**	**.0005**	**.0005**	**<.0000**
Stddev	.0002	.0138	.0024	.0034	.0000	.0001	.0037
%RSD	21.27	4980.	166.8	21.53	5.192	11.56	74.56
#1	.0014	-.0040	-.0022	.0140	.0006	.0006	-.0041
#2	.0010	.0150	-.0033	.0196	.0006	.0005	-.0017
#3	.0010	-.0119	.0013	.0135	.0005	.0005	-.0089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Ca1840	Cd2288	Co2286	Cr2835	Cu2178	Fe2599	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0033**	**.0003**	**.0001**	**.0012**	**.0029**	**.0031**	**.0167**
Stddev	.0007	.0001	.0004	.0008	.0026	.0020	.0177
%RSD	20.87	38.43	275.5	68.28	88.37	62.50	106.2
#1	.0040	.0002	.0002	.0004	.0054	.0052	.0297
#2	.0031	.0003	-.0003	.0021	.0029	.0029	-.0035
#3	.0027	.0004	.0005	.0012	.0003	.0013	.0238
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Li6707	Mg2798	Mn2576	Mo2020	Na5895	Ni2216	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0004**	**<.0000**	**.0005**	**<.0000**	**.0208**	**.0001**	**.0029**
Stddev	.0006	.0058	.0002	.0003	.0196	.0004	.0003
%RSD	134.8	72.94	35.34	143.8	93.88	355.7	11.22
#1	.0003	-.0015	.0003	-.0002	.0434	.0001	.0029
#2	.0011	-.0094	.0006	-.0005	.0104	.0005	.0025
#3	-.0001	-.0127	.0004	.0001	.0087	-.0003	.0032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: CCB Acquired: 11/26/2014 7:37:23 Type: QC
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W<.0000	.0105	.0005	<.0000	.0010	.0009	.0005
Stddev	.0018	.0031	.0037	.0020	.0017	.0007	.0001
%RSD	54.92	29.10	697.6	65.59	171.9	81.43	12.48
#1	-.0021	.0137	-.0037	-.0009	-.0007	.0014	.0005
#2	-.0052	.0076	.0034	-.0048	.0010	.0001	.0004
#3	-.0023	.0102	.0018	-.0033	.0028	.0012	.0004
Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	.0025						
Low Limit	-.0025						

Elem	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0016	.0004	<.0000	.0017	.0003
Stddev	.0019	.0010	.0010	.0087	.0030	.0004
%RSD	207.4	61.45	285.0	35.89	172.5	111.5
#1	-.0020	.0021	.0015	-.0154	.0031	.0007
#2	-.0022	.0023	-.0003	-.0244	.0037	-.0001
#3	.0013	.0005	-.0002	-.0328	-.0017	.0004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit						
Low Limit						

Int. Std.	Y_3710
Units	Cts/S
Avg	4699.4
Stddev	5.8
%RSD	.12238
#1	4702.4
#2	4703.1
#3	4692.8

Sample Name: LB 160-153858/1-E Acquired: 11/26/2014 7:41:22 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0016	.0003	.0068	<.0000	.0001	<.0000	.0678	.0002
Stddev	.0009	.0105	.0004	.0024	.0001	.0000	.0025	.0004	.0001
%RSD	480.8	672.0	137.0	34.95	158.9	11.04	523.6	.5705	83.79
#1	.0006	-.0093	-.0002	.0059	.0000	.0001	.0023	.0675	.0002
#2	-.0011	.0117	.0007	.0050	-.0002	.0001	-.0026	.0682	.0003
#3	.0000	.0023	.0004	.0095	-.0001	.0001	-.0012	.0677	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	.0010	.0042	<.0000	.0003	<.0000	.0002	<.0000
Stddev	.0000	.0006	.0016	.0008	.0126	.0010	.0163	.0003	.0001
%RSD	133.9	353.1	158.2	20.08	597.7	337.2	1934.	100.7	28.37
#1	.0000	.0005	.0027	.0049	-.0154	.0013	-.0057	.0000	-.0003
#2	.0000	-.0003	-.0004	.0033	-.0006	.0003	.0173	.0005	-.0004
#3	.0000	-.0006	.0006	.0043	.0096	-.0007	-.0141	.0003	-.0005
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0258	<.0000	.0010	<.0000	.0098	<.0000	.0015	.0062	.0009
Stddev	.0050	.0000	.0004	.0020	.0002	.0010	.0025	.0063	.0006
%RSD	19.39	2.100	43.76	143.7	2.528	259.7	165.5	101.7	65.34
#1	.0309	-.0004	.0015	.0009	.0099	.0001	.0013	.0073	.0013
#2	.0208	-.0004	.0008	-.0025	.0095	-.0016	-.0009	.0118	.0002
#3	.0258	-.0004	.0007	-.0027	.0100	.0003	.0041	-.0006	.0011
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LB 160-153858/1-E Acquired: 11/26/2014 7:41:22 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0006	.0012	.0007	.0146	.0006	.0077
Stddev	.0001	.0015	.0006	.0012	.0285	.0035	.0004
%RSD	112.8	243.9	44.88	162.9	195.7	566.6	4.699
#1	.0001	-.0003	.0006	.0007	.0284	.0046	.0074
#2	.0001	.0024	.0016	.0019	.0335	-.0004	.0078
#3	.0000	-.0003	.0015	-.0005	-.0182	-.0023	.0081
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4845.4
Stddev	23.5
%RSD	.48512
#1	4859.3
#2	4818.3
#3	4858.6

Sample Name: LCS 160-158796/2-A Acquired: 11/26/2014 7:45:19 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1923	10.02	.9991	2.006	1.033	1.037	.9694	10.87	1.007
Stddev	.0007	.05	.0128	.003	.003	.004	.0100	.10	.012
%RSD	.3481	.5416	1.283	.1646	.2538	.4217	1.036	.9080	1.173
#1	.1926	9.986	.9844	2.009	1.032	1.034	.9579	10.75	.9937
#2	.1928	10.08	1.008	2.006	1.036	1.042	.9763	10.92	1.014
#3	.1915	9.991	1.005	2.003	1.031	1.035	.9741	10.92	1.014
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.084	1.034	1.026	10.39	10.12	1.042	9.907	1.025	.4938
Stddev	.013	.008	.014	.02	.01	.001	.063	.008	.0050
%RSD	1.191	.7591	1.372	.1847	.1085	.0748	.6311	.7558	1.005
#1	1.069	1.038	1.010	10.37	10.11	1.043	9.850	1.019	.4881
#2	1.090	1.025	1.033	10.40	10.12	1.042	9.974	1.034	.4961
#3	1.093	1.039	1.035	10.40	10.13	1.043	9.896	1.022	.4972
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.22	1.062	1.065	1.044	9.483	.4910	.5051	.0214	1.001
Stddev	.03	.011	.015	.012	.105	.0086	.0028	.0060	.011
%RSD	.3128	1.057	1.427	1.106	1.109	1.754	.5567	28.00	1.102
#1	10.20	1.049	1.047	1.031	9.362	.4817	.5020	.0196	.9883
#2	10.25	1.069	1.075	1.049	9.542	.4987	.5076	.0282	1.008
#3	10.20	1.069	1.073	1.052	9.547	.4927	.5056	.0166	1.007
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LCS 160-158796/2-A Acquired: 11/26/2014 7:45:19 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.061	1.012	.9979	.2151	.9643	1.020	1.034
Stddev	.004	.017	.0004	.0030	.0369	.008	.011
%RSD	.3898	1.668	.0352	1.394	3.827	.7436	1.054
#1	1.059	1.027	.9983	.2117	.9622	1.016	1.021
#2	1.065	.9937	.9977	.2168	.9284	1.028	1.040
#3	1.058	1.017	.9976	.2169	1.002	1.014	1.041
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4775.0
Stddev	30.7
%RSD	.64319
#1	4810.3
#2	4759.4
#3	4755.1

Sample Name: LCSD 160-158796/3-A Acquired: 11/26/2014 7:48:55 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1949**	**9.947**	**.9803**	**2.008**	**1.026**	**1.025**	**.9529**	**10.74**	**.9945**
Stddev	.0025	.021	.0046	.003	.003	.002	.0100	.08	.0061
%RSD	1.267	.2080	.4739	.1388	.3301	.1597	1.047	.7162	.6092
#1	.1949	9.967	.9760	2.007	1.029	1.026	.9427	10.67	.9889
#2	.1925	9.949	.9852	2.006	1.027	1.025	.9533	10.74	.9938
#3	.1974	9.926	.9796	2.011	1.023	1.023	.9627	10.82	1.001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.068**	**1.038**	**1.022**	**10.28**	**9.948**	**1.034**	**9.732**	**1.014**	**.4870**
Stddev	.007	.008	.005	.01	.026	.002	.014	.001	.0023
%RSD	.6681	.7878	.4493	.1061	.2656	.1718	.1394	.0963	.4628
#1	1.062	1.033	1.017	10.29	9.919	1.036	9.747	1.015	.4845
#2	1.066	1.034	1.022	10.27	9.953	1.033	9.724	1.015	.4875
#3	1.076	1.048	1.026	10.30	9.971	1.033	9.723	1.013	.4889
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.12**	**1.045**	**1.044**	**1.029**	**9.267**	**.4837**	**.4936**	**.0254**	**.9789**
Stddev	.03	.008	.006	.008	.029	.0044	.0033	.0006	.0068
%RSD	.3126	.7455	.6251	.7571	.3160	.9095	.6598	2.247	.6908
#1	10.16	1.037	1.039	1.020	9.233	.4800	.4899	.0260	.9717
#2	10.11	1.045	1.041	1.031	9.281	.4825	.4951	.0253	.9798
#3	10.10	1.053	1.051	1.035	9.286	.4886	.4959	.0249	.9851
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LCSD 160-158796/3-A Acquired: 11/26/2014 7:48:55 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.051	1.023	.9814	.2135	1.020	1.012	1.020
Stddev	.004	.007	.0009	.0012	.015	.004	.005
%RSD	.3607	.6824	.0960	.5528	1.495	.3438	.4870
#1	1.055	1.021	.9805	.2122	1.003	1.016	1.014
#2	1.052	1.018	.9812	.2145	1.031	1.010	1.020
#3	1.047	1.031	.9824	.2139	1.025	1.009	1.024
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4797.8
Stddev	35.9
%RSD	.74741
#1	4826.4
#2	4809.4
#3	4757.5

Sample Name: LCS 160-158796/5-A Acquired: 11/26/2014 7:52:32 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0009**	**.0107**	**.0016**	**.0076**	**.0000**	**.0000**	**.0005**	**.0467**	**.0002**
Stddev	.0011	.0081	.0007	.0034	.0001	.0000	.0023	.0010	.0003
%RSD	124.5	75.29	41.88	44.09	435.5	79.45	491.2	2.062	126.4
#1	.0001	.0116	.0012	.0095	.0000	.0000	-.0004	.0457	.0003
#2	.0021	.0022	.0024	.0096	-.0001	.0000	-.0013	.0477	.0004
#3	.0004	.0183	.0012	.0037	.0001	.0001	.0031	.0467	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**<.0000**	**.0006**	**.0034**	**.0053**	**.0289**	**.0001**	**<.0000**	**.0002**	**<.0000**
Stddev	.0004	.0004	.0017	.0010	.0337	.0020	.0075	.0001	.0001
%RSD	56.02	58.51	49.44	19.15	116.6	3215.	380.4	84.77	66.31
#1	-.0005	.0004	.0051	.0056	.0539	.0016	-.0034	.0002	-.0003
#2	-.0004	.0004	.0017	.0062	.0423	.0008	.0062	.0000	-.0002
#3	-.0010	.0011	.0034	.0042	-.0094	-.0022	-.0087	.0003	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0177**	**.0006**	**.0009**	**.0026**	**.0066**	**.0013**	**<.0000**	**4.685**	**.0000**
Stddev	.0056	.0003	.0014	.0012	.0011	.0042	.0005	.015	.0005
%RSD	31.89	47.43	154.6	47.61	16.89	322.7	85.17	.3122	26640.
#1	.0208	.0008	-.0006	.0036	.0053	-.0034	-.0006	4.686	.0003
#2	.0211	.0007	.0023	.0031	.0071	.0024	-.0012	4.670	.0003
#3	.0112	.0003	.0011	.0012	.0074	.0049	-.0001	4.699	-.0006
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LCS 160-158796/5-A Acquired: 11/26/2014 7:52:32 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	<.0000	.0014	<.0000	<.0000	.0020	.0061
Stddev	.0001	.0020	.0001	.0016	.0043	.0016	.0003
%RSD	54.74	302.7	7.046	2206.	183.0	78.01	4.272
#1	.0004	-.0022	.0015	-.0006	.0026	.0037	.0063
#2	.0002	-.0014	.0014	-.0014	-.0044	.0006	.0058
#3	.0001	.0016	.0013	.0017	-.0053	.0016	.0062
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4690.2
Stddev	53.9
%RSD	1.1492
#1	4718.0
#2	4724.6
#3	4628.1

Sample Name: LCSD 160-158796/6-A Acquired: 11/26/2014 7:56:27 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**.0095**	**.0001**	**.0044**	**.0001**	**<.0000**	**<.0000**	**.0842**	**.0002**
Stddev	.0012	.0044	.0022	.0009	.0003	.0000	.0020	.0020	.0001
%RSD	1471.	46.15	2060.	20.06	401.8	57.91	164.2	2.324	61.65
#1	.0000	.0045	.0003	.0044	.0000	.0000	.0010	.0843	.0002
#2	-.0011	.0112	.0022	.0035	-.0002	.0000	-.0027	.0822	.0001
#3	.0013	.0128	-.0022	.0053	.0003	-.0001	-.0019	.0861	.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**<.0000**	**.0006**	**<.0000**	**.0031**	**<.0000**	**.0007**	**<.0000**	**<.0000**	**<.0000**
Stddev	.0006	.0004	.0014	.0009	.0296	.0009	.0072	.0003	.0003
%RSD	349.2	70.48	614.5	27.74	756.2	124.1	81.37	794.9	237.0
#1	.0004	.0011	-.0017	.0027	.0131	.0007	-.0111	-.0002	.0000
#2	-.0002	.0005	.0010	.0041	-.0381	-.0002	-.0146	.0003	.0001
#3	-.0008	.0002	.0000	.0026	.0133	.0016	-.0008	-.0002	-.0005
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0283**	**.0008**	**.0025**	**.0011**	**.0088**	**<.0000**	**.0021**	**4.786**	**.0004**
Stddev	.0073	.0001	.0004	.0013	.0011	.0031	.0006	.017	.0007
%RSD	25.85	11.98	17.03	113.5	12.01	480.0	29.94	.3639	176.9
#1	.0253	.0009	.0026	-.0003	.0083	.0027	.0018	4.803	-.0002
#2	.0230	.0007	.0028	.0022	.0100	-.0033	.0016	4.768	.0012
#3	.0367	.0008	.0020	.0015	.0081	-.0014	.0028	4.787	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LCSD 160-158796/6-A Acquired: 11/26/2014 7:56:27 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0001	.0011	<.0000	<.0000	.0018	.0113
Stddev	.0001	.0019	.0005	.0020	.0220	.0022	.0002
%RSD	151.3	1724.	43.82	357.8	260.2	121.7	1.851
#1	.0001	.0020	.0010	-.0019	-.0180	.0044	.0113
#2	-.0001	-.0018	.0006	-.0016	.0167	.0002	.0110
#3	.0002	.0001	.0015	.0018	-.0242	.0009	.0114
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4760.4
Stddev	23.6
%RSD	.49661
#1	4733.5
#2	4778.0
#3	4769.6

Sample Name: 160-9093-G-1-K Acquired: 11/26/2014 8:00:23 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0002**	**<.0000**	**<.0000**	**.0049**	**.0258**	**<.0000**	**<.0000**	**5.061**	**.0000**
Stddev	.0005	.0044	.0010	.0018	.0002	.0000	.0035	.010	.0001
%RSD	240.7	81.10	119.0	37.06	.9009	81.48	191.2	.1940	295.4
#1	-.0003	-.0106	-.0017	.0070	.0261	-.0001	-.0005	5.051	.0001
#2	.0007	-.0030	.0003	.0039	.0257	.0000	.0008	5.071	-.0001
#3	.0003	-.0029	-.0011	.0038	.0257	.0000	-.0059	5.062	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**<.0000**	**<.0000**	**.0013**	**<.0000**	**.3097**	**.0014**	**.6195**	**<.0000**	**.0001**
Stddev	.0002	.0016	.0020	.0004	.0183	.0016	.0272	.0003	.0002
%RSD	686.0	68.44	154.7	27.85	5.897	111.3	4.387	132.7	398.0
#1	.0001	-.0006	-.0007	-.0017	.3257	-.0003	.6492	.0001	.0003
#2	-.0003	-.0026	.0012	-.0010	.3135	.0018	.5959	-.0005	.0000
#3	.0001	-.0039	.0033	-.0012	.2898	.0028	.6133	-.0002	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.119**	**<.0000**	**.0083**	**<.0000**	**.3554**	**<.0000**	**.0025**	**1.966**	**.0007**
Stddev	.007	.0003	.0002	.0003	.0035	.0025	.0051	.007	.0001
%RSD	.3158	653.3	2.381	83.01	.9788	733.1	202.4	.3582	15.21
#1	2.127	.0003	.0081	-.0007	.3564	.0024	.0077	1.973	.0007
#2	2.117	-.0001	.0084	-.0003	.3582	-.0008	-.0026	1.967	.0006
#3	2.114	-.0002	.0085	-.0002	.3515	-.0026	.0026	1.959	.0008
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9093-G-1-K Acquired: 11/26/2014 8:00:23 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0343	<.0000	.0005	<.0000	.0285	.0018	.0070
Stddev	.0001	.0030	.0005	.0014	.0184	.0011	.0001
%RSD	.2914	223.1	106.0	212.2	64.60	62.95	1.017
#1	.0344	-.0038	.0006	-.0001	.0074	.0013	.0070
#2	.0342	.0020	-.0001	-.0022	.0413	.0011	.0070
#3	.0343	-.0022	.0009	.0004	.0370	.0031	.0069
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4717.8
Stddev	33.2
%RSD	.70320
#1	4682.0
#2	4723.9
#3	4747.5

Sample Name: 160-9093-G-1-K SD Acquired: 11/26/2014 8:04:17 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=50

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0002**	**<.0000**	**.0008**	**.0035**	**.0048**	**<.0000**	**<.0000**	**.9372**	**.0001**
Stddev	.0007	.0082	.0021	.0021	.0001	.0000	.0026	.0066	.0001
%RSD	350.9	211.2	251.3	60.37	2.248	12.31	74.44	.6994	169.0
#1	.0009	-.0090	.0032	.0015	.0048	.0000	-.0046	.9348	.0002
#2	-.0004	-.0083	.0002	.0057	.0050	.0000	-.0005	.9322	.0001
#3	.0000	.0056	-.0008	.0032	.0048	.0000	-.0052	.9447	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**<.0000**	**<.0000**	**<.0000**	**<.0000**	**.0795**	**.0003**	**.1131**	**<.0000**	**<.0000**
Stddev	.0004	.0009	.0006	.0020	.0160	.0009	.0051	.0002	.0004
%RSD	77.02	63.89	490.2	89.84	20.14	347.9	4.531	278.4	81.82
#1	-.0002	-.0023	.0003	-.0039	.0823	.0008	.1157	-.0002	-.0003
#2	-.0009	-.0008	.0002	.0000	.0623	.0008	.1072	-.0002	-.0010
#3	-.0003	-.0009	-.0008	-.0027	.0939	-.0008	.1165	.0001	-.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.4234**	**<.0000**	**.0014**	**<.0000**	**.0647**	**.0020**	**.0031**	**.3658**	**.0000**
Stddev	.0089	.0001	.0018	.0013	.0045	.0021	.0024	.0032	.0006
%RSD	2.103	163.7	130.6	97.09	7.016	105.9	77.04	.8698	1146.
#1	.4237	.0001	-.0007	-.0027	.0612	-.0003	.0004	.3627	-.0005
#2	.4143	-.0002	.0020	-.0001	.0631	.0023	.0039	.3691	.0006
#3	.4321	-.0001	.0027	-.0012	.0698	.0038	.0051	.3656	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9093-G-1-K SD Acquired: 11/26/2014 8:04:17 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=50

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0066	<.0000	.0004	.0006	.0289	.0022	.0064
Stddev	.0001	.0035	.0007	.0007	.0169	.0026	.0001
%RSD	1.851	83.35	177.6	129.0	58.28	115.5	2.009
#1	.0064	-.0011	.0002	.0009	.0480	.0015	.0065
#2	.0066	-.0080	.0011	.0011	.0158	.0001	.0064
#3	.0067	-.0035	-.0002	-.0003	.0231	.0051	.0062
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4821.5
Stddev	33.4
%RSD	.69277
#1	4820.1
#2	4855.5
#3	4788.7

Sample Name: MB 160-158541/1-A Acquired: 11/26/2014 8:08:13 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0117	.0018	.0187	.0004	<.0000	.0003	.0439	.0001
Stddev	.0012	.0117	.0012	.0033	.0001	.0000	.0019	.0001	.0001
%RSD	1569.	100.6	70.39	17.90	26.99	18.56	587.1	.1804	74.41
#1	.0011	.0216	.0022	.0220	.0004	.0000	-.0015	.0439	.0000
#2	.0003	-.0013	.0027	.0153	.0003	.0000	.0023	.0439	.0001
#3	-.0012	.0147	.0004	.0188	.0005	-.0001	.0002	.0438	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	.0001	.0068	.0114	.0001	.0225	.0013	<.0000
Stddev	.0004	.0014	.0019	.0007	.0184	.0010	.0044	.0003	.0003
%RSD	423.8	324.3	2025.	10.86	161.2	1483.	19.74	22.49	338.8
#1	.0004	.0004	-.0012	.0070	.0231	.0002	.0238	.0015	.0002
#2	-.0003	-.0021	.0023	.0060	-.0098	.0010	.0261	.0015	-.0001
#3	-.0004	.0004	-.0008	.0075	.0211	-.0009	.0175	.0010	-.0004
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0354	<.0000	.0018	<.0000	.0070	.0003	.0023	.0721	<.0000
Stddev	.0040	.0001	.0008	.0020	.0020	.0028	.0034	.0052	.0003
%RSD	11.19	30.38	41.87	96.68	28.53	1072.	148.3	7.263	241.1
#1	.0378	-.0003	.0017	-.0009	.0092	-.0022	.0002	.0780	-.0001
#2	.0308	-.0004	.0011	-.0010	.0063	-.0004	.0063	.0705	-.0004
#3	.0375	-.0005	.0026	-.0044	.0054	.0033	.0005	.0679	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: MB 160-158541/1-A Acquired: 11/26/2014 8:08:13 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	<.0000	.0017	<.0000	.0917	.0021	.0074
Stddev	.0001	.0070	.0004	.0002	.0287	.0014	.0000
%RSD	53.82	864.6	24.42	461.0	31.33	67.81	.4448
#1	.0000	.0073	.0021	-.0001	.0908	.0028	.0074
#2	.0001	-.0044	.0016	-.0002	.0635	.0029	.0074
#3	.0001	-.0053	.0013	.0002	.1209	.0004	.0074
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4683.5
Stddev	20.9
%RSD	.44683
#1	4674.6
#2	4668.5
#3	4707.4

Sample Name: LCSSRM 160-158541/2- Acquired: 11/26/2014 8:12:09 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=2

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2928**	**34.36**	**.3806**	**.4295**	**.8815**	**.2444**	**.0001**	**34.49**	**.6164**
Stddev	.0005	.21	.0007	.0033	.0041	.0011	.0037	.04	.0018
%RSD	.1869	.6135	.1856	.7610	.4625	.4401	6999.	.1031	.2974
#1	.2924	34.19	.3804	.4286	.8776	.2434	.0040	34.53	.6182
#2	.2925	34.59	.3801	.4267	.8857	.2456	-.0034	34.49	.6163
#3	.2934	34.29	.3814	.4331	.8812	.2442	-.0004	34.46	.6146
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.9028**	**.3912**	**1.129**	**55.97**	**10.33**	**.0338**	**11.75**	**1.806**	**.4603**
Stddev	.0016	.0027	.004	.12	.02	.0004	.07	.012	.0010
%RSD	.1789	.7002	.3905	.2113	.2361	1.054	.6351	.6533	.2172
#1	.9044	.3889	1.132	55.84	10.30	.0336	11.68	1.796	.4607
#2	.9028	.3905	1.130	55.99	10.35	.0342	11.83	1.819	.4610
#3	.9012	.3942	1.124	56.08	10.33	.0335	11.74	1.803	.4591
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.401**	**1.055**	**2.355**	**.4420**	**1.058**	**.5185**	**.5502**	**1.538**	**.6663**
Stddev	.011	.003	.015	.0013	.013	.0041	.0062	.006	.0016
%RSD	.2548	.3170	.6527	.3049	1.260	.7914	1.119	.3905	.2360
#1	4.393	1.059	2.360	.4411	1.068	.5231	.5572	1.544	.6677
#2	4.414	1.054	2.368	.4436	1.063	.5151	.5479	1.532	.6646
#3	4.396	1.053	2.338	.4413	1.043	.5172	.5455	1.539	.6666
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LCSSRM 160-158541/2- Acquired: 11/26/2014 8:12:09 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=2

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7235	.0398	.8256	.6559	.0480	.6395	.5664
Stddev	.0039	.0036	.0030	.0033	.0223	.0041	.0016
%RSD	.5441	9.069	.3637	.5029	46.36	.6435	.2907
#1	.7201	.0429	.8240	.6594	.0229	.6349	.5678
#2	.7278	.0359	.8238	.6554	.0557	.6425	.5668
#3	.7225	.0407	.8291	.6529	.0654	.6413	.5646
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	5277.7
Stddev	25.5
%RSD	.48281
#1	5296.4
#2	5288.1
#3	5248.7

Sample Name: 160-9129-E-1-I Acquired: 11/26/2014 8:15:47 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0008**	**11.46**	**.0015**	**.0117**	**.1660**	**.0006**	**<.0000**	**14.40**	**.0002**
Stddev	.0006	.10	.0002	.0026	.0007	.0000	.0031	.23	.0002
%RSD	76.75	.8392	15.50	21.81	.4394	5.329	59.89	1.626	106.4
#1	.0005	11.39	.0014	.0092	.1657	.0006	-.0071	14.50	.0004
#2	.0003	11.57	.0018	.0116	.1668	.0006	-.0016	14.57	.0001
#3	.0014	11.41	.0014	.0143	.1655	.0006	-.0068	14.13	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0045**	**.0059**	**.0093**	**10.86**	**3.796**	**.0210**	**5.279**	**.3103**	**.0002**
Stddev	.0003	.0002	.0016	.09	.025	.0008	.060	.0024	.0001
%RSD	6.729	2.987	17.05	.7974	.6627	3.741	1.140	.7672	59.16
#1	.0046	.0057	.0109	10.85	3.793	.0201	5.266	.3091	.0004
#2	.0047	.0059	.0078	10.95	3.823	.0213	5.345	.3130	.0001
#3	.0041	.0060	.0094	10.78	3.773	.0216	5.227	.3088	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1486**	**.0068**	**.4637**	**.0083**	**.1563**	**.0026**	**<.0000**	**.1482**	**.0005**
Stddev	.0012	.0001	.0077	.0018	.0012	.0036	.0017	.0051	.0005
%RSD	.8053	2.007	1.663	22.02	.7453	139.2	116.6	3.413	94.56
#1	.1481	.0067	.4692	.0104	.1560	.0067	-.0035	.1540	.0002
#2	.1500	.0069	.4671	.0068	.1575	.0007	-.0004	.1448	.0011
#3	.1477	.0067	.4549	.0079	.1552	.0003	-.0006	.1458	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9129-E-1-I Acquired: 11/26/2014 8:15:47 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0425	.0078	.2994	.0012	.0192	.0225	.0397
Stddev	.0001	.0059	.0028	.0005	.0498	.0021	.0006
%RSD	.1884	76.53	.9256	38.91	260.1	9.271	1.565
#1	.0425	.0101	.2979	.0011	.0364	.0215	.0400
#2	.0426	.0121	.3026	.0017	.0581	.0211	.0401
#3	.0424	.0010	.2978	.0008	-.0370	.0249	.0389
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4832.2
Stddev	68.1
%RSD	1.4086
#1	4817.8
#2	4772.4
#3	4906.3

Sample Name: CCV Acquired: 11/26/2014 8:19:40 Type: QC
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.9757**	**48.59**	**4.965**	**5.054**	**4.944**	**4.937**	**5.028**	**51.64**	**5.001**
Stddev	.0032	.17	.020	.014	.013	.061	.016	.22	.020
%RSD	.3251	.3502	.4075	.2693	.2628	1.239	.3235	.4196	.4054
#1	.9759	48.78	4.988	5.068	4.959	4.991	5.046	51.88	5.024
#2	.9788	48.45	4.951	5.053	4.933	4.871	5.023	51.60	4.992
#3	.9725	48.56	4.956	5.041	4.942	4.950	5.015	51.46	4.987
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.020**	**5.124**	**4.998**	**50.38**	**49.21**	**4.909**	**48.84**	**4.948**	**1.013**
Stddev	.023	.023	.016	.13	.07	.014	.15	.014	.005
%RSD	.4653	.4480	.3218	.2527	.1460	.2879	.3108	.2803	.4560
#1	5.045	5.140	5.017	50.53	49.28	4.923	48.98	4.961	1.018
#2	5.017	5.135	4.988	50.30	49.14	4.895	48.68	4.933	1.011
#3	4.999	5.098	4.990	50.32	49.20	4.908	48.86	4.950	1.009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**49.93**	**5.051**	**50.19**	**5.073**	**49.46**	**.9889**	**1.001**	**4.900**	**5.045**
Stddev	.12	.021	.18	.026	.20	.0053	.006	.010	.023
%RSD	.2405	.4213	.3625	.5091	.4032	.5409	.5896	.2001	.4480
#1	50.07	5.075	50.39	5.102	49.69	.9909	1.008	4.910	5.071
#2	49.86	5.043	50.14	5.064	49.34	.9828	.9960	4.900	5.033
#3	49.86	5.034	50.04	5.052	49.35	.9929	.9997	4.890	5.032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: CCV Acquired: 11/26/2014 8:19:40 Type: QC
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.949**	**4.919**	**4.942**	**1.008**	**5.130**	**4.894**	**5.057**
Stddev	.036	.024	.010	.006	.042	.021	.026
%RSD	.7317	.4785	.2068	.6496	.8185	.4266	.5170
#1	4.974	4.946	4.953	1.014	5.173	4.897	5.087
#2	4.966	4.909	4.933	1.001	5.127	4.872	5.044
#3	4.908	4.902	4.939	1.007	5.090	4.914	5.040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**4529.3**
Stddev	20.3
%RSD	.44927
#1	4508.2
#2	4530.9
#3	4548.8

Sample Name: CCB Acquired: 11/26/2014 8:23:24 Type: QC
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0005**	**<.0000**	**.0006**	**.0124**	**.0005**	**.0004**	**<.0000**	**.0021**
Stddev	.0010	.0063	.0026	.0025	.0002	.0001	.0043	.0010
%RSD	212.4	96.67	446.1	20.27	39.56	16.75	128.0	49.33
#1	.0013	-.0016	.0036	.0149	.0007	.0005	-.0026	.0028
#2	-.0007	-.0044	-.0011	.0123	.0003	.0004	.0005	.0026
#3	.0008	-.0136	-.0007	.0099	.0005	.0004	-.0081	.0009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Cd2288	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0002**	**.0000**	**.0005**	**.0000**	**.0038**	**.0407**	**.0008**	**.0031**
Stddev	.0002	.0003	.0008	.0018	.0010	.0093	.0005	.0105
%RSD	110.9	770.7	168.7	7008.	25.67	22.92	54.52	332.9
#1	.0004	-.0002	.0012	.0012	.0039	.0514	.0004	.0050
#2	.0000	.0003	-.0004	-.0020	.0028	.0363	.0008	.0126
#3	.0001	.0000	.0006	.0009	.0047	.0344	.0013	-.0082
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mn2576	Mo2020	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0005**	**<.0000**	**.0023**	**<.0000**	**.0014**	**<.0000**	**.0051**	**.0008**
Stddev	.0002	.0004	.0017	.0003	.0005	.0017	.0029	.0047
%RSD	41.04	464.5	74.94	1492.	38.95	72.62	56.67	595.2
#1	.0007	.0001	.0008	-.0001	.0015	-.0016	.0071	.0024
#2	.0003	-.0005	.0042	-.0003	.0018	-.0012	.0018	-.0045
#3	.0004	.0001	.0019	.0003	.0008	-.0044	.0064	.0044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB Acquired: 11/26/2014 8:23:24 Type: QC
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2516	Sn1899	Sr4077	Th2832	Ti3349	Tl1908	U_3670
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0005**	**.0022**	**.0000**	**.0004**	**<.0000**	**.0011**	**.0003**	W **.0580**
Stddev	.0012	.0075	.0005	.0000	.0034	.0001	.0012	.0188
%RSD	221.5	332.0	2492.	7.815	464.3	12.86	410.2	32.47
#1	.0002	.0106	-.0004	.0004	-.0033	.0012	.0017	.0750
#2	.0018	-.0002	-.0002	.0004	.0031	.0012	-.0006	.0378
#3	-.0004	-.0036	.0006	.0005	-.0019	.0009	-.0002	.0613
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn
High Limit								.0480
Low Limit								-.0470

Elem	V_2908	Zn2138
Units	ppm	ppm
Avg	**.0022**	**.0006**
Stddev	.0019	.0003
%RSD	86.21	55.93
#1	.0044	.0009
#2	.0009	.0005
#3	.0013	.0003
Check ?	Chk Pass	Chk Pass
High Limit		
Low Limit		

Int. Std.	Y_3710
Units	Cts/S
Avg	**4507.0**
Stddev	32.8
%RSD	.72840
#1	4503.7
#2	4541.3
#3	4475.9

Sample Name: 160-9129-E-1-I SD Acquired: 11/26/2014 8:27:21 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=50

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0009**	**2.241**	**<.0000**	**.0070**	**.0332**	**.0001**	**<.0000**	**2.884**	**.0003**
Stddev	.0011	.010	.0004	.0025	.0002	.0000	.0008	.015	.0001
%RSD	119.5	.4400	1952.	36.28	.4651	18.85	27.89	.5192	44.37
#1	.0010	2.246	.0002	.0042	.0331	.0002	-.0019	2.872	.0002
#2	.0021	2.248	-.0005	.0075	.0332	.0001	-.0032	2.901	.0004
#3	-.0002	2.230	.0002	.0092	.0334	.0001	-.0032	2.881	.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0012**	**.0015**	**.0024**	**2.157**	**.7703**	**.0049**	**1.019**	**.0610**	**<.0000**
Stddev	.0003	.0010	.0014	.008	.0111	.0008	.012	.0005	.0001
%RSD	30.17	68.83	60.24	.3776	1.441	16.70	1.155	.8865	57.70
#1	.0016	.0027	.0040	2.163	.7752	.0043	1.012	.0605	-.0001
#2	.0009	.0013	.0014	2.160	.7782	.0058	1.011	.0616	-.0001
#3	.0010	.0006	.0018	2.147	.7576	.0045	1.032	.0609	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0375**	**.0010**	**.0901**	**.0010**	**.0301**	**.0014**	**<.0000**	**.0268**	**.0003**
Stddev	.0086	.0001	.0013	.0032	.0022	.0012	.0013	.0061	.0002
%RSD	23.05	7.454	1.434	313.8	7.360	85.29	326.0	22.53	58.38
#1	.0364	.0010	.0896	.0026	.0285	.0026	-.0007	.0299	.0004
#2	.0466	.0009	.0916	.0032	.0291	.0002	.0010	.0308	.0001
#3	.0295	.0011	.0892	-.0027	.0326	.0016	-.0015	.0199	.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9129-E-1-I SD Acquired: 11/26/2014 8:27:21 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=50

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0084	.0028	.0586	.0029	.0747	.0064	.0126
Stddev	.0000	.0017	.0005	.0020	.0188	.0018	.0002
%RSD	.3328	62.82	.8297	69.90	25.23	28.88	1.375
#1	.0085	.0048	.0584	.0038	.0842	.0042	.0124
#2	.0084	.0018	.0592	.0006	.0868	.0072	.0128
#3	.0084	.0017	.0583	.0044	.0530	.0076	.0125
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4823.8
Stddev	30.2
%RSD	.62544
#1	4809.9
#2	4803.2
#3	4858.4

Sample Name: 160-9129-E-1-J MS Acquired: 11/26/2014 8:31:14 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0133**	**16.05**	**.0704**	**.1505**	**.2606**	**.0681**	**.0716**	**16.55**	**.0692**
Stddev	.0011	.06	.0016	.0032	.0008	.0001	.0015	.04	.0003
%RSD	8.126	.3723	2.301	2.147	.3219	.0894	2.057	.2716	.4733
#1	.0146	16.05	.0694	.1541	.2611	.0681	.0726	16.58	.0692
#2	.0128	16.10	.0723	.1496	.2611	.0682	.0699	16.58	.0696
#3	.0126	15.98	.0696	.1478	.2596	.0681	.0723	16.50	.0689
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0754**	**.0777**	**.0777**	**13.81**	**5.438**	**.0930**	**7.064**	**.4296**	**.0318**
Stddev	.0003	.0018	.0005	.00	.025	.0003	.020	.0019	.0006
%RSD	.4487	2.377	.6967	.0317	.4660	.2754	.2803	.4373	1.842
#1	.0757	.0787	.0774	13.80	5.464	.0933	7.053	.4312	.0323
#2	.0755	.0789	.0783	13.81	5.413	.0927	7.087	.4302	.0319
#3	.0751	.0756	.0774	13.81	5.439	.0929	7.052	.4275	.0312
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.8953**	**.0765**	**.5330**	**.0826**	**.8888**	**.0126**	**.0349**	**.1735**	**.0647**
Stddev	.0037	.0004	.0022	.0015	.0092	.0025	.0041	.0017	.0003
%RSD	.4150	.5383	.4066	1.859	1.034	19.86	11.62	.9626	.4739
#1	.8992	.0769	.5352	.0835	.8967	.0114	.0396	.1735	.0645
#2	.8918	.0765	.5329	.0836	.8911	.0109	.0327	.1718	.0645
#3	.8950	.0761	.5309	.0809	.8787	.0155	.0324	.1751	.0651
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9129-E-1-J MS Acquired: 11/26/2014 8:31:14 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1165	.0724	.5027	.0181	.1306	.0870	.1120
Stddev	.0003	.0061	.0012	.0013	.0295	.0049	.0004
%RSD	.2205	8.374	.2462	7.250	22.62	5.617	.3949
#1	.1167	.0763	.5037	.0167	.1573	.0814	.1121
#2	.1167	.0756	.5031	.0193	.1357	.0903	.1123
#3	.1163	.0654	.5013	.0183	.0989	.0894	.1115
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	5012.4
Stddev	24.3
%RSD	.48430
#1	4993.6
#2	5003.7
#3	5039.8

Sample Name: 160-9129-E-1-K MSD Acquired: 11/26/2014 8:35:03 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0166	20.90	.0824	.1791	.3382	.0795	.0828	20.62	.0823
Stddev	.0003	.05	.0015	.0013	.0003	.0003	.0027	.15	.0002
%RSD	2.095	.2549	1.847	.7083	.0907	.3364	3.283	.7336	.1855
#1	.0168	20.95	.0809	.1804	.3379	.0796	.0826	20.54	.0823
#2	.0167	20.92	.0824	.1790	.3386	.0797	.0855	20.79	.0824
#3	.0162	20.85	.0839	.1779	.3382	.0792	.0801	20.52	.0821
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0901	.0903	.0931	17.72	6.940	.1118	9.051	.6130	.0377
Stddev	.0005	.0025	.0020	.07	.021	.0015	.102	.0029	.0000
%RSD	.5402	2.734	2.156	.3977	.3060	1.336	1.122	.4792	.0459
#1	.0902	.0920	.0921	17.74	6.942	.1106	9.134	.6154	.0377
#2	.0905	.0914	.0955	17.77	6.960	.1135	9.081	.6139	.0377
#3	.0896	.0875	.0919	17.64	6.918	.1113	8.938	.6097	.0377
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.059	.0911	.7002	.0985	1.046	.0145	.0434	.2990	.0776
Stddev	.002	.0003	.0058	.0006	.007	.0040	.0022	.0013	.0008
%RSD	.2092	.3113	.8245	.6160	.6819	27.33	5.105	.4502	1.022
#1	1.061	.0910	.6990	.0991	1.038	.0165	.0418	.2979	.0770
#2	1.061	.0914	.7065	.0979	1.049	.0099	.0459	.3005	.0785
#3	1.057	.0909	.6952	.0984	1.051	.0171	.0424	.2985	.0772
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9129-E-1-K MSD Acquired: 11/26/2014 8:35:03 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1419	.0807	.7042	.0209	.1146	.1073	.1371
Stddev	.0004	.0077	.0006	.0015	.0681	.0040	.0009
%RSD	.2674	9.504	.0907	7.176	59.40	3.698	.6389
#1	.1419	.0869	.7040	.0227	.1463	.1116	.1361
#2	.1423	.0831	.7050	.0204	.1611	.1066	.1378
#3	.1415	.0721	.7038	.0198	.0365	.1038	.1375
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	5041.5
Stddev	62.2
%RSD	1.2330
#1	5015.0
#2	4997.0
#3	5112.6

Sample Name: 160-9129-E-2-E Acquired: 11/26/2014 8:38:53 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0007	13.94	.0027	.0160	.2112	.0007	<.0000	21.86	.0001
Stddev	.0005	.09	.0023	.0004	.0014	.0000	.0032	.10	.0000
%RSD	81.13	.6315	86.17	2.225	.6517	4.821	89.14	.4364	34.97
#1	.0001	13.87	.0032	.0164	.2104	.0007	-.0072	21.82	.0001
#2	.0012	14.04	.0047	.0159	.2128	.0007	-.0010	21.78	.0001
#3	.0007	13.91	.0002	.0157	.2105	.0006	-.0026	21.96	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0052	.0081	.0093	13.01	4.781	.0292	6.481	.3587	.0000
Stddev	.0004	.0011	.0030	.06	.037	.0010	.048	.0032	.0001
%RSD	7.272	14.07	31.77	.4301	.7790	3.542	.7337	.8835	9262.
#1	.0055	.0075	.0105	12.97	4.787	.0283	6.426	.3561	-.0001
#2	.0052	.0094	.0059	13.07	4.814	.0289	6.508	.3622	.0001
#3	.0048	.0074	.0115	12.99	4.740	.0303	6.509	.3578	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1938	.0078	.5439	.0086	.1924	<.0000	<.0000	.1953	.0003
Stddev	.0011	.0000	.0010	.0007	.0024	.0009	.0012	.0028	.0005
%RSD	.5647	.2617	.1783	8.155	1.256	163.8	52.10	1.432	180.3
#1	.1929	.0078	.5438	.0092	.1938	.0002	-.0023	.1957	.0007
#2	.1936	.0078	.5431	.0078	.1896	-.0016	-.0037	.1924	.0003
#3	.1950	.0079	.5450	.0088	.1937	-.0003	-.0012	.1979	-.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9129-E-2-E Acquired: 11/26/2014 8:38:53 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0611	.0093	.3502	.0047	.0340	.0252	.0431
Stddev	.0004	.0021	.0004	.0014	.0243	.0003	.0002
%RSD	.6247	22.47	.1135	29.92	71.53	1.075	.3568
#1	.0609	.0077	.3498	.0063	.0332	.0255	.0429
#2	.0615	.0086	.3506	.0035	.0101	.0250	.0430
#3	.0609	.0117	.3503	.0045	.0587	.0251	.0432
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	5050.2
Stddev	23.8
%RSD	.47092
#1	5076.6
#2	5043.3
#3	5030.6

Sample Name: 160-9129-E-3-E Acquired: 11/26/2014 8:42:44 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**18.65**	**.0031**	**.0160**	**.2472**	**.0009**	**<.0000**	**15.27**	**.0004**
Stddev	.0002	.05	.0009	.0023	.0007	.0000	.0031	.23	.0001
%RSD	159.7	.2922	30.36	14.38	.2857	3.719	152.4	1.510	23.23
#1	.0001	18.65	.0026	.0168	.2471	.0009	-.0028	15.04	.0004
#2	.0003	18.60	.0041	.0134	.2466	.0009	.0014	15.27	.0003
#3	.0000	18.71	.0024	.0177	.2480	.0009	-.0046	15.51	.0005
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0067**	**.0105**	**.0136**	**17.10**	**6.415**	**.0327**	**8.144**	**.4675**	**.0017**
Stddev	.0007	.0005	.0027	.03	.024	.0005	.010	.0016	.0003
%RSD	10.19	4.842	19.71	.1576	.3807	1.679	.1283	.3324	15.93
#1	.0060	.0109	.0162	17.08	6.388	.0333	8.140	.4661	.0020
#2	.0067	.0099	.0136	17.08	6.420	.0324	8.156	.4672	.0017
#3	.0073	.0107	.0108	17.13	6.436	.0322	8.137	.4692	.0015
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2214**	**.0104**	**.7105**	**.0132**	**.2900**	**<.0000**	**<.0000**	**.2348**	**.0014**
Stddev	.0019	.0005	.0053	.0003	.0025	.0016	.0031	.0035	.0005
%RSD	.8594	4.518	.7444	2.088	.8564	273.7	159.2	1.502	32.20
#1	.2196	.0099	.7049	.0131	.2876	-.0016	-.0029	.2369	.0016
#2	.2211	.0104	.7112	.0131	.2899	.0013	-.0044	.2367	.0009
#3	.2234	.0109	.7154	.0135	.2926	-.0014	.0015	.2307	.0017
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9129-E-3-E Acquired: 11/26/2014 8:42:44 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0542	.0086	.4372	<.0000	.0330	.0300	.0569
Stddev	.0002	.0033	.0007	.0012	.0115	.0003	.0007
%RSD	.4070	38.39	.1591	483.2	34.95	.8387	1.316
#1	.0542	.0063	.4369	.0007	.0392	.0302	.0561
#2	.0539	.0071	.4368	.0002	.0197	.0297	.0570
#3	.0543	.0125	.4380	-.0016	.0401	.0302	.0576
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	5163.6
Stddev	33.2
%RSD	.64290
#1	5200.3
#2	5135.8
#3	5154.7

Sample Name: 160-9129-E-4-F Acquired: 11/26/2014 8:46:36 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	13.77	.0033	.0117	.2467	.0007	<.0000	24.20	.0002
Stddev	.0000	.04	.0006	.0026	.0009	.0000	.0006	.67	.0001
%RSD	44.00	.3068	19.15	22.37	.3596	3.343	23.34	2.755	81.25
#1	.0002	13.81	.0026	.0089	.2471	.0007	-.0028	23.84	.0003
#2	.0001	13.73	.0036	.0141	.2457	.0007	-.0033	23.80	.0000
#3	.0001	13.76	.0037	.0122	.2473	.0007	-.0021	24.97	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0067	.0085	.0097	13.44	4.687	.0235	6.180	.4603	.0001
Stddev	.0003	.0007	.0008	.03	.041	.0013	.049	.0012	.0001
%RSD	3.932	8.218	8.404	.2184	.8712	5.357	.7982	.2529	115.8
#1	.0068	.0086	.0106	13.42	4.641	.0243	6.228	.4614	.0000
#2	.0069	.0091	.0094	13.43	4.718	.0220	6.182	.4591	.0002
#3	.0064	.0077	.0090	13.48	4.703	.0242	6.129	.4604	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1903	.0087	.6485	.0144	.2151	.0004	<.0000	.2357	.0009
Stddev	.0132	.0004	.0263	.0022	.0092	.0037	.0025	.0044	.0001
%RSD	6.954	4.738	4.058	15.00	4.261	892.2	86.18	1.868	9.116
#1	.1763	.0091	.6371	.0133	.2125	-.0018	-.0001	.2407	.0010
#2	.2027	.0082	.6298	.0130	.2076	-.0017	-.0048	.2328	.0008
#3	.1920	.0088	.6786	.0169	.2253	.0047	-.0040	.2335	.0009
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9129-E-4-F Acquired: 11/26/2014 8:46:36 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0592	.0099	.3739	<.0000	.0863	.0263	.0494
Stddev	.0001	.0024	.0008	.0015	.0269	.0013	.0020
%RSD	.1194	24.56	.2117	179.6	31.12	5.003	4.138
#1	.0592	.0084	.3731	.0009	.1059	.0249	.0484
#2	.0591	.0086	.3738	-.0020	.0557	.0267	.0480
#3	.0592	.0127	.3747	-.0014	.0974	.0274	.0517
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4881.3
Stddev	38.8
%RSD	.79580
#1	4836.5
#2	4905.8
#3	4901.6

Sample Name: 160-9129-E-5-E Acquired: 11/26/2014 8:50:28 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0002**	**16.78**	**.0036**	**.0179**	**.2649**	**.0008**	**<.0000**	**27.01**	**.0003**
Stddev	.0005	.07	.0020	.0017	.0008	.0000	.0021	.28	.0001
%RSD	328.2	.4358	56.72	9.476	.2896	5.592	35.82	1.045	55.07
#1	.0006	16.83	.0013	.0182	.2652	.0009	-.0050	26.75	.0002
#2	-.0004	16.81	.0045	.0160	.2655	.0008	-.0083	26.96	.0001
#3	.0003	16.69	.0050	.0194	.2640	.0008	-.0043	27.31	.0004
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0078**	**.0112**	**.0125**	**15.96**	**5.788**	**.0350**	**7.842**	**.5549**	**.0002**
Stddev	.0002	.0009	.0022	.04	.003	.0005	.005	.0015	.0002
%RSD	2.102	7.940	17.48	.2529	.0432	1.560	.0630	.2756	99.78
#1	.0077	.0121	.0128	15.93	5.785	.0354	7.846	.5555	.0003
#2	.0080	.0103	.0102	16.01	5.790	.0352	7.844	.5561	.0000
#3	.0077	.0113	.0145	15.94	5.789	.0344	7.837	.5532	.0004
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2034**	**.0105**	**.6779**	**.0161**	**.2031**	**.0017**	**<.0000**	**.7135**	**.0011**
Stddev	.0032	.0001	.0074	.0005	.0020	.0029	.0042	.0083	.0002
%RSD	1.567	1.084	1.098	3.317	.9626	166.6	1158.	1.158	16.25
#1	.2022	.0104	.6729	.0167	.2009	.0048	-.0051	.7101	.0013
#2	.2011	.0106	.6744	.0157	.2046	.0014	.0012	.7076	.0010
#3	.2071	.0106	.6865	.0158	.2038	-.0010	.0028	.7230	.0009
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9129-E-5-E Acquired: 11/26/2014 8:50:28 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0648	.0076	.4037	.0016	.0650	.0313	.0560
Stddev	.0002	.0005	.0014	.0015	.0072	.0021	.0004
%RSD	.3606	6.695	.3377	93.45	11.02	6.839	.7285
#1	.0649	.0078	.4027	.0013	.0568	.0308	.0556
#2	.0651	.0071	.4053	.0032	.0697	.0337	.0558
#3	.0646	.0080	.4033	.0003	.0686	.0295	.0564
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	5155.2
Stddev	5.4
%RSD	.10449
#1	5149.3
#2	5156.2
#3	5159.9

Sample Name: 160-9129-E-6-E Acquired: 11/26/2014 8:54:20 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	14.40	.0022	.0112	.1901	.0008	<.0000	23.15	.0003
Stddev	.0007	.04	.0015	.0043	.0004	.0000	.0003	.14	.0002
%RSD	161.4	.2567	69.12	38.39	.2324	3.664	28.03	.6169	73.35
#1	.0000	14.36	.0035	.0123	.1896	.0008	-.0009	23.26	.0004
#2	.0000	14.42	.0026	.0065	.1902	.0008	-.0012	22.99	.0001
#3	-.0012	14.42	.0005	.0148	.1905	.0008	-.0007	23.21	.0005
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0052	.0083	.0095	13.54	5.210	.0346	7.304	.3402	.0003
Stddev	.0004	.0012	.0020	.02	.019	.0009	.020	.0009	.0002
%RSD	6.907	14.27	21.39	.1204	.3688	2.565	.2786	.2735	65.49
#1	.0056	.0076	.0103	13.56	5.189	.0354	7.280	.3393	.0001
#2	.0051	.0097	.0071	13.53	5.226	.0337	7.318	.3412	.0003
#3	.0049	.0077	.0109	13.54	5.215	.0346	7.313	.3401	.0005
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1522	.0090	.5556	.0136	.2417	.0001	<.0000	.2090	.0005
Stddev	.0018	.0001	.0054	.0016	.0044	.0001	.0028	.0030	.0004
%RSD	1.164	1.356	.9653	11.60	1.827	48.64	711.1	1.451	77.20
#1	.1525	.0089	.5614	.0152	.2453	.0001	-.0015	.2124	.0009
#2	.1538	.0091	.5509	.0138	.2368	.0000	.0028	.2065	.0005
#3	.1503	.0089	.5545	.0120	.2430	.0001	-.0025	.2080	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9129-E-6-E Acquired: 11/26/2014 8:54:20 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0561	.0089	.2631	.0029	.0557	.0258	.0457
Stddev	.0002	.0040	.0011	.0003	.0194	.0036	.0002
%RSD	.2947	44.82	.4195	10.82	34.90	13.79	.3881
#1	.0559	.0066	.2637	.0028	.0372	.0219	.0459
#2	.0562	.0066	.2618	.0033	.0539	.0290	.0456
#3	.0560	.0135	.2638	.0027	.0760	.0264	.0456
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	5059.9
Stddev	12.6
%RSD	.24820
#1	5053.2
#2	5074.4
#3	5052.1

Sample Name: 160-9129-E-7-E Acquired: 11/26/2014 8:58:12 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**13.34**	**.0026**	**.0092**	**.2008**	**.0006**	**<.0000**	**21.08**	**.0002**
Stddev	.0009	.07	.0019	.0015	.0009	.0000	.0043	.51	.0002
%RSD	1090.	.5142	71.81	15.81	.4527	2.328	118.1	2.442	85.38
#1	.0006	13.26	.0008	.0077	.1997	.0006	.0003	20.59	.0001
#2	.0006	13.39	.0046	.0091	.2015	.0007	-.0030	21.04	.0003
#3	-.0009	13.37	.0025	.0106	.2011	.0006	-.0082	21.62	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0062**	**.0072**	**.0115**	**12.26**	**4.791**	**.0231**	**6.132**	**.3740**	**.0002**
Stddev	.0003	.0005	.0014	.02	.018	.0010	.045	.0011	.0001
%RSD	5.429	7.528	12.27	.1977	.3646	4.133	.7383	.3058	65.76
#1	.0059	.0067	.0129	12.23	4.800	.0224	6.086	.3730	.0003
#2	.0062	.0078	.0114	12.26	4.803	.0242	6.135	.3752	.0001
#3	.0065	.0073	.0101	12.28	4.771	.0227	6.177	.3738	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1584**	**.0081**	**.5449**	**.0100**	**.1458**	**<.0000**	**<.0000**	**.1704**	**.0000**
Stddev	.0159	.0004	.0121	.0009	.0041	.0006	.0031	.0043	.0008
%RSD	10.02	4.998	2.221	9.190	2.784	69.48	871.8	2.516	1705.
#1	.1402	.0080	.5346	.0090	.1420	-.0011	-.0002	.1661	.0007
#2	.1657	.0078	.5418	.0101	.1453	-.0002	.0026	.1703	-.0008
#3	.1693	.0086	.5582	.0109	.1500	-.0014	-.0035	.1747	.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9129-E-7-E Acquired: 11/26/2014 8:58:12 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0566	.0081	.2897	<.0000	.0598	.0232	.0432
Stddev	.0004	.0035	.0005	.0025	.0192	.0042	.0014
%RSD	.6304	42.87	.1872	655.9	32.03	17.97	3.280
#1	.0562	.0074	.2891	-.0019	.0532	.0184	.0417
#2	.0569	.0119	.2898	-.0018	.0448	.0256	.0432
#3	.0565	.0050	.2902	.0025	.0814	.0255	.0446
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	5056.0
Stddev	16.2
%RSD	.31981
#1	5073.9
#2	5051.8
#3	5042.3

Sample Name: 160-9129-E-8-E Acquired: 11/26/2014 9:02:04 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0004**	**14.10**	**.0028**	**.0135**	**.2815**	**.0007**	**<.0000**	**36.88**	**.0002**
Stddev	.0009	.04	.0023	.0018	.0001	.0001	.0013	.58	.0001
%RSD	228.5	.2649	81.98	13.34	.0487	7.027	105.5	1.575	31.54
#1	.0008	14.10	.0027	.0144	.2816	.0008	.0002	36.87	.0002
#2	.0011	14.07	.0006	.0114	.2813	.0007	-.0022	36.30	.0003
#3	-.0007	14.14	.0052	.0146	.2815	.0007	-.0017	37.46	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0045**	**.0071**	**.0097**	**13.45**	**4.722**	**.0342**	**7.360**	**.2705**	**.0002**
Stddev	.0001	.0006	.0006	.04	.023	.0009	.097	.0013	.0002
%RSD	2.806	8.467	6.095	.2773	.4861	2.759	1.323	.4881	70.49
#1	.0044	.0078	.0102	13.43	4.736	.0338	7.326	.2712	.0003
#2	.0045	.0067	.0100	13.44	4.696	.0335	7.284	.2690	.0000
#3	.0046	.0069	.0091	13.50	4.734	.0353	7.470	.2714	.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.6560**	**.0079**	**.5804**	**.0068**	**.1158**	**<.0000**	**<.0000**	**.2452**	**<.0000**
Stddev	.0106	.0004	.0127	.0016	.0036	.0009	.0023	.0018	.0003
%RSD	1.609	5.016	2.186	23.25	3.082	200.8	135.2	.7470	763.3
#1	.6503	.0078	.5774	.0050	.1187	-.0013	-.0043	.2443	.0003
#2	.6682	.0075	.5695	.0080	.1118	-.0005	-.0004	.2473	-.0002
#3	.6496	.0083	.5943	.0074	.1169	.0005	-.0003	.2439	-.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9129-E-8-E Acquired: 11/26/2014 9:02:04 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1038	.0059	.3663	<.0000	.0255	.0304	.0433
Stddev	.0002	.0040	.0011	.0009	.0150	.0014	.0007
%RSD	.1943	68.41	.3054	83.19	58.91	4.544	1.725
#1	.1039	.0050	.3650	-.0004	.0108	.0311	.0434
#2	.1035	.0023	.3665	-.0021	.0249	.0313	.0426
#3	.1038	.0103	.3672	-.0008	.0408	.0288	.0441
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	5009.2
Stddev	51.6
%RSD	1.0299
#1	4999.1
#2	5065.0
#3	4963.4

Sample Name: CCV Acquired: 11/26/2014 9:05:56 Type: QC
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.9440**	**48.28**	**4.843**	**5.079**	**4.932**	**4.905**	**4.929**	**50.16**	**4.869**
Stddev	.0042	.32	.045	.026	.022	.040	.046	.35	.037
%RSD	.4435	.6536	.9273	.5069	.4543	.8217	.9284	.6959	.7693
#1	.9465	47.92	4.791	5.053	4.906	4.903	4.876	49.75	4.826
#2	.9463	48.51	4.867	5.080	4.945	4.947	4.951	50.35	4.893
#3	.9391	48.41	4.871	5.105	4.945	4.866	4.959	50.37	4.888
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.866**	**4.959**	**4.891**	**50.07**	**49.09**	**4.933**	**47.66**	**4.906**	**.9894**
Stddev	.041	.008	.048	.07	.21	.007	.35	.036	.0081
%RSD	.8361	.1698	.9816	.1444	.4306	.1511	.7422	.7355	.8177
#1	4.819	4.959	4.836	50.00	48.86	4.925	47.27	4.865	.9801
#2	4.892	4.967	4.915	50.15	49.15	4.932	47.94	4.931	.9941
#3	4.886	4.950	4.923	50.07	49.27	4.940	47.79	4.922	.9940
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**50.03**	**4.899**	**48.84**	**4.922**	**48.67**	**.9705**	**.9811**	**4.909**	**4.882**
Stddev	.34	.035	.36	.035	.50	.0128	.0102	.014	.037
%RSD	.6727	.7046	.7352	.7142	1.036	1.320	1.040	.2837	.7519
#1	49.67	4.859	48.42	4.881	48.09	.9559	.9695	4.907	4.840
#2	50.10	4.920	49.01	4.942	48.96	.9797	.9847	4.924	4.901
#3	50.33	4.918	49.07	4.943	48.96	.9759	.9890	4.896	4.906
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: CCV Acquired: 11/26/2014 9:05:56 Type: QC
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.938**	**4.716**	**4.905**	**.9780**	**4.991**	**4.831**	**4.936**
Stddev	.054	.020	.003	.0076	.030	.035	.035
%RSD	1.103	.4328	.0605	.7794	.5938	.7320	.7005
#1	4.943	4.737	4.902	.9692	4.959	4.792	4.896
#2	4.989	4.696	4.905	.9826	5.017	4.860	4.955
#3	4.881	4.717	4.908	.9823	4.997	4.842	4.956
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**4702.4**
Stddev	2.8
%RSD	.05887
#1	4699.4
#2	4703.1
#3	4704.8

Sample Name: CCB Acquired: 11/26/2014 9:09:40 Type: QC
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0004**	**<.0000**	**<.0000**	**.0091**	**.0001**	**.0004**	**<.0000**	**.0033**
Stddev	.0007	.0095	.0011	.0011	.0001	.0001	.0025	.0009
%RSD	145.1	215.8	57.52	12.11	59.35	25.45	392.9	25.84
#1	.0010	.0031	-.0012	.0092	.0001	.0005	.0015	.0037
#2	.0007	-.0013	-.0015	.0079	.0000	.0004	.0001	.0040
#3	-.0003	-.0151	-.0033	.0101	.0002	.0003	-.0035	.0024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Cd2288	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0003**	**<.0000**	**<.0000**	**.0002**	**.0034**	**.0116**	**.0007**	**<.0000**
Stddev	.0000	.0002	.0001	.0018	.0011	.0139	.0006	.0012
%RSD	9.751	361.2	18.70	1185.	31.31	119.5	84.53	35.50
#1	.0003	-.0003	-.0003	.0021	.0046	-.0002	.0012	-.0049
#2	.0003	.0001	-.0004	-.0001	.0031	.0269	.0000	-.0027
#3	.0003	.0000	-.0005	-.0015	.0025	.0081	.0010	-.0029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mn2576	Mo2020	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0002**	**.0000**	**.0219**	**<.0000**	**.0041**	**<.0000**	**.0028**	**<.0000**
Stddev	.0002	.0005	.0050	.0002	.0027	.0013	.0041	.0040
%RSD	99.56	1781.	22.63	58.88	65.18	91.10	149.8	781.5
#1	.0005	.0000	.0171	-.0003	.0044	-.0028	.0057	.0021
#2	.0001	.0005	.0217	-.0001	.0066	-.0009	-.0020	.0015
#3	.0001	-.0004	.0270	-.0004	.0013	-.0004	.0045	-.0051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB Acquired: 11/26/2014 9:09:40 Type: QC
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2516	Sn1899	Sr4077	Th2832	Ti3349	Tl1908	U_3670
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0034**	**<.0000**	**.0005**	**.0004**	**.0013**	**.0016**	**.0035**	**W .1078**
Stddev	.0032	.0069	.0011	.0001	.0034	.0004	.0008	.0268
%RSD	94.11	86.06	231.7	23.26	255.0	25.57	23.62	24.82
#1	.0016	-.0058	.0013	.0005	.0007	.0012	.0039	.1280
#2	.0071	-.0025	.0009	.0004	-.0017	.0020	.0039	.1180
#3	.0015	-.0158	-.0008	.0003	.0050	.0016	.0025	.0775
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn
High Limit								.0480
Low Limit								-.0470

Elem	V_2908	Zn2138
Units	ppm	ppm
Avg	**.0004**	**.0001**
Stddev	.0020	.0003
%RSD	492.2	223.4
#1	-.0019	.0003
#2	.0019	.0002
#3	.0012	-.0002
Check ?	Chk Pass	Chk Pass
High Limit		
Low Limit		

Int. Std.	Y_3710
Units	Cts/S
Avg	**4880.3**
Stddev	48.5
%RSD	.99377
#1	4842.5
#2	4863.4
#3	4935.0

Sample Name: 160-9129-E-9-E Acquired: 11/26/2014 9:13:38 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	17.01	.0025	.0197	.2493	.0009	<.0000	40.04	.0001
Stddev	.0002	.09	.0006	.0031	.0009	.0000	.0014	.39	.0001
%RSD	755.4	.5033	22.60	15.87	.3604	4.213	541.8	.9639	132.2
#1	.0002	17.00	.0018	.0182	.2492	.0009	.0013	40.45	.0002
#2	.0000	17.11	.0028	.0175	.2503	.0009	-.0012	39.98	.0000
#3	-.0003	16.94	.0028	.0233	.2486	.0009	-.0009	39.69	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0048	.0102	.0119	16.40	5.678	.0375	8.812	.2986	.0000
Stddev	.0003	.0008	.0025	.07	.030	.0013	.036	.0022	.0002
%RSD	7.148	7.608	20.66	.4081	.5228	3.427	.4124	.7281	2811.
#1	.0052	.0093	.0147	16.40	5.683	.0361	8.828	.2995	-.0002
#2	.0045	.0108	.0103	16.47	5.704	.0386	8.838	.3002	.0001
#3	.0048	.0104	.0107	16.33	5.646	.0378	8.771	.2962	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5648	.0099	.6350	.0089	.0839	<.0000	<.0000	.3424	.0004
Stddev	.0089	.0002	.0046	.0014	.0023	.0013	.0020	.0053	.0007
%RSD	1.579	1.910	.7298	16.19	2.700	479.5	67.26	1.554	190.3
#1	.5666	.0101	.6387	.0102	.0855	-.0018	-.0052	.3384	-.0003
#2	.5727	.0097	.6364	.0092	.0813	.0006	-.0012	.3485	.0012
#3	.5551	.0098	.6298	.0074	.0850	.0004	-.0026	.3405	.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9129-E-9-E Acquired: 11/26/2014 9:13:38 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1055	.0087	.4612	<.0000	.0730	.0290	.0525
Stddev	.0006	.0005	.0011	.0017	.0094	.0005	.0008
%RSD	.5907	5.358	.2359	147.9	12.92	1.712	1.573
#1	.1050	.0091	.4619	.0003	.0817	.0289	.0534
#2	.1062	.0089	.4618	-.0007	.0743	.0295	.0518
#3	.1052	.0082	.4599	-.0030	.0630	.0286	.0521
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	5070.0
Stddev	54.8
%RSD	1.0809
#1	5018.8
#2	5063.3
#3	5127.8

Sample Name: TEST 1 Acquired: 11/26/2014 9:17:29 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=50

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0008**	**.1508**	**.0002**	**.0327**	**.0004**	**<.0000**	**.0023**	**1.230**	**.0907**
Stddev	.0006	.0096	.0011	.0040	.0002	.0001	.0021	.003	.0003
%RSD	71.45	6.357	434.9	12.14	53.07	153.0	90.41	.2764	.3821
#1	.0005	.1414	-.0010	.0369	.0003	.0000	.0030	1.233	.0911
#2	.0004	.1606	.0008	.0291	.0006	.0000	.0040	1.226	.0904
#3	.0014	.1504	.0009	.0320	.0003	-.0001	.0000	1.230	.0908
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0038**	**2.063**	**.0155**	**.6212**	**1.779**	**.0002**	**.1198**	**.0482**	**.0002**
Stddev	.0006	.014	.0021	.0021	.022	.0022	.0027	.0004	.0002
%RSD	16.09	.6531	13.22	.3410	1.250	939.7	2.252	.8761	89.88
#1	.0043	2.051	.0164	.6189	1.764	-.0012	.1172	.0485	.0003
#2	.0039	2.061	.0170	.6218	1.804	-.0009	.1226	.0477	.0000
#3	.0031	2.078	.0132	.6230	1.768	.0027	.1197	.0483	.0004
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.7860**	**.0046**	**10.27**	**.3658**	**.2690**	**.0065**	**<.0000**	**.2192**	**.0017**
Stddev	.0079	.0001	.06	.0033	.0012	.0028	.0029	.0043	.0009
%RSD	.9992	1.770	.5684	.9037	.4323	43.63	1608.	1.959	52.61
#1	.7896	.0046	10.33	.3694	.2684	.0094	.0001	.2145	.0028
#2	.7770	.0046	10.23	.3629	.2704	.0064	-.0032	.2229	.0010
#3	.7914	.0047	10.23	.3652	.2683	.0038	.0025	.2202	.0014
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: TEST 1 Acquired: 11/26/2014 9:17:29 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=50

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0010	.0093	.0057	.0008	.0805	.0048	1.097
Stddev	.0000	.0013	.0002	.0011	.0347	.0011	.004
%RSD	2.292	14.35	2.801	142.4	43.03	22.85	.3649
#1	.0010	.0109	.0059	.0020	.0740	.0035	1.101
#2	.0010	.0087	.0057	-.0002	.1180	.0054	1.096
#3	.0010	.0084	.0056	.0005	.0496	.0055	1.093
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4846.7
Stddev	8.2
%RSD	.17012
#1	4839.6
#2	4855.7
#3	4844.9

Sample Name: TEST 14 Acquired: 11/26/2014 9:21:17 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=50

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0003**	**<.0000**	**<.0000**	**.0057**	**.0001**	**<.0000**	**<.0000**	**.9921**	**.0007**
Stddev	.0010	.0127	.0012	.0012	.0001	.0000	.0008	.0057	.0002
%RSD	401.6	431.8	79.74	20.35	203.7	43.13	13.70	.5723	30.51
#1	-.0009	-.0169	-.0022	.0058	-.0001	.0000	-.0055	.9922	.0009
#2	.0012	.0078	-.0001	.0069	.0001	.0000	-.0065	.9864	.0006
#3	.0005	.0003	-.0021	.0045	.0001	.0000	-.0050	.9977	.0005
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**.0511**	**.0014**	**<.0000**	**.0893**	**.0010**	**.6398**	**.0020**	**.0004**
Stddev	.0003	.0006	.0025	.0015	.0175	.0007	.0154	.0001	.0001
%RSD	295.6	1.249	184.7	466.8	19.62	67.43	2.400	2.775	17.61
#1	.0003	.0514	.0001	-.0020	.0803	.0015	.6575	.0020	.0004
#2	-.0002	.0515	-.0002	.0009	.0781	.0002	.6316	.0019	.0004
#3	.0001	.0504	.0042	.0001	.1095	.0013	.6303	.0020	.0005
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.054**	**<.0000**	**.0356**	**<.0000**	**1.588**	**.0012**	**<.0000**	**.1945**	**.0006**
Stddev	.003	.0004	.0005	.0017	.022	.0006	.0014	.0042	.0012
%RSD	.1589	127.7	1.415	92.71	1.366	53.91	152.0	2.146	215.0
#1	2.052	-.0008	.0361	.0001	1.594	.0005	-.0013	.1990	-.0008
#2	2.057	.0000	.0353	-.0026	1.564	.0018	-.0021	.1935	.0015
#3	2.051	-.0002	.0352	-.0029	1.606	.0013	.0006	.1909	.0010
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: TEST 14 Acquired: 11/26/2014 9:21:17 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=50

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0045	<.0000	.0009	.0027	.0596	.0032	.0186
Stddev	.0001	.0017	.0007	.0009	.0106	.0010	.0002
%RSD	1.237	487.4	78.95	34.47	17.81	33.08	.9550
#1	.0046	.0015	.0004	.0022	.0688	.0042	.0185
#2	.0045	-.0009	.0005	.0038	.0620	.0021	.0185
#3	.0045	-.0016	.0017	.0021	.0480	.0033	.0188
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4755.5
Stddev	17.1
%RSD	.36062
#1	4748.1
#2	4775.1
#3	4743.3

Sample Name: TEST 21 Acquired: 11/26/2014 9:25:13 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=50

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0011**	**<.0000**	**.0008**	**.0278**	**<.0000**	**<.0000**	**<.0000**	**.1235**	**.0005**
Stddev	.0010	.0042	.0015	.0021	.0000	.0000	.0032	.0012	.0002
%RSD	96.79	190.3	193.3	7.594	114.7	78.13	130.3	.9498	41.19
#1	-.0001	-.0069	.0024	.0281	.0000	-.0001	.0011	.1228	.0005
#2	.0013	-.0006	.0002	.0256	.0000	.0000	-.0050	.1248	.0003
#3	.0019	.0010	-.0003	.0298	-.0001	.0000	-.0034	.1228	.0006
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0021**	**1.783**	**.0054**	**.0021**	**3.604**	**.0031**	**.0312**	**.0004**	**.0007**
Stddev	.0007	.010	.0040	.0008	.003	.0006	.0019	.0003	.0001
%RSD	30.99	.5527	74.03	36.49	.0797	19.43	6.096	74.77	15.75
#1	.0014	1.782	.0066	.0031	3.602	.0024	.0300	.0001	.0006
#2	.0027	1.793	.0009	.0018	3.607	.0033	.0302	.0008	.0006
#3	.0024	1.774	.0086	.0016	3.605	.0035	.0334	.0004	.0008
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**16.33**	**.0001**	**7.047**	**<.0000**	**2.004**	**.0008**	**<.0000**	**.0718**	**.0004**
Stddev	.06	.0003	.065	.0010	.024	.0005	.0014	.0009	.0005
%RSD	.3540	218.7	.9279	56.69	1.202	67.92	255.7	1.244	111.1
#1	16.37	.0005	6.982	-.0007	1.983	.0003	-.0017	.0714	.0003
#2	16.35	-.0002	7.113	-.0028	2.030	.0013	.0010	.0728	.0000
#3	16.26	.0001	7.046	-.0020	1.999	.0007	-.0010	.0712	.0010
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: TEST 21 Acquired: 11/26/2014 9:25:13 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=50

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0054	.0008	.0019	.0955	.0027	.0086
Stddev	.0001	.0021	.0005	.0019	.0160	.0013	.0001
%RSD	407.3	39.08	57.78	104.8	16.74	46.63	.6296
#1	.0000	.0078	.0013	.0041	.0877	.0025	.0086
#2	.0001	.0039	.0005	.0007	.1139	.0040	.0087
#3	.0000	.0045	.0006	.0007	.0850	.0015	.0086
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4761.3
Stddev	12.3
%RSD	.25835
#1	4762.4
#2	4748.6
#3	4773.1

Sample Name: TEST 4 Acquired: 11/26/2014 9:29:04 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0003**	**<.0000**	**<.0000**	**.0033**	**<.0000**	**<.0000**	**<.0000**	**.0000**	**.0000**
Stddev	.0006	.0094	.0022	.0010	.0001	.0000	.0027	.0009	.0001
%RSD	213.2	296.4	256.0	29.50	58.16	60.08	359.7	4573.	437.4
#1	.0010	-.0125	-.0034	.0044	-.0001	-.0001	.0015	.0009	.0002
#2	-.0002	.0063	.0003	.0028	-.0002	.0000	-.0038	.0000	-.0001
#3	.0001	-.0034	.0006	.0027	-.0001	.0000	.0000	-.0009	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**<.0000**	**<.0000**	**.0024**	**<.0000**	**.0095**	**.0009**	**<.0000**	**<.0000**	**<.0000**
Stddev	.0003	.0003	.0024	.0026	.0124	.0011	.0064	.0001	.0001
%RSD	329.5	43.84	100.8	135.7	130.2	130.8	101.1	55.89	22.62
#1	-.0001	-.0006	.0051	.0005	.0105	.0013	-.0132	.0000	-.0003
#2	.0002	-.0011	.0017	-.0046	-.0033	.0018	-.0051	-.0001	-.0003
#3	-.0004	-.0005	.0004	-.0015	.0214	-.0004	-.0006	-.0002	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0072**	**<.0000**	**<.0000**	**<.0000**	**<.0000**	**<.0000**	**<.0000**	**<.0000**	**.0003**
Stddev	.0059	.0002	.0017	.0005	.0033	.0009	.0019	.0041	.0003
%RSD	81.27	46.10	482.8	17.06	108.7	59.04	888.0	67.65	88.17
#1	.0033	-.0006	-.0017	-.0026	.0002	-.0005	.0013	-.0062	.0006
#2	.0044	-.0002	.0016	-.0033	-.0064	-.0021	.0005	-.0019	.0005
#3	.0139	-.0005	-.0009	-.0023	-.0029	-.0018	-.0024	-.0100	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: TEST 4 Acquired: 11/26/2014 9:29:04 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0047	.0011	<.0000	.0944	.0022	.0023
Stddev	.0000	.0020	.0007	.0012	.0217	.0005	.0001
%RSD	76.12	42.82	57.06	80.95	23.00	22.89	4.964
#1	-.0001	.0024	.0004	-.0017	.0962	.0016	.0022
#2	.0000	.0060	.0013	-.0024	.0719	.0026	.0022
#3	.0000	.0057	.0017	-.0001	.1152	.0025	.0024
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4778.6
Stddev	3.3
%RSD	.06923
#1	4782.3
#2	4775.9
#3	4777.6

Sample Name: TEST 5 Acquired: 11/26/2014 9:32:59 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0005**	**<.0000**	**<.0000**	**.0016**	**<.0000**	**<.0000**	**<.0000**	**<.0000**	**.0001**
Stddev	.0007	.0038	.0012	.0026	.0002	.0000	.0019	.0006	.0001
%RSD	129.9	1004.	353.2	164.4	226.5	63.72	51.38	45.60	101.8
#1	.0005	-.0010	-.0008	-.0014	.0000	.0000	-.0022	-.0008	.0002
#2	-.0002	-.0038	-.0012	.0036	-.0003	.0000	-.0059	-.0012	.0002
#3	.0011	.0037	.0010	.0026	.0001	-.0001	-.0032	-.0019	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0002**	**<.0000**	**.0013**	**<.0000**	**<.0000**	**.0002**	**<.0000**	**<.0000**	**.0002**
Stddev	.0008	.0014	.0017	.0013	.0262	.0012	.0088	.0001	.0001
%RSD	416.5	53.49	132.4	68.56	1074.	521.1	155.8	66.60	61.39
#1	.0007	-.0042	.0031	-.0007	-.0050	.0015	.0044	-.0002	.0002
#2	.0006	-.0019	.0009	-.0018	-.0273	-.0002	-.0121	-.0001	.0004
#3	-.0007	-.0017	-.0002	-.0033	.0250	-.0006	-.0092	.0000	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0037**	**<.0000**	**.0009**	**<.0000**	**<.0000**	**<.0000**	**<.0000**	**<.0000**	**.0004**
Stddev	.0067	.0005	.0016	.0012	.0034	.0009	.0013	.0056	.0004
%RSD	181.0	142.6	171.5	55.33	175.1	81.90	113.4	67.01	87.42
#1	.0001	.0001	.0017	-.0017	-.0022	-.0012	.0004	-.0074	.0005
#2	-.0005	-.0009	.0020	-.0013	-.0051	-.0018	-.0018	-.0033	.0008
#3	.0113	-.0003	-.0009	-.0035	.0016	-.0001	-.0019	-.0145	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: TEST 5 Acquired: 11/26/2014 9:32:59 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0036	.0009	.0038	.1397	.0020	.0024
Stddev	.0000	.0015	.0010	.0012	.0208	.0032	.0001
%RSD	13340.	41.68	109.0	31.86	14.87	162.5	4.571
#1	.0000	.0054	.0004	.0050	.1417	.0055	.0025
#2	.0000	.0029	.0021	.0026	.1594	.0010	.0024
#3	.0000	.0026	.0003	.0036	.1180	-.0006	.0023
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4772.1
Stddev	36.5
%RSD	.76410
#1	4733.3
#2	4777.3
#3	4805.6

Sample Name: CCV Acquired: 11/26/2014 9:36:56 Type: QC
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.9283**	**48.59**	**4.823**	**5.128**	**4.963**	**4.922**	**4.875**	**49.52**	**4.809**
Stddev	.0070	.18	.019	.028	.015	.086	.014	.13	.023
%RSD	.7494	.3610	.3887	.5515	.2911	1.758	.2814	.2648	.4695
#1	.9347	48.40	4.807	5.106	4.958	4.847	4.875	49.47	4.794
#2	.9209	48.74	4.820	5.160	4.980	4.903	4.861	49.42	4.798
#3	.9292	48.63	4.844	5.118	4.952	5.017	4.888	49.67	4.835
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.820**	**4.926**	**4.821**	**50.49**	**49.48**	**4.978**	**47.98**	**4.940**	**.9763**
Stddev	.012	.028	.024	.10	.15	.026	.28	.020	.0038
%RSD	.2491	.5610	.4886	.2069	.3032	.5286	.5869	.3939	.3853
#1	4.812	4.944	4.807	50.41	49.40	4.975	47.68	4.918	.9733
#2	4.815	4.894	4.808	50.61	49.65	5.006	48.01	4.950	.9751
#3	4.834	4.939	4.848	50.44	49.38	4.953	48.24	4.953	.9805
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**50.36**	**4.856**	**48.76**	**4.875**	**48.64**	**.9659**	**.9700**	**4.938**	**4.851**
Stddev	.17	.016	.17	.017	.19	.0042	.0026	.015	.011
%RSD	.3433	.3316	.3461	.3501	.3963	.4379	.2648	.2961	.2357
#1	50.31	4.846	48.62	4.870	48.51	.9644	.9703	4.944	4.844
#2	50.56	4.847	48.71	4.861	48.55	.9627	.9673	4.949	4.845
#3	50.23	4.874	48.95	4.894	48.87	.9707	.9724	4.922	4.864
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: CCV Acquired: 11/26/2014 9:36:56 Type: QC
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.029**	**4.681**	**4.940**	**.9677**	**4.916**	**4.858**	**4.882**
Stddev	.051	.039	.014	.0054	.021	.019	.015
%RSD	1.014	.8390	.2768	.5584	.4273	.3985	.3033
#1	5.022	4.702	4.934	.9641	4.912	4.836	4.870
#2	5.083	4.635	4.956	.9651	4.897	4.873	4.877
#3	4.982	4.705	4.931	.9739	4.938	4.864	4.899
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**4862.0**
Stddev	19.4
%RSD	.39849
#1	4849.1
#2	4884.3
#3	4852.7

Sample Name: CCB Acquired: 11/26/2014 9:40:40 Type: QC
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0007**	**.0089**	**<.0000**	**.0069**	**.0004**	**.0004**	**<.0000**	**.0025**
Stddev	.0010	.0049	.0014	.0034	.0002	.0001	.0014	.0002
%RSD	141.3	55.07	2012.	49.23	42.50	17.59	270.7	6.542
#1	.0015	.0040	-.0002	.0070	.0006	.0005	-.0014	.0023
#2	-.0004	.0089	-.0014	.0102	.0004	.0003	.0011	.0027
#3	.0009	.0139	.0014	.0035	.0003	.0005	-.0011	.0024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Cd2288	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0003**	**<.0000**	**.0004**	**.0025**	**.0037**	**.0097**	**.0007**	**.0010**
Stddev	.0002	.0001	.0006	.0015	.0005	.0283	.0002	.0090
%RSD	76.50	235.1	146.9	61.84	13.53	290.6	30.78	867.7
#1	.0005	.0000	.0006	.0042	.0035	.0289	.0009	-.0085
#2	.0003	-.0002	.0008	.0020	.0033	.0231	.0005	.0094
#3	.0000	.0001	-.0003	.0013	.0043	-.0228	.0009	.0022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mn2576	Mo2020	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0003**	**<.0000**	**.0105**	**<.0000**	**.0026**	**<.0000**	**.0021**	**<.0000**
Stddev	.0001	.0000	.0055	.0001	.0009	.0009	.0012	.0019
%RSD	33.42	90.07	52.18	17.76	35.47	57.29	57.02	234.2
#1	.0003	-.0001	.0069	-.0004	.0026	-.0006	.0019	-.0005
#2	.0002	.0000	.0168	-.0003	.0036	-.0019	.0011	-.0028
#3	.0004	.0000	.0078	-.0003	.0017	-.0024	.0034	.0009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB Acquired: 11/26/2014 9:40:40 Type: QC
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2516	Sn1899	Sr4077	Th2832	Ti3349	Tl1908	U_3670
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	.0007	.0005	<.0000	.0005	.0008	W .0646
Stddev	.0015	.0067	.0001	.0001	.0050	.0003	.0019	.0307
%RSD	202.4	66.65	18.10	17.27	2957.	62.25	229.2	47.57
#1	.0009	-.0083	.0007	.0004	-.0017	.0005	.0027	.0970
#2	-.0012	-.0173	.0006	.0004	-.0042	.0002	-.0010	.0611
#3	-.0020	-.0044	.0009	.0006	.0054	.0008	.0007	.0358
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn
High Limit								.0480
Low Limit								-.0470

Elem	V_2908	Zn2138
Units	ppm	ppm
Avg	.0026	.0005
Stddev	.0029	.0001
%RSD	109.9	26.66
#1	.0033	.0006
#2	-.0006	.0004
#3	.0051	.0004
Check ?	Chk Pass	Chk Pass
High Limit		
Low Limit		

Int. Std.	Y_3710
Units	Cts/S
Avg	4764.4
Stddev	43.1
%RSD	.90445
#1	4732.5
#2	4747.2
#3	4813.4

Sample Name: MB 160-159156/1-A Acquired: 11/26/2014 10:50:17 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0007	.0046	<.0000	.0012	<.0000	<.0000	<.0000	.0347	<.0000
Stddev	.0006	.0062	.0011	.0025	.0001	.0000	.0033	.0006	.0000
%RSD	84.04	134.7	215.0	199.6	97.39	41.93	228.8	1.834	161.7
#1	.0002	.0002	-.0015	.0036	-.0001	.0000	.0023	.0346	.0000
#2	.0013	.0019	.0007	-.0014	.0000	.0000	-.0032	.0354	-.0001
#3	.0005	.0117	-.0007	.0015	-.0003	.0000	-.0034	.0341	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	.0003	.0005	.0005	<.0000	<.0000	<.0000	.0001
Stddev	.0002	.0010	.0027	.0003	.0169	.0011	.0088	.0002	.0002
%RSD	172.1	246.6	788.0	61.80	3248.	195.0	487.5	134.5	232.8
#1	.0000	-.0009	.0034	.0007	-.0176	-.0010	-.0027	-.0002	.0001
#2	.0000	-.0011	-.0008	.0007	.0159	-.0013	.0075	.0001	.0003
#3	-.0004	.0008	-.0016	.0001	.0032	.0007	-.0102	-.0003	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0081	<.0000	<.0000	<.0000	.0130	.0018	.0005	<.0000	.0006
Stddev	.0073	.0003	.0003	.0019	.0056	.0020	.0020	.0044	.0004
%RSD	90.57	114.7	52.88	212.5	42.91	110.6	390.6	287.8	72.13
#1	.0015	-.0005	-.0002	.0005	.0073	.0029	-.0013	-.0043	.0006
#2	.0159	-.0003	-.0008	-.0031	.0132	-.0005	.0026	.0036	.0001
#3	.0067	.0001	-.0005	-.0001	.0185	.0032	.0002	-.0039	.0009
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: MB 160-159156/1-A Acquired: 11/26/2014 10:50:17 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	<.0000	.0005	.0025	.0673	.0006	.0101
Stddev	.0000	.0014	.0005	.0006	.0282	.0012	.0002
%RSD	243.3	109.6	98.20	23.80	41.86	219.6	1.925
#1	.0000	-.0007	.0009	.0031	.0356	.0019	.0099
#2	.0000	-.0003	.0004	.0023	.0893	.0004	.0103
#3	.0001	-.0030	.0000	.0020	.0770	-.0006	.0101
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4910.3
Stddev	47.1
%RSD	.96011
#1	4959.5
#2	4906.0
#3	4865.5

Sample Name: LCS 160-159156/2-A Acquired: 11/26/2014 10:54:11 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1977**	**9.573**	**.9763**	**1.994**	**.9920**	**.9944**	**.9974**	**10.73**	**.9900**
Stddev	.0038	.014	.0115	.011	.0018	.0029	.0115	.11	.0132
%RSD	1.904	.1418	1.176	.5374	.1851	.2930	1.153	1.017	1.336
#1	.1936	9.559	.9635	1.984	.9926	.9930	.9863	10.61	.9759
#2	.2010	9.587	.9856	1.993	.9934	.9977	1.009	10.83	1.002
#3	.1985	9.573	.9799	2.005	.9899	.9925	.9968	10.75	.9920
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.061**	**1.020**	**1.016**	**10.19**	**9.586**	**1.002**	**9.451**	**.9986**	**.5078**
Stddev	.015	.008	.014	.05	.028	.003	.050	.0033	.0073
%RSD	1.418	.8096	1.355	.4524	.2953	.3441	.5270	.3317	1.431
#1	1.045	1.013	1.001	10.16	9.569	1.006	9.395	.9974	.5001
#2	1.075	1.029	1.028	10.25	9.618	.9999	9.488	1.002	.5146
#3	1.062	1.019	1.020	10.17	9.570	1.001	9.471	.9960	.5086
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.785**	**1.040**	**1.036**	**1.029**	**9.745**	**.5004**	**.4961**	**5.023**	**1.019**
Stddev	.023	.012	.014	.013	.153	.0078	.0060	.022	.015
%RSD	.2328	1.166	1.390	1.273	1.574	1.561	1.208	.4480	1.445
#1	9.763	1.027	1.021	1.015	9.585	.4938	.4892	4.998	1.004
#2	9.808	1.051	1.050	1.041	9.891	.5090	.4999	5.040	1.033
#3	9.784	1.041	1.038	1.031	9.759	.4984	.4992	5.031	1.019
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LCS 160-159156/2-A Acquired: 11/26/2014 10:54:11 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.018	.9984	.9947	.2115	1.085	.9801	1.031
Stddev	.001	.0219	.0023	.0027	.008	.0007	.013
%RSD	.1249	2.198	.2274	1.280	.7270	.0728	1.236
#1	1.018	.9782	.9933	.2096	1.081	.9793	1.018
#2	1.019	1.022	.9973	.2146	1.094	.9805	1.044
#3	1.016	.9954	.9935	.2102	1.079	.9805	1.032
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4739.3
Stddev	42.3
%RSD	.89213
#1	4779.9
#2	4695.5
#3	4742.4

Sample Name: 160-9451-C-1-A Acquired: 11/26/2014 10:57:45 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0005**	**.3740**	**.0009**	**.0061**	**.0635**	**.0001**	**<.0000**	**6.356**	**.0001**
Stddev	.0005	.0122	.0007	.0018	.0001	.0000	.0016	.091	.0001
%RSD	109.6	3.259	86.06	29.24	.1612	32.38	30.90	1.430	54.73
#1	.0009	.3718	.0002	.0043	.0634	.0002	-.0046	6.254	.0000
#2	.0007	.3631	.0007	.0078	.0636	.0001	-.0069	6.383	.0001
#3	-.0001	.3871	.0017	.0060	.0635	.0001	-.0039	6.430	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0009**	**<.0000**	**.0025**	**.5070**	**.3967**	**.0022**	**.8756**	**.0583**	**<.0000**
Stddev	.0003	.0011	.0018	.0050	.0222	.0016	.0038	.0002	.0004
%RSD	34.15	97.95	74.76	.9848	5.605	72.82	.4359	.4285	935.4
#1	.0011	-.0019	.0028	.5095	.3918	.0040	.8770	.0586	.0001
#2	.0010	-.0015	.0005	.5012	.4210	.0012	.8785	.0581	-.0004
#3	.0005	.0001	.0041	.5102	.3774	.0014	.8713	.0583	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.212**	**.0014**	**.0211**	**.0015**	**.4075**	**<.0000**	**<.0000**	**2.651**	**.0003**
Stddev	.008	.0004	.0010	.0012	.0051	.0032	.0010	.004	.0009
%RSD	.3462	27.41	4.865	79.06	1.251	202.4	83.15	.1392	318.0
#1	2.215	.0012	.0222	.0003	.4039	.0005	-.0021	2.648	.0010
#2	2.218	.0012	.0201	.0028	.4053	-.0053	-.0002	2.655	.0006
#3	2.204	.0019	.0210	.0015	.4133	.0001	-.0011	2.650	-.0007
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9451-C-1-A Acquired: 11/26/2014 10:57:45 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0438	.0015	.0008	.0027	.0502	.0041	.0094
Stddev	.0001	.0061	.0005	.0012	.0241	.0043	.0003
%RSD	.2663	414.0	58.47	45.38	48.08	104.1	3.725
#1	.0438	.0081	.0014	.0040	.0242	.0075	.0098
#2	.0439	-.0038	.0006	.0016	.0718	.0055	.0093
#3	.0437	.0002	.0005	.0026	.0545	-.0007	.0091
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4915.9
Stddev	16.7
%RSD	.34063
#1	4904.7
#2	4907.9
#3	4935.2

Sample Name: 160-9451-C-1-A SD Acquired: 11/26/2014 11:01:38 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=50

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0764	<.0000	.0037	.0126	<.0000	<.0000	1.265	.0000
Stddev	.0004	.0075	.0017	.0019	.0001	.0000	.0026	.013	.0001
%RSD	341.9	9.822	159.4	53.02	.6576	122.7	48.35	1.014	160.6
#1	.0000	.0679	-.0023	.0029	.0127	.0000	-.0057	1.260	.0001
#2	.0002	.0818	.0009	.0058	.0125	.0000	-.0026	1.280	.0000
#3	-.0005	.0796	-.0018	.0022	.0127	.0000	-.0078	1.255	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	<.0000	.0002	.1040	.0886	.0002	.1819	.0120	<.0000
Stddev	.0002	.0005	.0019	.0009	.0102	.0010	.0145	.0003	.0002
%RSD	362.8	20.24	946.9	.8985	11.47	459.4	7.968	2.745	237.6
#1	.0003	-.0020	.0022	.1049	.0988	.0001	.1750	.0124	-.0003
#2	-.0001	-.0030	-.0016	.1040	.0886	-.0007	.1721	.0119	-.0001
#3	.0000	-.0026	.0001	.1031	.0785	.0012	.1985	.0117	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4471	<.0000	.0034	<.0000	.0851	<.0000	.0003	.5338	<.0000
Stddev	.0054	.0000	.0003	.0013	.0045	.0027	.0018	.0029	.0004
%RSD	1.219	63.59	9.305	71.55	5.318	284.6	609.0	.5405	214.4
#1	.4524	.0000	.0031	-.0033	.0891	.0019	.0023	.5369	-.0007
#2	.4415	-.0001	.0033	-.0007	.0861	-.0034	-.0004	.5313	.0000
#3	.4474	-.0001	.0037	-.0015	.0802	-.0014	-.0010	.5331	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9451-C-1-A SD Acquired: 11/26/2014 11:01:38 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=50

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0088	.0003	.0005	.0022	.0259	.0018	.0076
Stddev	.0000	.0035	.0004	.0008	.0043	.0022	.0001
%RSD	.5502	1036.	65.92	37.56	16.54	123.4	1.611
#1	.0087	.0036	.0009	.0015	.0303	.0044	.0077
#2	.0088	-.0034	.0003	.0019	.0218	.0005	.0074
#3	.0088	.0008	.0004	.0031	.0255	.0006	.0076
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4863.0
Stddev	28.5
%RSD	.58582
#1	4859.3
#2	4836.6
#3	4893.2

Sample Name: 160-9451-C-1-B MS Acquired: 11/26/2014 11:05:35 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0194**	**1.307**	**.0926**	**.1885**	**.1572**	**.0941**	**.0924**	**7.305**	**.0939**
Stddev	.0013	.006	.0021	.0021	.0003	.0001	.0010	.036	.0008
%RSD	6.584	.4514	2.256	1.115	.2130	.1401	1.092	.4930	.8568
#1	.0205	1.306	.0950	.1907	.1568	.0942	.0935	7.347	.0948
#2	.0196	1.314	.0911	.1884	.1572	.0942	.0915	7.286	.0934
#3	.0180	1.302	.0918	.1865	.1575	.0940	.0923	7.283	.0936
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1012**	**.0966**	**.0958**	**1.491**	**1.294**	**.0972**	**1.790**	**.1545**	**.0471**
Stddev	.0008	.0011	.0014	.001	.017	.0006	.012	.0005	.0002
%RSD	.7830	1.101	1.457	.0832	1.340	.6145	.6944	.3551	.3387
#1	.1021	.0973	.0965	1.490	1.314	.0972	1.801	.1544	.0473
#2	.1008	.0971	.0942	1.492	1.286	.0978	1.792	.1551	.0471
#3	.1008	.0953	.0967	1.490	1.282	.0966	1.776	.1540	.0470
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.140**	**.1004**	**.1197**	**.0995**	**1.317**	**.0461**	**.0467**	**3.230**	**.0968**
Stddev	.008	.0004	.0005	.0006	.014	.0018	.0030	.007	.0009
%RSD	.2533	.4370	.4451	.5564	1.063	3.818	6.422	.2189	.9550
#1	3.131	.1009	.1195	.1001	1.332	.0447	.0490	3.238	.0977
#2	3.145	.1002	.1193	.0992	1.314	.0457	.0433	3.228	.0959
#3	3.144	.1001	.1203	.0991	1.304	.0481	.0477	3.224	.0966
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9451-C-1-B MS Acquired: 11/26/2014 11:05:35 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1393	.0946	.0937	.0231	.1363	.0949	.1033
Stddev	.0001	.0035	.0003	.0010	.0321	.0031	.0006
%RSD	.0618	3.708	.2755	4.386	23.59	3.301	.6165
#1	.1392	.0932	.0939	.0228	.1659	.0973	.1040
#2	.1394	.0986	.0934	.0223	.1408	.0914	.1029
#3	.1393	.0919	.0937	.0243	.1021	.0960	.1030
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4882.1
Stddev	43.5
%RSD	.89159
#1	4840.6
#2	4878.3
#3	4927.4

Sample Name: 160-9451-C-1-C MSD Acquired: 11/26/2014 11:09:24 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0185**	**2.922**	**.0965**	**.1995**	**.1699**	**.0988**	**.0948**	**7.617**	**.0978**
Stddev	.0002	.029	.0005	.0024	.0005	.0005	.0010	.049	.0012
%RSD	1.261	.9980	.4970	1.223	.2869	.4950	1.010	.6414	1.205
#1	.0186	2.939	.0970	.1978	.1701	.0988	.0954	7.578	.0973
#2	.0187	2.888	.0964	.2023	.1694	.0983	.0937	7.602	.0969
#3	.0183	2.939	.0960	.1985	.1703	.0993	.0952	7.672	.0991
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1060**	**.0987**	**.1032**	**2.331**	**1.637**	**.1031**	**2.003**	**.1639**	**.0496**
Stddev	.0003	.0007	.0026	.013	.030	.0008	.006	.0012	.0004
%RSD	.2378	.6792	2.474	.5727	1.821	.8226	.3235	.7450	.8185
#1	.1057	.0994	.1012	2.318	1.625	.1030	1.996	.1635	.0491
#2	.1061	.0986	.1023	2.330	1.671	.1024	2.006	.1630	.0498
#3	.1062	.0981	.1061	2.345	1.615	.1040	2.008	.1653	.0498
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.341**	**.1059**	**.1307**	**.1074**	**1.382**	**.0475**	**.0483**	**6.280**	**.1002**
Stddev	.009	.0008	.0031	.0025	.008	.0011	.0043	.022	.0010
%RSD	.2818	.7728	2.383	2.281	.5538	2.309	8.898	.3448	1.032
#1	3.346	.1054	.1288	.1053	1.376	.0468	.0524	6.272	.0994
#2	3.330	.1056	.1290	.1068	1.380	.0470	.0439	6.305	.0999
#3	3.347	.1069	.1343	.1101	1.391	.0488	.0487	6.264	.1014
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9451-C-1-C MSD Acquired: 11/26/2014 11:09:24 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1472	.0959	.1071	.0242	.1147	.1002	.1097
Stddev	.0007	.0036	.0008	.0012	.0282	.0017	.0009
%RSD	.5095	3.800	.7272	4.939	24.63	1.666	.8523
#1	.1476	.0984	.1076	.0230	.1449	.0985	.1090
#2	.1463	.0917	.1074	.0241	.0889	.1019	.1095
#3	.1477	.0976	.1062	.0254	.1102	.1003	.1108
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4905.6
Stddev	8.7
%RSD	.17648
#1	4909.7
#2	4911.6
#3	4895.7

Sample Name: 160-9451-C-2-A Acquired: 11/26/2014 11:13:13 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.2512	<.0000	.0053	.0400	.0000	<.0000	7.294	<.0000
Stddev	.0003	.0126	.0015	.0043	.0002	.0000	.0015	.025	.0001
%RSD	31.71	5.022	167.1	80.46	.4861	182.9	36.45	.3437	157.5
#1	-.0012	.2582	-.0026	.0064	.0399	.0000	-.0049	7.323	-.0001
#2	-.0010	.2587	.0002	.0090	.0402	.0000	-.0053	7.275	.0000
#3	-.0006	.2366	-.0003	.0006	.0398	.0000	-.0025	7.286	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0003	.0036	.3910	.3688	.0029	1.010	.0475	<.0000
Stddev	.0004	.0004	.0013	.0030	.0212	.0005	.007	.0006	.0004
%RSD	2070.	134.3	35.92	.7686	5.759	19.05	.7113	1.333	1420.
#1	.0004	.0008	.0046	.3878	.3485	.0023	1.007	.0482	.0004
#2	-.0003	.0001	.0040	.3937	.3909	.0031	1.018	.0470	-.0003
#3	-.0001	.0000	.0021	.3916	.3669	.0033	1.005	.0473	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.085	.0005	.0284	.0008	.7568	<.0000	.0023	2.751	.0001
Stddev	.010	.0002	.0025	.0013	.0057	.0018	.0042	.010	.0007
%RSD	.3295	44.75	8.944	164.2	.7529	223.3	185.6	.3563	618.7
#1	3.097	.0007	.0309	.0021	.7633	.0000	.0004	2.744	.0006
#2	3.080	.0003	.0286	-.0005	.7547	.0004	-.0007	2.747	.0004
#3	3.079	.0005	.0258	.0009	.7525	-.0028	.0071	2.762	-.0006
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9451-C-2-A Acquired: 11/26/2014 11:13:13 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0527	.0017	.0032	.0030	.0283	.0006	.0056
Stddev	.0001	.0066	.0009	.0008	.0376	.0022	.0001
%RSD	.1606	381.9	27.37	28.06	132.8	343.5	2.295
#1	.0528	-.0059	.0042	.0037	.0363	-.0018	.0056
#2	.0526	.0063	.0026	.0021	-.0127	.0025	.0055
#3	.0527	.0048	.0028	.0032	.0613	.0013	.0057
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4773.8
Stddev	18.0
%RSD	.37663
#1	4753.1
#2	4785.7
#3	4782.6

Sample Name: 160-9451-C-3-A Acquired: 11/26/2014 11:17:07 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0008**	**.1205**	**<.0000**	**.0104**	**.0119**	**<.0000**	**<.0000**	**5.642**	**.0002**
Stddev	.0004	.0035	.0025	.0032	.0001	.0000	.0031	.119	.0002
%RSD	57.02	2.879	203.9	30.52	1.180	79.50	59.15	2.114	137.1
#1	.0011	.1201	-.0042	.0095	.0120	-.0001	-.0025	5.515	.0000
#2	.0003	.1241	.0002	.0140	.0118	.0000	-.0086	5.661	.0004
#3	.0010	.1172	.0002	.0078	.0120	-.0001	-.0047	5.751	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0003**	**<.0000**	**<.0000**	**.1536**	**.1478**	**.0027**	**1.140**	**.0161**	**.0003**
Stddev	.0001	.0008	.0022	.0018	.0240	.0002	.018	.0003	.0003
%RSD	38.97	40.85	1894.	1.171	16.22	5.728	1.610	1.846	132.2
#1	.0002	-.0010	-.0011	.1547	.1543	.0027	1.119	.0164	.0001
#2	.0004	-.0026	.0024	.1544	.1213	.0025	1.152	.0162	.0007
#3	.0002	-.0021	-.0017	.1515	.1679	.0028	1.149	.0158	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**12.00**	**.0002**	**.0096**	**<.0000**	**2.396**	**.0000**	**<.0000**	**1.656**	**.0002**
Stddev	.03	.0002	.0023	.0009	.042	.0014	.0018	.006	.0007
%RSD	.2528	99.68	23.89	130.9	1.759	3799.	67.34	.3823	444.0
#1	11.98	.0003	.0108	-.0013	2.351	-.0015	-.0015	1.650	.0009
#2	12.04	.0003	.0112	.0004	2.403	.0009	-.0017	1.655	-.0005
#3	11.99	.0000	.0070	-.0012	2.434	.0007	-.0047	1.662	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9451-C-3-A Acquired: 11/26/2014 11:17:07 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0683	<.0000	.0011	.0011	.0109	.0017	.0049
Stddev	.0002	.0012	.0006	.0008	.0260	.0029	.0002
%RSD	.3160	103.5	52.10	74.79	239.9	168.9	3.803
#1	.0682	-.0025	.0005	.0004	-.0100	.0047	.0048
#2	.0685	-.0009	.0017	.0010	.0401	-.0011	.0048
#3	.0682	-.0001	.0012	.0020	.0025	.0015	.0051
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4846.4
Stddev	13.8
%RSD	.28400
#1	4852.8
#2	4830.6
#3	4855.8

Sample Name: 160-9451-C-4-A Acquired: 11/26/2014 11:21:02 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0008	.0027	<.0000	.0028	<.0000	<.0000	<.0000	.0153	.0000
Stddev	.0013	.0063	.0007	.0005	.0001	.0000	.0010	.0004	.0001
%RSD	151.0	232.1	30.89	16.72	437.7	56.58	39.88	2.367	737.1
#1	.0018	.0014	-.0014	.0023	.0000	-.0001	-.0027	.0157	-.0001
#2	-.0006	.0096	-.0022	.0030	-.0002	.0000	-.0015	.0153	-.0001
#3	.0013	-.0028	-.0027	.0032	.0001	.0000	-.0036	.0150	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	.0021	.0045	<.0000	<.0000	.0032	<.0000	<.0000
Stddev	.0003	.0013	.0025	.0013	.0196	.0017	.0076	.0003	.0001
%RSD	174.7	159.1	119.2	28.48	1286.	531.1	238.4	153.4	431.7
#1	.0000	-.0017	.0046	.0059	.0014	-.0006	.0040	-.0002	.0001
#2	.0000	-.0015	-.0005	.0034	-.0224	.0015	-.0048	.0001	-.0001
#3	-.0006	.0007	.0023	.0041	.0165	-.0019	.0104	-.0005	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	.0010	<.0000	.0011	.0005	.0007	<.0000	<.0000
Stddev	.0088	.0003	.0000	.0007	.0056	.0025	.0010	.0077	.0004
%RSD	1514.	75.41	3.621	33.83	530.0	492.1	135.9	156.5	2337.
#1	-.0088	-.0005	.0009	-.0013	.0072	.0034	.0015	-.0018	-.0002
#2	-.0017	.0000	.0010	-.0023	-.0002	-.0011	-.0004	-.0138	.0005
#3	.0088	-.0005	.0009	-.0025	-.0038	-.0008	.0010	.0007	-.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9451-C-4-A Acquired: 11/26/2014 11:21:02 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0027	.0014	.0011	.0651	.0012	.0034
Stddev	.0001	.0031	.0008	.0016	.0117	.0024	.0001
%RSD	329.2	117.6	60.97	140.7	18.04	198.4	2.704
#1	.0000	.0031	.0019	.0013	.0524	.0038	.0034
#2	-.0001	-.0007	.0004	-.0006	.0675	.0007	.0035
#3	.0000	.0055	.0018	.0026	.0756	-.0009	.0033
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4738.0
Stddev	96.6
%RSD	2.0392
#1	4631.0
#2	4764.3
#3	4818.8

Sample Name: MB 160-159179/1-A Acquired: 11/26/2014 11:24:58 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0008	.0026	<.0000	.0012	<.0000	<.0000	<.0000	.0377	.0000
Stddev	.0010	.0074	.0008	.0011	.0001	.0000	.0035	.0015	.0002
%RSD	128.9	285.9	50.19	87.25	300.3	62.07	2496.	3.971	760.1
#1	.0019	.0051	-.0024	.0024	.0000	-.0001	.0039	.0386	-.0001
#2	-.0001	-.0058	-.0009	.0002	.0001	.0000	-.0020	.0360	-.0001
#3	.0006	.0084	-.0015	.0011	-.0001	.0000	-.0023	.0386	.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0005	.0006	<.0000	<.0000	.0017	<.0000	<.0000	<.0000
Stddev	.0001	.0002	.0020	.0016	.0302	.0011	.0061	.0002	.0001
%RSD	92.18	40.69	358.7	1681.	1095.	66.20	135.4	151.6	2710.
#1	-.0002	.0007	.0024	-.0001	.0064	.0023	.0025	.0000	-.0001
#2	.0000	.0007	-.0015	.0015	-.0365	.0024	-.0086	-.0003	.0001
#3	-.0001	.0003	.0008	-.0017	.0218	.0004	-.0075	-.0001	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0176	<.0000	<.0000	<.0000	.0007	<.0000	.0010	.0057	.0010
Stddev	.0115	.0002	.0002	.0007	.0027	.0011	.0032	.0052	.0007
%RSD	65.20	85.76	2483.	34.99	392.7	80.29	318.2	90.88	65.95
#1	.0046	-.0005	.0002	-.0016	-.0021	-.0024	.0009	.0093	.0006
#2	.0216	-.0002	-.0002	-.0017	.0032	-.0016	.0042	-.0002	.0018
#3	.0265	-.0001	.0000	-.0029	.0009	-.0002	-.0021	.0079	.0007
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: MB 160-159179/1-A Acquired: 11/26/2014 11:24:58 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	<.0000	.0008	.0018	<.0000	.0009	.0083
Stddev	.0000	.0044	.0004	.0013	.0194	.0014	.0002
%RSD	509.3	184.8	49.99	75.63	639.6	154.4	2.156
#1	.0000	-.0065	.0004	.0023	-.0245	.0008	.0085
#2	.0000	.0023	.0008	.0002	.0023	-.0004	.0082
#3	.0000	-.0029	.0011	.0027	.0131	.0023	.0082
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4803.0
Stddev	34.3
%RSD	.71481
#1	4822.5
#2	4823.2
#3	4763.4

Sample Name: CCV Acquired: 11/26/2014 11:28:55 Type: QC
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.9731**	**49.79**	**4.933**	**5.194**	**5.045**	**5.061**	**4.972**	**50.30**	**4.965**
Stddev	.0057	.15	.062	.029	.012	.066	.058	.51	.051
%RSD	.5872	.3012	1.258	.5516	.2370	1.295	1.171	1.023	1.023
#1	.9680	49.63	4.867	5.179	5.032	5.004	4.906	49.75	4.910
#2	.9792	49.92	4.941	5.176	5.052	5.046	4.990	50.38	4.974
#3	.9721	49.83	4.990	5.227	5.052	5.132	5.018	50.77	5.011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.987**	**4.981**	**4.966**	**51.48**	**49.81**	**5.057**	**49.56**	**5.105**	**.9925**
Stddev	.056	.032	.058	.19	.10	.002	.26	.021	.0094
%RSD	1.112	.6404	1.177	.3639	.2037	.0303	.5230	.4104	.9467
#1	4.927	4.944	4.906	51.30	49.69	5.057	49.26	5.081	.9824
#2	4.996	4.998	4.969	51.46	49.84	5.056	49.73	5.120	.9942
#3	5.037	5.001	5.022	51.68	49.89	5.059	49.69	5.115	1.001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**50.26**	**5.005**	**50.52**	**4.992**	**49.22**	**.9860**	**.9881**	**5.117**	**4.983**
Stddev	.14	.052	.53	.055	.68	.0088	.0177	.009	.052
%RSD	.2707	1.040	1.053	1.100	1.390	.8909	1.790	.1774	1.054
#1	50.11	4.949	49.93	4.933	48.50	.9771	.9699	5.107	4.925
#2	50.31	5.015	50.65	5.003	49.32	.9863	.9893	5.121	4.997
#3	50.37	5.051	50.97	5.041	49.86	.9946	1.005	5.124	5.027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: CCV Acquired: 11/26/2014 11:28:55 Type: QC
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.037**	**4.904**	**5.046**	**1.005**	**4.929**	**5.043**	**5.002**
Stddev	.076	.024	.009	.011	.069	.014	.057
%RSD	1.516	.4888	.1714	1.071	1.401	.2811	1.138
#1	4.983	4.876	5.039	.9927	4.849	5.028	4.940
#2	5.125	4.913	5.044	1.011	4.963	5.056	5.014
#3	5.005	4.921	5.056	1.012	4.974	5.046	5.053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**4631.4**
Stddev	37.4
%RSD	.80835
#1	4669.4
#2	4630.1
#3	4594.6

Sample Name: CCB Acquired: 11/26/2014 11:32:38 Type: QC
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0080	.0018	.0116	.0003	.0004	<.0000
Stddev	.0005	.0048	.0012	.0031	.0002	.0000	.0017
%RSD	30.55	59.55	66.01	26.55	67.95	8.294	72.23
#1	-.0010	.0124	.0005	.0088	.0001	.0003	-.0035
#2	-.0019	.0029	.0029	.0110	.0005	.0003	-.0029
#3	-.0015	.0088	.0021	.0149	.0002	.0004	-.0004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Ca1840	Cd2288	Co2286	Cr2835	Cu2178	Fe2599	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0032	.0003	<.0000	<.0000	.0001	.0034	.0288
Stddev	.0014	.0002	.0001	.0005	.0011	.0008	.0170
%RSD	44.57	72.49	359.3	30.68	824.8	22.02	58.97
#1	.0038	.0005	.0001	-.0013	-.0006	.0042	.0477
#2	.0016	.0001	-.0001	-.0012	.0015	.0027	.0240
#3	.0043	.0003	-.0001	-.0020	-.0004	.0034	.0147
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Li6707	Mg2798	Mn2576	Mo2020	Na5895	Ni2216	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0010	<.0000	.0001	.0002	.0070	<.0000	.0036
Stddev	.0014	.0037	.0004	.0003	.0072	.0003	.0024
%RSD	139.5	79.99	252.5	151.7	103.8	150.9	66.51
#1	.0002	-.0004	-.0003	.0005	.0133	-.0001	.0063
#2	.0026	-.0068	.0005	.0004	.0085	.0001	.0017
#3	.0002	-.0069	.0002	-.0002	-.0009	-.0005	.0028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: CCB Acquired: 11/26/2014 11:32:38 Type: QC
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W<.0000	.0044	<.0000	<.0000	<.0000	.0005	.0004
Stddev	.0031	.0024	.0018	.0035	.0019	.0003	.0001
%RSD	118.0	53.97	112.3	9855.	34.94	46.95	27.50
#1	-.0050	.0070	-.0018	.0037	-.0076	.0005	.0003
#2	-.0037	.0024	-.0032	-.0006	-.0045	.0008	.0003
#3	.0009	.0038	.0003	-.0032	-.0042	.0003	.0005
Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	.0025						
Low Limit	-.0025						

Elem	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0004	.0000	.0465	.0003	.0003
Stddev	.0064	.0007	.0021	.0234	.0044	.0002
%RSD	115.2	151.1	6528.	50.36	1288.	65.81
#1	.0010	.0000	.0012	.0356	-.0016	.0005
#2	-.0058	.0012	-.0024	.0733	.0053	.0004
#3	-.0117	.0001	.0014	.0305	-.0027	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit						
Low Limit						

Int. Std.	Y_3710
Units	Cts/S
Avg	4741.2
Stddev	59.9
%RSD	1.2642
#1	4719.5
#2	4695.2
#3	4809.0

Sample Name: LCS 160-159179/2-A Acquired: 11/26/2014 11:36:36 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0006**	**<.0000**	**.0007**	**.0030**	**.0000**	**<.0000**	**<.0000**	**.0399**	**.0002**
Stddev	.0006	.0052	.0015	.0036	.0000	.0000	.0012	.0002	.0000
%RSD	87.89	143.7	222.8	122.0	64.25	46340.	34.55	.5478	9.881
#1	.0012	.0022	.0007	-.0012	.0000	.0000	-.0050	.0401	.0002
#2	.0006	-.0076	-.0009	.0053	.0001	.0000	-.0030	.0397	.0003
#3	.0001	-.0054	.0022	.0048	.0000	-.0001	-.0027	.0401	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**.0000**	**<.0000**	**.0032**	**.0066**	**<.0000**	**<.0000**	**.0004**	**.0002**
Stddev	.0002	.0010	.0017	.0014	.0212	.0011	.0071	.0001	.0001
%RSD	144.1	2143.	651.7	42.18	321.4	160.2	940.1	39.29	61.02
#1	-.0001	.0013	.0013	.0024	.0310	-.0017	.0044	.0005	.0002
#2	.0002	-.0005	.0000	.0025	-.0036	.0005	-.0089	.0003	.0003
#3	.0002	-.0006	-.0020	.0048	-.0076	-.0008	.0023	.0003	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0208**	**<.0000**	**.0005**	**<.0000**	**.0049**	**<.0000**	**.0027**	**.0069**	**.0004**
Stddev	.0052	.0001	.0014	.0005	.0021	.0009	.0018	.0004	.0003
%RSD	24.73	45.60	261.7	21.40	43.84	211.1	65.91	5.724	69.41
#1	.0192	-.0001	-.0009	-.0017	.0035	-.0014	.0047	.0074	.0007
#2	.0266	-.0003	.0018	-.0026	.0038	.0003	.0013	.0069	.0003
#3	.0167	-.0002	.0007	-.0022	.0074	-.0002	.0021	.0066	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LCS 160-159179/2-A Acquired: 11/26/2014 11:36:36 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	<.0000	.0013	<.0000	.0047	.0030	.0098
Stddev	.0001	.0051	.0013	.0013	.0210	.0038	.0001
%RSD	447.8	139.2	94.98	130900.	446.6	126.3	1.396
#1	.0000	-.0005	.0023	.0003	.0269	-.0006	.0099
#2	-.0001	-.0095	.0018	-.0015	-.0148	.0070	.0098
#3	.0001	-.0009	-.0001	.0012	.0020	.0026	.0097
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4758.3
Stddev	40.9
%RSD	.85900
#1	4717.6
#2	4799.4
#3	4757.9

Sample Name: 160-9422-B-19-A Acquired: 11/26/2014 11:40:31 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0006**	**.0217**	**<.0000**	**.0592**	**.0000**	**<.0000**	**<.0000**	**3.090**	**.1130**
Stddev	.0005	.0115	.0020	.0005	.0001	.0000	.0030	.016	.0009
%RSD	87.34	53.23	446.1	.8520	345.6	20.13	299.5	.5109	.7530
#1	.0004	.0115	-.0002	.0586	.0002	-.0001	-.0001	3.087	.1127
#2	.0003	.0342	.0014	.0595	.0000	.0000	-.0043	3.107	.1139
#3	.0012	.0194	-.0026	.0594	-.0001	.0000	.0014	3.076	.1123
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0026**	**1.639**	**.0031**	**.9341**	**1.555**	**.0014**	**1.189**	**.0336**	**<.0000**
Stddev	.0003	.006	.0008	.0013	.045	.0005	.012	.0002	.0006
%RSD	11.74	.3899	26.74	.1426	2.871	32.79	1.013	.6752	1693.
#1	.0029	1.639	.0021	.9327	1.580	.0012	1.188	.0335	.0002
#2	.0027	1.645	.0033	.9353	1.581	.0011	1.178	.0339	.0004
#3	.0023	1.632	.0037	.9344	1.503	.0020	1.202	.0334	-.0007
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.200**	**.0030**	**6.936**	**.0093**	**1.476**	**.0010**	**<.0000**	**.7099**	**<.0000**
Stddev	.006	.0004	.045	.0016	.016	.0008	.0025	.0061	.0004
%RSD	.2576	12.55	.6566	16.76	1.085	81.09	1626.	.8616	1154.
#1	2.201	.0027	6.917	.0083	1.470	.0007	.0027	.7120	-.0002
#2	2.195	.0029	6.988	.0111	1.495	.0004	-.0019	.7146	-.0003
#3	2.206	.0034	6.903	.0085	1.465	.0018	-.0013	.7030	.0004
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-19-A Acquired: 11/26/2014 11:40:31 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0039	.0080	.0018	.0039	.0208	.0055	1.072
Stddev	.0001	.0011	.0005	.0013	.0176	.0010	.007
%RSD	1.855	14.29	28.43	33.64	84.64	17.32	.6873
#1	.0040	.0092	.0014	.0027	.0152	.0059	1.069
#2	.0040	.0069	.0024	.0053	.0405	.0062	1.080
#3	.0038	.0079	.0016	.0036	.0067	.0044	1.066
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4712.5
Stddev	24.1
%RSD	.51230
#1	4707.1
#2	4691.5
#3	4738.9

Sample Name: 160-9422-B-19-A SD Acquired: 11/26/2014 11:44:18 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0011**	**.0065**	**<.0000**	**.0139**	**<.0000**	**<.0000**	**<.0000**	**.5844**	**.0216**
Stddev	.0006	.0041	.0008	.0023	.0002	.0000	.0031	.0036	.0003
%RSD	48.86	62.35	215.7	16.20	386.1	87.86	432.1	.6205	1.562
#1	.0012	.0028	-.0009	.0146	.0001	.0000	-.0009	.5868	.0219
#2	.0017	.0059	-.0007	.0157	.0000	-.0001	.0024	.5862	.0217
#3	.0006	.0109	.0005	.0114	-.0002	-.0001	-.0037	.5802	.0212
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0006**	**.3127**	**.0042**	**.1832**	**.2840**	**<.0000**	**.2234**	**.0065**	**<.0000**
Stddev	.0005	.0005	.0009	.0005	.0245	.0009	.0050	.0003	.0002
%RSD	95.68	.1738	22.01	.2815	8.633	65.33	2.246	5.051	80.89
#1	.0007	.3129	.0037	.1827	.3106	-.0020	.2215	.0066	-.0001
#2	.0010	.3132	.0036	.1837	.2791	-.0003	.2196	.0068	-.0005
#3	.0000	.3121	.0052	.1834	.2623	-.0017	.2291	.0062	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.4378**	**.0004**	**1.329**	**.0008**	**.2760**	**.0008**	**.0010**	**.1312**	**.0003**
Stddev	.0055	.0003	.014	.0003	.0008	.0031	.0012	.0072	.0004
%RSD	1.256	75.72	1.045	39.98	.2756	382.9	131.2	5.490	120.0
#1	.4363	.0008	1.339	.0012	.2760	-.0017	.0012	.1305	-.0001
#2	.4332	.0003	1.334	.0009	.2767	.0043	.0021	.1244	.0004
#3	.4439	.0002	1.313	.0005	.2752	-.0001	-.0004	.1388	.0006
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-19-A SD Acquired: 11/26/2014 11:44:18 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0007	<.0000	.0008	.0019	.0091	.0009	.2095
Stddev	.0000	.0089	.0005	.0007	.0129	.0033	.0017
%RSD	6.375	1150.	56.34	39.03	141.9	344.3	.8342
#1	.0007	-.0108	.0010	.0012	-.0052	-.0028	.2108
#2	.0008	.0024	.0012	.0027	.0125	.0023	.2103
#3	.0007	.0061	.0003	.0017	.0199	.0033	.2075
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4789.3
Stddev	19.7
%RSD	.41090
#1	4786.5
#2	4771.2
#3	4810.3

Sample Name: 160-9422-B-19-B MS Acquired: 11/26/2014 11:48:09 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0184**	**.8934**	**.0848**	**.2337**	**.0898**	**.0904**	**.0872**	**3.653**	**.1892**
Stddev	.0014	.0146	.0033	.0036	.0006	.0003	.0050	.051	.0032
%RSD	7.478	1.636	3.907	1.538	.6917	.3147	5.759	1.398	1.676
#1	.0199	.8850	.0872	.2309	.0894	.0903	.0903	3.702	.1925
#2	.0172	.8850	.0810	.2323	.0896	.0902	.0899	3.656	.1890
#3	.0181	.9103	.0862	.2377	.0905	.0907	.0814	3.600	.1862
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0979**	**1.559**	**.0944**	**1.798**	**2.258**	**.0930**	**1.942**	**.1216**	**.0441**
Stddev	.0008	.044	.0024	.002	.003	.0009	.014	.0009	.0006
%RSD	.7706	2.843	2.574	.1290	.1113	.9708	.7371	.7804	1.347
#1	.0987	1.596	.0968	1.800	2.256	.0936	1.956	.1207	.0446
#2	.0978	1.572	.0919	1.796	2.261	.0934	1.942	.1214	.0442
#3	.0972	1.510	.0946	1.800	2.259	.0919	1.927	.1226	.0435
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.884**	**.0968**	**6.256**	**.1014**	**2.169**	**.0483**	**.0453**	**.6460**	**.0896**
Stddev	.024	.0013	.108	.0013	.038	.0020	.0007	.0042	.0015
%RSD	.8186	1.392	1.733	1.244	1.734	4.235	1.613	.6575	1.646
#1	2.859	.0982	6.371	.1027	2.209	.0498	.0456	.6415	.0913
#2	2.886	.0965	6.240	.1014	2.164	.0492	.0458	.6500	.0886
#3	2.906	.0956	6.156	.1002	2.134	.0460	.0444	.6466	.0889
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-19-B MS Acquired: 11/26/2014 11:48:09 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0952	.0937	.0894	.0216	.0915	.0917	1.029
Stddev	.0007	.0017	.0003	.0015	.0503	.0035	.017
%RSD	.7507	1.773	.2959	7.112	54.97	3.816	1.664
#1	.0947	.0929	.0897	.0208	.1189	.0879	1.046
#2	.0949	.0956	.0892	.0233	.1221	.0923	1.030
#3	.0960	.0926	.0892	.0205	.0334	.0949	1.012
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4726.9
Stddev	99.1
%RSD	2.0974
#1	4648.6
#2	4693.7
#3	4838.4

Sample Name: 160-9422-B-19-C MSD Acquired: 11/26/2014 11:51:53 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0179	.9339	.0896	.2400	.0930	.0931	.0925	3.732	.1927
Stddev	.0001	.0003	.0023	.0035	.0001	.0001	.0015	.026	.0016
%RSD	.7005	.0317	2.591	1.472	.0915	.1261	1.569	.6941	.8168
#1	.0178	.9337	.0874	.2383	.0930	.0932	.0909	3.704	.1910
#2	.0179	.9343	.0894	.2441	.0930	.0930	.0927	3.736	.1931
#3	.0181	.9338	.0920	.2377	.0931	.0932	.0938	3.756	.1941
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1007	1.586	.0954	1.884	2.310	.0950	1.969	.1252	.0465
Stddev	.0003	.009	.0012	.007	.017	.0007	.019	.0005	.0003
%RSD	.3444	.5717	1.220	.3701	.7496	.7559	.9850	.3759	.6780
#1	.1004	1.594	.0946	1.889	2.290	.0956	1.970	.1257	.0464
#2	.1006	1.588	.0968	1.887	2.314	.0942	1.949	.1248	.0462
#3	.1011	1.576	.0949	1.876	2.324	.0953	1.987	.1252	.0468
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.954	.1001	6.315	.1064	2.213	.0491	.0456	.6364	.0936
Stddev	.007	.0005	.047	.0006	.023	.0016	.0035	.0024	.0006
%RSD	.2414	.5490	.7361	.5927	1.029	3.316	7.649	.3813	.5935
#1	2.957	.0995	6.275	.1063	2.188	.0473	.0416	.6359	.0931
#2	2.946	.1004	6.305	.1058	2.218	.0505	.0481	.6390	.0935
#3	2.959	.1005	6.366	.1070	2.233	.0494	.0471	.6342	.0942
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-19-C MSD Acquired: 11/26/2014 11:51:53 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0985	.0973	.0933	.0217	.1097	.0937	1.045
Stddev	.0003	.0065	.0018	.0008	.0172	.0027	.007
%RSD	.2538	6.672	1.895	3.656	15.72	2.898	.6276
#1	.0987	.0925	.0920	.0210	.1182	.0924	1.039
#2	.0982	.0947	.0953	.0217	.1210	.0968	1.046
#3	.0986	.1047	.0927	.0226	.0899	.0919	1.052
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4889.7
Stddev	20.3
%RSD	.41449
#1	4888.9
#2	4869.8
#3	4910.3

Sample Name: 160-9451-C-4-A Acquired: 11/26/2014 11:55:36 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0006	.0207	<.0000	<.0000	.0006	<.0000	<.0000	.1475	.0000
Stddev	.0003	.0023	.0014	.0041	.0001	.0000	.0048	.0023	.0001
%RSD	53.40	11.02	63.50	401.6	20.02	213.5	269.2	1.588	286.6
#1	.0003	.0187	-.0038	-.0010	.0005	.0000	.0037	.1501	.0001
#2	.0006	.0202	-.0014	.0031	.0007	-.0001	-.0039	.1455	.0002
#3	.0010	.0232	-.0013	-.0051	.0008	.0000	-.0052	.1469	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	<.0000	.0003	.0614	.0276	.0005	.0182	.0011	<.0000
Stddev	.0003	.0006	.0003	.0007	.0292	.0012	.0075	.0001	.0002
%RSD	1288.	34.49	85.98	1.098	105.8	228.5	41.06	8.694	758.9
#1	-.0001	-.0023	.0002	.0609	-.0002	.0019	.0146	.0011	-.0001
#2	.0003	-.0011	.0006	.0612	.0580	.0004	.0268	.0011	-.0002
#3	-.0002	-.0017	.0001	.0622	.0249	-.0006	.0132	.0012	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0162	.0003	.0035	<.0000	.0188	.0001	.0009	.0309	<.0000
Stddev	.0092	.0002	.0012	.0005	.0030	.0028	.0040	.0054	.0003
%RSD	57.06	75.80	34.12	27.47	15.87	3402.	458.0	17.35	76.67
#1	.0221	.0002	.0034	-.0023	.0192	.0024	-.0012	.0285	-.0002
#2	.0209	.0001	.0047	-.0021	.0215	-.0030	.0055	.0271	-.0007
#3	.0055	.0005	.0024	-.0013	.0156	.0009	-.0017	.0370	-.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9451-C-4-A Acquired: 11/26/2014 11:55:36 Type: Unk
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	<.0000	.0001	<.0000	.0210	.0044	.0079
Stddev	.0000	.0031	.0007	.0020	.0157	.0012	.0004
%RSD	1.349	2100.	1289.	313.5	74.76	28.22	4.976
#1	.0004	-.0035	-.0007	-.0017	.0336	.0054	.0083
#2	.0004	.0026	.0008	.0017	.0034	.0030	.0075
#3	.0004	.0005	.0001	-.0019	.0261	.0047	.0079
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4889.6
Stddev	18.4
%RSD	.37617
#1	4883.2
#2	4910.4
#3	4875.3

Sample Name: CCV Acquired: 11/26/2014 11:59:33 Type: QC
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.9580**	**49.01**	**4.829**	**5.094**	**4.965**	**5.042**	**4.886**	**49.14**	**4.857**
Stddev	.0045	.15	.038	.027	.013	.032	.037	.26	.038
%RSD	.4676	.2966	.7949	.5372	.2676	.6424	.7516	.5246	.7819
#1	.9544	48.93	4.816	5.068	4.951	5.072	4.877	49.17	4.850
#2	.9566	48.92	4.800	5.091	4.968	5.008	4.854	48.87	4.823
#3	.9630	49.18	4.873	5.123	4.977	5.047	4.926	49.38	4.898
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.886**	**4.906**	**4.867**	**50.43**	**48.97**	**4.981**	**48.47**	**5.012**	**.9728**
Stddev	.030	.024	.034	.13	.15	.018	.13	.011	.0057
%RSD	.6094	.4978	.7003	.2503	.3120	.3715	.2759	.2123	.5878
#1	4.883	4.897	4.860	50.32	48.80	4.960	48.61	5.014	.9715
#2	4.858	4.888	4.836	50.41	49.02	4.987	48.35	5.001	.9678
#3	4.918	4.934	4.903	50.57	49.10	4.996	48.45	5.022	.9790
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**49.45**	**4.896**	**49.44**	**4.880**	**48.36**	**.9676**	**.9735**	**5.036**	**4.876**
Stddev	.13	.031	.36	.031	.38	.0081	.0073	.022	.028
%RSD	.2535	.6374	.7354	.6299	.7805	.8346	.7485	.4352	.5664
#1	49.33	4.898	49.39	4.883	48.26	.9654	.9734	5.011	4.883
#2	49.46	4.864	49.10	4.847	48.04	.9609	.9663	5.047	4.846
#3	49.58	4.927	49.82	4.908	48.78	.9766	.9808	5.051	4.900
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: CCV Acquired: 11/26/2014 11:59:33 Type: QC
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.035**	**4.849**	**4.954**	**.9811**	**4.880**	**4.958**	**4.896**
Stddev	.076	.031	.014	.0091	.038	.014	.035
%RSD	1.516	.6380	.2785	.9254	.7878	.2864	.7204
#1	4.950	4.822	4.938	.9819	4.859	4.952	4.891
#2	5.056	4.843	4.960	.9716	4.857	4.949	4.864
#3	5.098	4.883	4.964	.9897	4.924	4.975	4.934
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**4770.4**
Stddev	21.3
%RSD	.44602
#1	4771.3
#2	4791.2
#3	4748.7

Sample Name: CCB Acquired: 11/26/2014 12:03:17 Type: QC
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0005**	**.0040**	**.0007**	**.0110**	**.0007**	**.0008**	**.0003**	**.0041**	**.0002**
Stddev	.0009	.0136	.0018	.0055	.0008	.0007	.0023	.0013	.0002
%RSD	174.9	335.3	245.5	49.52	124.0	89.58	783.0	32.82	102.1
#1	.0015	.0190	.0002	.0165	.0016	.0016	-.0024	.0056	.0004
#2	-.0004	-.0074	.0028	.0111	.0002	.0004	.0016	.0031	.0000
#3	.0005	.0005	-.0007	.0055	.0002	.0003	.0017	.0036	.0002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**<.0000**	**.0030**	**.0066**	**<.0000**	**.0012**	**<.0000**	**.0007**	**<.0000**
Stddev	.0002	.0014	.0049	.0072	.0101	.0005	.0088	.0009	.0002
%RSD	125.1	171.1	162.6	109.6	51.51	41.13	1036.	135.5	71.51
#1	.0000	.0008	.0068	.0148	-.0118	.0010	.0050	.0018	-.0003
#2	.0003	-.0020	-.0025	.0012	-.0159	.0008	-.0110	.0001	-.0006
#3	.0000	-.0013	.0048	.0038	-.0309	.0017	.0035	.0002	-.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0116**	**<.0000**	**.0019**	**<.0000**	**.0023**	**.0005**	**<.0000**	**<.0000**	**.0000**
Stddev	.0026	.0003	.0006	.0007	.0042	.0005	.0022	.0023	.0003
%RSD	22.05	245.3	33.71	109.9	179.3	84.16	126.0	26.30	4724.
#1	.0130	.0001	.0015	.0000	.0071	.0008	-.0013	-.0079	.0001
#2	.0131	.0000	.0026	-.0014	-.0006	.0000	-.0041	-.0115	-.0003
#3	.0086	-.0004	.0015	-.0006	.0004	.0008	.0002	-.0072	.0002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Sample Name: CCB Acquired: 11/26/2014 12:03:17 Type: QC
Method: 2014v3(v308) Mode: CONC Corr. Factor: 1.000000
User: metals Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0008	.0050	.0017	.0028	<.0000	.0021	.0005
Stddev	.0006	.0007	.0009	.0003	.0153	.0015	.0001
%RSD	73.97	14.03	54.33	9.877	2843.	72.08	18.36
#1	.0015	.0058	.0025	.0029	.0072	.0006	.0006
#2	.0004	.0044	.0020	.0025	.0093	.0020	.0004
#3	.0005	.0049	.0007	.0030	-.0181	.0037	.0005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_3710
Units	Cts/S
Avg	4785.2
Stddev	79.3
%RSD	1.6582
#1	4695.7
#2	4813.0
#3	4846.9

	Pos ID	Rack	Row	Col	Type	Samplename	Comment	Custom ID1	Custom ID2	Custom ID3
1	1001	3	1	1	Unk	LB 160-153858/1-E				
2	1002	3	1	2	Unk	LCS 160-158796/2-				
3	1003	3	1	3	Unk	LCSD 160-158796/3				
4	1004	3	1	4	Unk	LCS 160-158796/5-				
5	1005	3	1	5	Unk	LCSD 160-158796/6				
6	1006	3	1	6	Unk	160-9093-G-1-K	DF=10			
7	1007	3	1	7	Unk	160-9093-G-1-K SD	DF=50			
8	1008	3	1	8	Unk	MB 160-158541/1-A				
9	1009	3	1	9	Unk	LCSSRM 160-15854	DF=2			
10	1010	3	1	10	Unk	160-9129-E-1-I	DF=10			
11	1011	3	1	11	Unk	160-9129-E-1-I SD	DF=50			
12	1012	3	1	12	Unk	160-9129-E-1-J MS	DF=10			
13	1013	3	1	13	Unk	160-9129-E-1-K MS	DF=10			
14	1014	3	1	14	Unk	160-9129-E-2-E	DF=10			
15	1015	3	1	15	Unk	160-9129-E-3-E	DF=10			
16	1016	3	2	1	Unk	160-9129-E-4-F	DF=10			
17	1017	3	2	2	Unk	160-9129-E-5-E	DF=10			
18	1018	3	2	3	Unk	160-9129-E-6-E	DF=10			
19	1019	3	2	4	Unk	160-9129-E-7-E	DF=10			
20	1020	3	2	5	Unk	160-9129-E-8-E	DF=10			
21	1021	3	2	6	Unk	160-9129-E-9-E	DF=10			
22	1022	3	2	7	Unk	TEST 1	DF=50			
23	1023	3	2	8	Unk	TEST 14	DF=50			
24	1024	3	2	9	Unk	TEST 21	DF=50			
25	1025	3	2	10	Unk	TEST 4				
26	1026	3	2	11	Unk	TEST 5				

	CorrFact	Check	Check Table	Fail Action
1	1			---
2	1			---
3	1			---
4	1			---
5	1			---
6	1			---
7	1			---
8	1			---
9	1			---
10	1			---
11	1			---
12	1			---
13	1			---
14	1			---
15	1			---
16	1			---
17	1			---
18	1			---
19	1			---
20	1			---
21	1			---
22	1			---
23	1			---
24	1			---
25	1			---
26	1			---

FC 12/8/14

ABATCH: 161515

File: 120514C2

	Pos ID	Rack	Row	Col	Type	Samplename	Comment	Custom ID1	Custom ID2	Custom ID3
1	1001	3	1	1	Unk	160-9134-A-9-A	→ Ca			
2	1002	3	1	2	Unk	MB 160-159967/1-A				
3	1003	3	1	3	Unk	LCS 160-159967/2-				
4	1004	3	1	4	Unk	160-9191-A-1-A				
5	1005	3	1	5	Unk	160-9191-A-2-A				
6	1006	3	1	6	Unk	160-9191-A-3-A				
7	1007	3	1	7	Unk	160-9191-A-4				
8	1008	3	1	8	Unk	160-9191-B-9-A				
9	1009	3	1	9	Unk	160-9191-B-9-A SD	DF=5			
10	1010	3	1	10	Unk	160-9191-B-9-B MS				
11	1011	3	1	11	Unk	160-9191-B-9-C MS				
12	1012	3	1	12	Unk	160-9191-A-10-A				
13	1013	3	1	13	Unk	MB 160-159042/1-A				
14	1014	3	1	14	Unk	LCS 160-159042/2-				
15	1015	3	1	15	Unk	160-9209-D-1-A				
16	1016	3	2	1	Unk	160-9209-A-2-A				
17	1017	3	2	2	Unk	160-9209-B-3-A				
18	1018	3	2	3	Unk	160-9209-B-3-A SD	DF=5			
19	1019	3	2	4	Unk	160-9209-B-3-B MS				
20	1020	3	2	5	Unk	160-9209-B-3-C MS				
21	1021	3	2	6	Unk	160-9209-D-4-A	- All except Ca, Na			
22	1022	3	2	7	Unk	160-9209-A-5-A				
23	1023	3	2	8	Unk	160-9209-D-8-A	- All			
24	1024	3	2	9	Unk	160-9209-A-9-A				
25	1025	3	2	10	Unk	160-9209-A-10-A	- All except Ca			
26	1026	3	2	11	Unk	160-9209-A-11-A				
27	1027	3	2	12	Unk	160-9209-B-19-A	- All			
28	1028	3	2	13	Unk	160-9209-A-20-B				
29	1029	3	2	14	Unk	MB 160-160137/1-A				
30	1030	3	2	15	Unk	LCS 160-160137/2-				
31	1031	3	3	1	Unk	160-9438-D-1-A	DF=10			
32	1032	3	3	2	Unk	160-9438-D-1-A SD	DF=50			
33	1033	3	3	3	Unk	160-9438-D-1-B MS	DF=10			
34	1034	3	3	4	Unk	160-9438-D-1-C MS	DF=10			
35	1035	3	3	5	Unk	160-9438-C-2-A	DF=10			
36	1036	3	3	6	Unk	~~MB 160-159979/1-A~~				
37	1037	3	3	7	Unk	LCS 160-159979/2-				
38	1038	3	3	8	Unk	160-9438-F-1-B	DF=10			
39	1039	3	3	9	Unk	160-9438-F-1-B SD	DF=50			
40	1040	3	3	10	Unk	160-9438-F-1-C MS	DF=10			
41	1041	3	3	11	Unk	160-9438-F-1-D MS	DF=10			
42	1042	3	3	12	Unk	~~160-9438-F-2-B~~	~~DF=10~~			
43	1043	3	3	13	Unk	LB 160-157827/1-B				
44	1044	3	3	14	Unk	LCS 160-160503/2-				
45	1045	3	3	15	Unk	160-9451-B-1-B	DF=10			
46	1046	3	4	1	Unk	160-9451-B-1-B SD	DF=50			
47	1047	3	4	2	Unk	160-9451-B-1-C MS	DF=10			
48	1048	3	4	3	Unk	160-9451-B-1-D MS	DF=10			
49	1049	3	4	4	Unk	160-9451-B-2-B	DF=10			
50	1050	3	4	5	Unk	160-9451-B-3-B	DF=10			
51	1051	3	4	6	Unk	160-9451-B-4-B				
52	1052	3	4	7	Unk	MB 160-160195/1-A				
53	1053	3	4	8	Unk	LCSSRM 160-16019	DF=2			
54	1054	3	4	9	Unk	160-9613-A-1-E	DF=10			
55	1055	3	4	10	Unk	160-9613-A-1-E SD	DF=50			
56	1056	3	4	11	Unk	160-9613-A-1-F MS	DF=10			
57	1057	3	4	12	Unk	160-9613-A-1-G MS	DF=10			
58	1058	3	4	13	Unk	160-9613-A-2-C	DF=10			
59	1059	3	4	14	Unk	160-9613-A-3-C	DF=10			
60	1060	3	4	15	Unk	160-9613-A-4-C	DF=10			
61	1061	3	5	1	Unk	160-9613-A-5-C	DF=10			
62	1062	3	5	2	Unk	160-9613-A-6-C	DF=10			
63	1063	3	5	3	Unk	160-9613-A-7-C	DF=10			

	Pos ID	Rack	Row	Col	Type	Samplename	Comment	Custom ID1	Custom ID2	Custom ID3
64	1064	3	5	4	Unk	160-9613-A-8-C	DF=10			
65	1065	3	5	5	Unk	160-9613-A-9-C	DF=10			
66	1066	3	5	6	Unk	160-9613-A-10-C	DF=10			
67	1067	3	5	7	Unk	MB 160-159177/1-A				
68	1068	3	5	8	Unk	~~LCS 160-159177/2-~~	rerun			
69	1069	3	5	9	Unk	160-9422-B-1-A	DF=10			
70	1070	3	5	10	Unk	160-9422-B-2-A	DF=10			
71	1071	3	5	11	Unk	160-9422-B-3-A				
72	1072	3	5	12	Unk	160-9422-B-3-A SD	DF=5			
73	1073	3	5	13	Unk	160-9422-B-3-B MS				
74	1074	3	5	14	Unk	160-9422-B-3-C MS				
75	1075	3	5	15	Unk	160-9422-B-3-A PD				
76	1076	3	6	1	Unk	160-9422-B-4-A				
77	1077	3	6	2	Unk	160-9422-B-4-B MS				
78	1078	3	6	3	Unk	160-9422-B-4-C MS				
79	1079	3	6	4	Unk	160-9422-B-5-A				
80	1080	3	6	5	Unk	160-9422-B-6-A				
81	1081	3	6	6	Unk	160-9422-B-7-A				
82	1082	3	6	7	Unk	160-9422-B-8-A				
83	1083	3	6	8	Unk	160-9422-B-9-A				
84	1084	3	6	9	Unk	160-9422-B-10-A				
85	1085	3	6	10	Unk	160-9422-B-11-A				
86	1086	3	6	11	Unk	160-9422-B-12-A				
87	1087	3	6	12	Unk	160-9422-B-13-A				
88	1088	3	6	13	Unk	160-9422-B-14-A				
89	1089	3	6	14	Unk	160-9422-B-15-A				
90	1090	3	6	15	Unk	~~160-9422-B-16-A~~	~~DF=10~~			
91	2001	4	1	1	Unk	160-9422-B-17-A	DF=10			
92	2002	4	1	2	Unk	160-9422-B-18-A				
93	2003	4	1	3	Unk	MB 160-160135/1-A				
94	2004	4	1	4	Unk	LCS 160-160135/2-				
95	2005	4	1	5	Unk	LCSD 160-160135/3				
96	2006	4	1	6	Unk	160-9422-B-16-H	DF=10			
97	2007	4	1	7	Unk	160-9422-B-16-H S	DF=50			
98	2008	4	1	8	Unk	160-9422-B-16-H P	DF=10			
99	2009	4	1	9	Unk	160-9422-B-19-E	DF=10			
100	2010	4	1	10	Unk	~~160-9422-B-20-C~~	~~DF=10~~			
101	2011	4	1	11	Unk	160-9422-B-21-C	DF=10			
102	2012	4	1	12	Unk	160-9422-B-22-C	DF=10			
103	2013	4	1	13	Unk	~~MB~~				
104	2014	4	1	14	Unk	LCS				
105	2015	4	1	15	Unk	LCSD				
106	2016	4	2	1	Unk	~~9216-A-1~~				
107	2017	4	2	2	Unk	~~9216-A-2~~				
108	2018	4	2	3	Unk	~~9216-A-3~~				
109	2019	4	2	4	Unk	MB257FE				
110	2020	4	2	5	Unk	LCS257FE				
111	2021	4	2	6	Unk	LCSD257FE				
112	2022	4	2	7	Unk	9275-A-2FE				
113	2023	4	2	8	Unk	9275-A-3FE				
114	2024	4	2	9	Unk	~~MB258NI~~				
115	2025	4	2	10	Unk	LCS258NI				
116	2026	4	2	11	Unk	LCSD258NI				
117	2027	4	2	12	Unk	~~9275-A-2NI~~				
118	2028	4	2	13	Unk	~~9275-A-3NI~~				

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	0.000289	1.796017	0.000000	1.000000
Al 396.152 { 85}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	-0.000565	0.202280	0.000000	1.000000
As 189.042 {478}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	0.000061	0.123605	0.000000	1.000000
B 249.678 {135}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	0.000932	0.157713	0.000000	1.000000
Ba 455.403 { 74}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	0.021750	14.153738	0.000000	1.000000
Be 313.042 {108}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	0.001123	17.762098	0.000000	1.000000
Bi 223.061 {451}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	0.000309	0.111416	0.000000	1.000000
Ca 184.006 {483}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	-0.002531	0.234033	0.000000	1.000000
Cd 228.802 {447}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	-0.000107	1.789296	0.000000	1.000000
Co 228.616 {448}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	0.000095	0.755573	0.000000	1.000000
Cr 283.563 {119}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	0.001408	0.270685	0.000000	1.000000
Cu 217.894 {455}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	0.000002	0.148174	0.000000	1.000000
Fe 259.940 {130}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	0.000361	0.292923	0.000000	1.000000
K 766.490 { 44}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	-0.002426	0.142828	0.000000	1.000000
Li 670.784 { 50}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	-0.014319	4.000402	0.000000	1.000000
Mg 279.806 {121}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	-0.001880	0.050525	0.000000	1.000000
Mn 257.610 {131}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	0.000202	1.879556	0.000000	1.000000
Mo 202.030 {467}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	-0.000190	0.818783	0.000000	1.000000
Na 589.592 { 57}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	-0.039517	0.481997	0.000000	1.000000
Ni 221.647 {452}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	0.000174	1.155643	0.000000	1.000000
P 177.495 {490}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	0.000083	0.138895	0.000000	1.000000
Pb 220.353 {453}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	-0.000449	0.226334	0.000000	1.000000
S 182.034 {485}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	-0.000216	0.060188	0.000000	1.000000
Sb 206.833 {463}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	-0.000360	0.134980	0.000000	1.000000
Se 196.090 {472}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	0.000083	0.083166	0.000000	1.000000
Si 251.611 {134}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	0.002325	0.088959	0.000000	1.000000
Sn 189.989 {478}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	0.000080	0.273595	0.000000	1.000000
Sr 407.771 { 83}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	-0.003506	21.897175	0.000000	1.000000
Th 283.231 {119}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	0.003281	0.172760	0.000000	1.000000
Ti 334.941 {101}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	0.003707	1.379892	0.000000	1.000000
Tl 190.856 {477}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	-0.000457	0.168198	0.000000	1.000000
U 367.007 { 92}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	0.010817	0.101915	0.000000	1.000000
V 290.882 {116}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	-0.000915	0.300445	0.000000	1.000000
Y 371.030 { 91}*	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	1.000000	0.000000	0.000000	1.000000
Zn 213.856 {458}	12/5/2014 12:26:29	12/5/2014 12:26:29	Linear	1/Conc	0.000612	1.050718	0.000000	1.000000

Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.999891	0.000204	0.000523	0.001745	OK.	1.000000	0.000000	1	0
Al 396.152 { 85}	0.999984	0.000281	0.007455	0.024849	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999636	0.000058	0.000902	0.003006	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999212	0.000344	0.002832	0.009439	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	1.000000	0.000209	0.000142	0.000473	OK.	1.000000	0.000000	1	0
Be 313.042 {108}	0.999901	0.003057	0.000037	0.000124	OK.	1.000000	0.000000	1	0
Bi 223.061 {451}	0.999553	0.000260	0.001706	0.005688	OK.	1.000000	0.000000	1	0
Ca 184.006 {483}	0.999164	0.005258	0.000460	0.001534	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.999600	0.000625	0.000103	0.000345	OK.	1.000000	0.000000	1	0
Co 228.616 {448}	0.999255	0.001134	0.000191	0.000638	OK.	1.000000	0.000000	1	0
Cr 283.563 {119}	0.999632	0.000128	0.000685	0.002283	OK.	1.000000	0.000000	1	0
Cu 217.894 {455}	0.999559	0.000121	0.001178	0.003926	OK.	1.000000	0.000000	1	0
Fe 259.940 {130}	0.999955	0.000479	0.001511	0.005037	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999995	0.000544	0.022389	0.074631	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999993	0.000577	0.000827	0.002755	OK.	1.000000	0.000000	1	0
Mg 279.806 {121}	0.999975	0.000195	0.010221	0.034070	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999908	0.000540	0.000252	0.000840	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999633	0.000346	0.000164	0.000547	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	1.000000	0.000206	0.006905	0.023018	OK.	1.000000	0.000000	1	0
Ni 221.647 {452}	0.999246	0.001557	0.000178	0.000592	OK.	1.000000	0.000000	1	0
P 177.495 {490}	0.998913	0.001775	0.000750	0.002501	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.999290	0.000148	0.000778	0.002592	OK.	1.000000	0.000000	1	0
S 182.034 {485}	0.999784	0.001557	0.001698	0.005659	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999736	0.000025	0.001255	0.004183	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.999685	0.000020	0.001523	0.005076	OK.	1.000000	0.000000	1	0
Si 251.611 {134}	1.000000	0.000008	0.005179	0.017263	OK.	1.000000	0.000000	1	0
Sn 189.989 {478}	0.999375	0.000531	0.000354	0.001179	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999991	0.001162	0.000058	0.000193	OK.	1.000000	0.000000	1	0
Th 283.231 {119}	0.999689	0.000336	0.002516	0.008386	OK.	1.000000	0.000000	1	0
Ti 334.941 {101}	0.999986	0.000178	0.000640	0.002133	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.998924	0.000085	0.000767	0.002556	OK.	1.000000	0.000000	1	0
U 367.007 { 92}	0.999589	0.000429	0.010669	0.035563	OK.	1.000000	0.000000	1	0
V 290.882 {116}	0.999915	0.000152	0.002455	0.008182	OK.	1.000000	0.000000	1	0
Y 371.030 { 91}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 213.856 {458}	0.999450	0.000857	0.000105	0.000350	OK.	1.000000	0.000000	1	0

Sample Name: CALBLK1 Acquired: 12/5/2014 12:11:09 Type: Cal
Method: 2014v4(v7) Mode: IR Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.0003	-.0006	.0001	.0009	.0217	.0011	.0003	-.0026	-.0001
Stddev	.0003	.0012	.0001	.0004	.0020	.0005	.0001	.0002	.0002
%RSD	106.0	215.6	99.37	37.74	9.203	47.81	34.96	6.098	146.2
#1	.0006	-.0019	.0001	.0008	.0205	.0014	.0004	-.0027	.0000
#2	.0000	-.0002	.0000	.0007	.0241	.0005	.0003	-.0026	-.0001
#3	.0003	.0004	.0000	.0013	.0206	.0015	.0002	-.0024	-.0003

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.0001	.0014	.0000	.0004	-.0024	-.0143	-.0019	.0002	-.0002
Stddev	.0001	.0001	.0000	.0002	.0007	.0025	.0006	.0004	.0002
%RSD	120.3	10.54	2698.	51.98	27.28	17.36	33.54	221.6	80.39
#1	.0000	.0015	.0000	.0004	-.0024	-.0115	-.0012	.0001	-.0003
#2	.0002	.0012	.0000	.0002	-.0018	-.0160	-.0020	.0007	-.0002
#3	.0001	.0015	.0000	.0005	-.0031	-.0156	-.0024	-.0002	.0000

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.0395	.0002	.0001	-.0004	-.0002	-.0004	.0001	.0023	.0001
Stddev	.0062	.0001	.0000	.0001	.0001	.0001	.0000	.0003	.0000
%RSD	15.60	64.44	42.34	22.19	25.96	35.63	18.23	13.07	38.90
#1	-.0400	.0002	.0001	-.0005	-.0002	-.0005	.0001	.0025	.0000
#2	-.0331	.0003	.0001	-.0003	-.0002	-.0004	.0001	.0020	.0001
#3	-.0454	.0001	.0001	-.0005	-.0003	-.0002	.0001	.0025	.0001

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.0035	.0033	.0037	-.0005	.0108	-.0009	.0006
Stddev	.0009	.0004	.0006	.0001	.0008	.0009	.0001
%RSD	24.87	12.77	15.02	26.43	7.145	97.33	11.27
#1	-.0038	.0030	.0036	-.0003	.0113	-.0005	.0005
#2	-.0042	.0038	.0043	-.0005	.0113	-.0019	.0006
#3	-.0025	.0030	.0032	-.0006	.0099	-.0003	.0007

Sample Name: CALBLK1 Acquired: 12/5/2014 12:11:09 Type: Cal
Method: 2014v4(v7) Mode: IR Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_3710
Units	Cts/S
Avg	4509.6
Stddev	30.3
%RSD	.67268
#1	4475.4
#2	4533.1
#3	4520.3

Sample Name: CAL 1 Acquired: 12/5/2014 12:15:05 Type: Cal
Method: 2014v4(v7) Mode: IR Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.0180	.0389	.0013	.0091	.7341	.0924	.0234	.2602	.0089
Stddev	.0008	.0005	.0000	.0003	.0021	.0011	.0001	.0005	.0001
%RSD	4.431	1.349	2.515	3.139	.2907	1.226	.3641	.1970	1.129
#1	.0188	.0393	.0012	.0090	.7329	.0911	.0233	.2607	.0090
#2	.0172	.0392	.0013	.0095	.7328	.0928	.0235	.2597	.0088
#3	.0180	.0383	.0013	.0090	.7365	.0933	.0234	.2603	.0090

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.0419	.0036	.0042	.0305	.7057	.1908	.0473	.0292	.0340
Stddev	.0001	.0001	.0001	.0003	.0016	.0028	.0010	.0007	.0002
%RSD	.2766	3.864	2.022	1.108	.2250	1.480	2.100	2.268	.5329
#1	.0418	.0037	.0043	.0308	.7039	.1876	.0470	.0295	.0338
#2	.0419	.0035	.0042	.0302	.7067	.1917	.0484	.0285	.0341
#3	.0420	.0037	.0041	.0304	.7065	.1930	.0465	.0298	.0341

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.4391	.0511	.0356	.0024	.3027	.0009	.0013	.0381	.0295
Stddev	.0021	.0001	.0002	.0001	.0007	.0002	.0001	.0007	.0001
%RSD	.4856	.2254	.6745	4.178	.2147	20.49	9.831	1.769	.4974
#1	.4366	.0513	.0358	.0025	.3022	.0008	.0015	.0378	.0293
#2	.4400	.0511	.0354	.0023	.3025	.0008	.0012	.0376	.0295
#3	.4406	.0511	.0355	.0023	.3035	.0011	.0013	.0388	.0296

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.1108	.0370	.0305	.0033	.0678	.0148	.0225
Stddev	.0020	.0002	.0003	.0001	.0013	.0005	.0001
%RSD	1.766	.4538	1.062	1.656	1.908	3.342	.6238
#1	.1131	.0371	.0302	.0033	.0675	.0147	.0223
#2	.1097	.0368	.0308	.0033	.0668	.0143	.0225
#3	.1097	.0372	.0304	.0032	.0693	.0153	.0226

Sample Name: CAL 1 Acquired: 12/5/2014 12:15:05 Type: Cal
Method: 2014v4(v7) Mode: IR Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_3710
Units	Cts/S
Avg	4663.8
Stddev	14.0
%RSD	.30042
#1	4669.2
#2	4674.3
#3	4647.9

Sample Name: Cal 2 Acquired: 12/5/2014 12:18:59 Type: Cal
Method: 2014v4(v7) Mode: IR Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1.817**	**10.03**	**.6413**	**.7973**	**70.79**	**90.61**	**.5806**	**12.35**	**9.383**
Stddev	.018	.01	.0043	.0017	.64	.76	.0040	.10	.066
%RSD	.9772	.0645	.6648	.2079	.8997	.8419	.6965	.7763	.7004
#1	1.797	10.04	.6364	.7989	71.35	89.94	.5760	12.24	9.307
#2	1.823	10.03	.6440	.7956	70.91	90.45	.5834	12.40	9.422
#3	1.832	10.03	.6435	.7974	70.10	91.44	.5825	12.41	9.420

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3.990**	**1.411**	**.7714**	**14.84**	**7.114**	**19.89**	**2.549**	**9.577**	**.8491**
Stddev	.029	.011	.0048	.05	.014	.09	.020	.035	.0040
%RSD	.7152	.7592	.6278	.3372	.1995	.4704	.7995	.3670	.4761
#1	3.957	1.398	.7659	14.81	7.127	19.99	2.529	9.548	.8445
#2	4.008	1.416	.7751	14.81	7.099	19.86	2.547	9.567	.8516
#3	4.004	1.418	.7731	14.90	7.116	19.81	2.570	9.616	.8514

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**24.08**	**6.092**	**7.403**	**1.192**	**3.098**	**.1436**	**.0859**	**.4470**	**1.435**
Stddev	.10	.042	.053	.007	.017	.0006	.0004	.0022	.010
%RSD	.4296	.6865	.7161	.5985	.5416	.4395	.5143	.4914	.6717
#1	24.19	6.043	7.342	1.184	3.079	.1429	.0854	.4446	1.424
#2	24.05	6.116	7.436	1.196	3.111	.1440	.0863	.4473	1.440
#3	24.00	6.116	7.431	1.197	3.105	.1438	.0861	.4489	1.441

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**110.1**	**.8979**	**6.954**	**.1761**	**.6374**	**1.528**	**5.520**
Stddev	.6	.0097	.005	.0014	.0030	.001	.037
%RSD	.5229	1.083	.0748	.8227	.4751	.0873	.6741
#1	110.4	.8866	6.951	.1745	.6340	1.529	5.477
#2	110.5	.9038	6.951	.1768	.6381	1.529	5.541
#3	109.5	.9032	6.960	.1771	.6399	1.527	5.543

Sample Name: Cal 2 Acquired: 12/5/2014 12:18:59 Type: Cal
Method: 2014v4(v7) Mode: IR Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_3710
Units	Cts/S
Avg	4317.3
Stddev	31.6
%RSD	.73231
#1	4350.6
#2	4313.7
#3	4287.6

Sample Name: Cal 3 Acquired: 12/5/2014 12:22:48 Type: Cal
Method: 2014v4(v7) Mode: IR Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3.523**	**20.31**	**1.212**	**1.574**	**141.6**	**175.9**	**1.090**	**22.72**	**17.68**
Stddev	.013	.04	.006	.003	1.9	1.3	.006	.08	.08
%RSD	.3599	.2208	.5317	.1920	1.307	.7118	.5433	.3558	.4623
#1	3.514	20.33	1.207	1.574	143.7	175.6	1.086	22.64	17.61
#2	3.517	20.34	1.209	1.577	140.7	174.8	1.088	22.74	17.66
#3	3.537	20.26	1.219	1.571	140.3	177.3	1.097	22.80	17.77

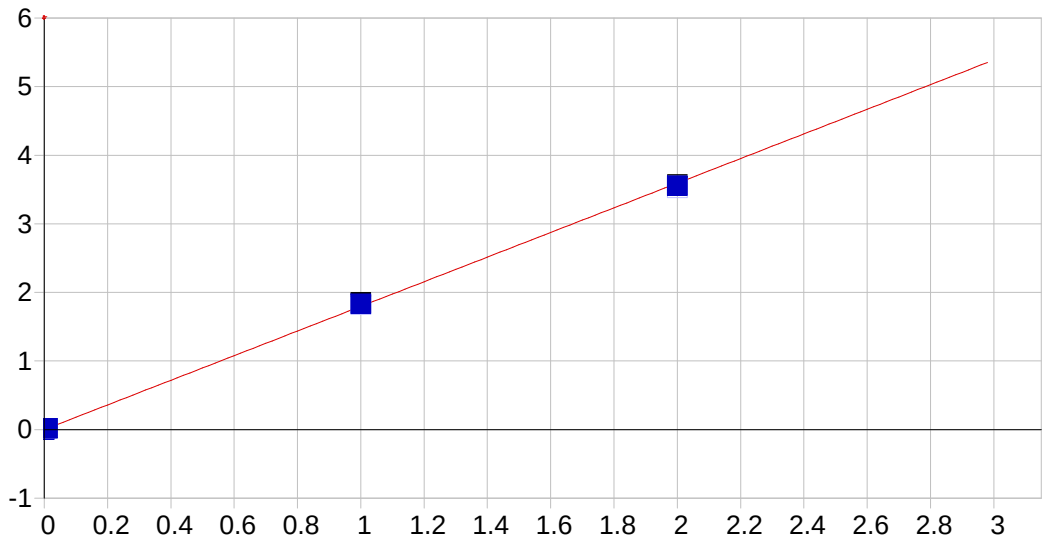
Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**7.366**	**2.664**	**1.451**	**29.10**	**14.31**	**40.08**	**5.028**	**18.62**	**1.605**
Stddev	.041	.017	.007	.03	.01	.12	.018	.03	.011
%RSD	.5562	.6432	.4560	.1034	.1017	.2997	.3514	.1505	.7056
#1	7.328	2.646	1.446	29.09	14.31	40.18	5.008	18.58	1.598
#2	7.360	2.665	1.448	29.07	14.33	40.12	5.033	18.64	1.600
#3	7.410	2.680	1.458	29.13	14.30	39.95	5.042	18.63	1.618

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**48.14**	**11.24**	**13.43**	**2.205**	**5.927**	**.2740**	**.1629**	**.8919**	**2.667**
Stddev	.15	.06	.06	.015	.031	.0013	.0007	.0027	.018
%RSD	.3063	.5428	.4368	.6719	.5245	.4577	.4410	.3074	.6686
#1	48.31	11.19	13.37	2.193	5.907	.2729	.1627	.8919	2.653
#2	48.10	11.22	13.43	2.201	5.912	.2737	.1623	.8946	2.660
#3	48.02	11.31	13.49	2.222	5.963	.2754	.1637	.8892	2.687

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**218.3**	**1.701**	**13.75**	**.3207**	**1.193**	**2.976**	**10.30**
Stddev	3.4	.002	.02	.0016	.003	.002	.06
%RSD	1.568	.1269	.1364	.4979	.2146	.0657	.6060
#1	217.4	1.701	13.77	.3190	1.192	2.975	10.24
#2	215.4	1.699	13.76	.3210	1.192	2.978	10.28
#3	222.1	1.703	13.73	.3222	1.196	2.975	10.37

Sample Name: Cal 3 Acquired: 12/5/2014 12:22:48 Type: Cal
Method: 2014v4(v7) Mode: IR Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_3710
Units	Cts/S
Avg	4359.5
Stddev	33.8
%RSD	.77482
#1	4390.5
#2	4364.5
#3	4323.5

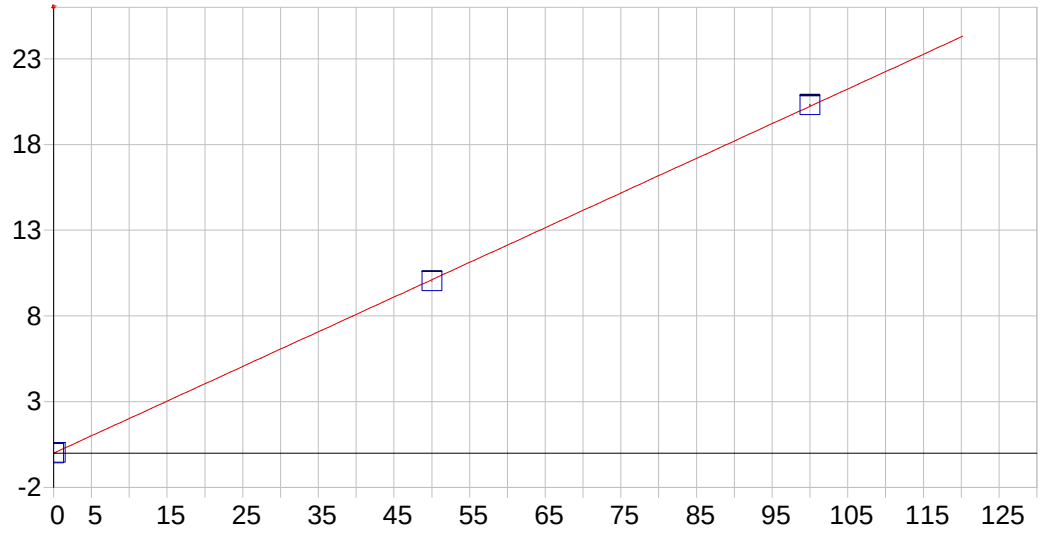


Ag 328.068 {103}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000289	Re-Slope:	1.000000
A1 (Gain):	1.796017	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999891	Status:	OK.
Std Error of Est:	0.000204		
Predicted MDL:	0.000523		
Predicted MQL:	0.001745		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00029	.000	1
CAL 1	.01000	.01023	.000	2.26	.01801	.001	1
Cal 2	1.0000	1.0206	.021	2.06	1.8173	.018	1
Cal 3	2.0000	1.9792	-.021	-1.04	3.5229	.013	1



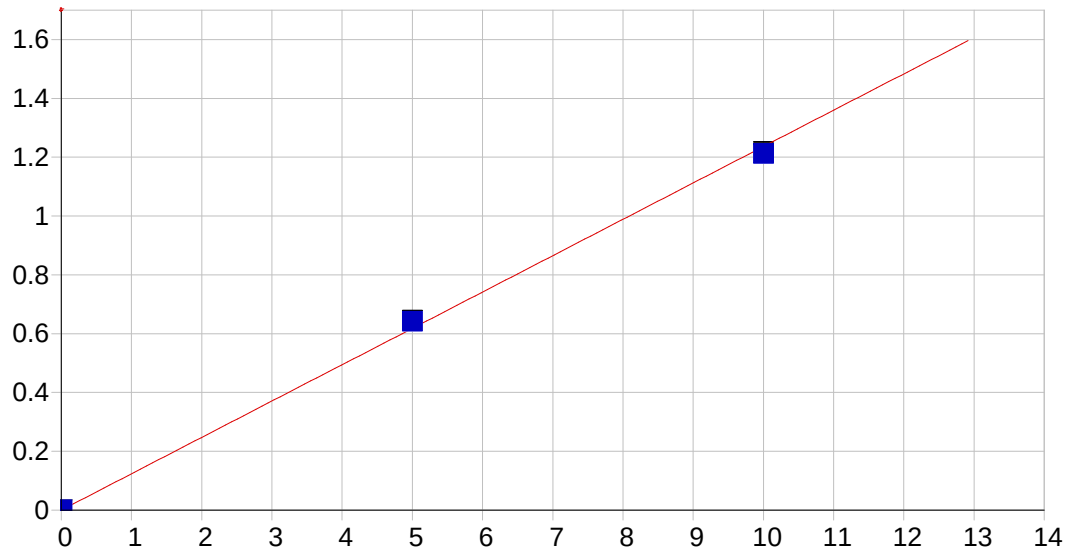
Al 396.152 { 85}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000565	Re-Slope:	1.000000

A1 (Gain):	0.202280	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999984	Status:	OK.
Std Error of Est:	0.000281		
Predicted MDL:	0.007455		
Predicted MQL:	0.024849		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00001	.000	.000	-.00056	.001	1
CAL 1	.20000	.19520	-.005	-2.40	.03892	.001	1
Cal 2	50.000	49.605	-.395	-.789	10.034	.006	1
Cal 3	100.00	100.40	.399	.399	20.308	.045	1

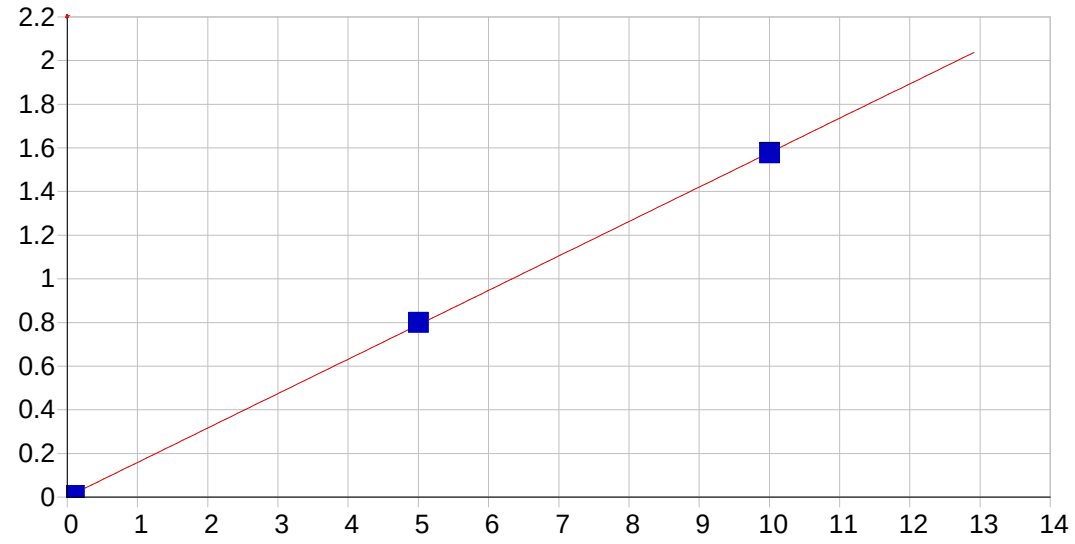


As 189.042 {478}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000061	Re-Slope:	1.000000
A1 (Gain):	0.123605	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999636	Status:	OK.
Std Error of Est:	0.000058		
Predicted MDL:	0.000902		
Predicted MQL:	0.003006		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00006	.000	1
CAL 1	.01000	.00987	.000	-1.29	.00128	.000	1
Cal 2	5.0000	5.1907	.191	3.81	.64127	.004	1
Cal 3	10.000	9.8094	-.191	-1.91	1.2118	.006	1

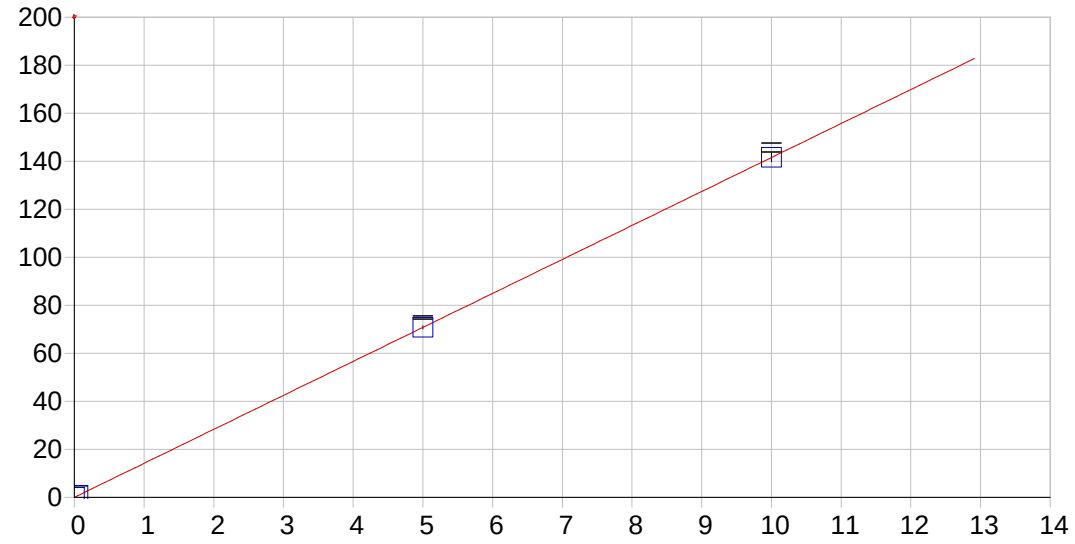


B 249.678 {135}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000932	Re-Slope:	1.000000
A1 (Gain):	0.157713	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999212	Status:	OK.
Std Error of Est:	0.000344		
Predicted MDL:	0.002832		
Predicted MQL:	0.009439		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00005	.000	.000	.00094	.000	1
CAL 1	.10000	.05201	-.048	-48.0	.00915	.000	1
Cal 2	5.0000	5.0585	.058	1.17	.79731	.002	1
Cal 3	10.000	9.9896	-.010	-.104	1.5736	.003	1



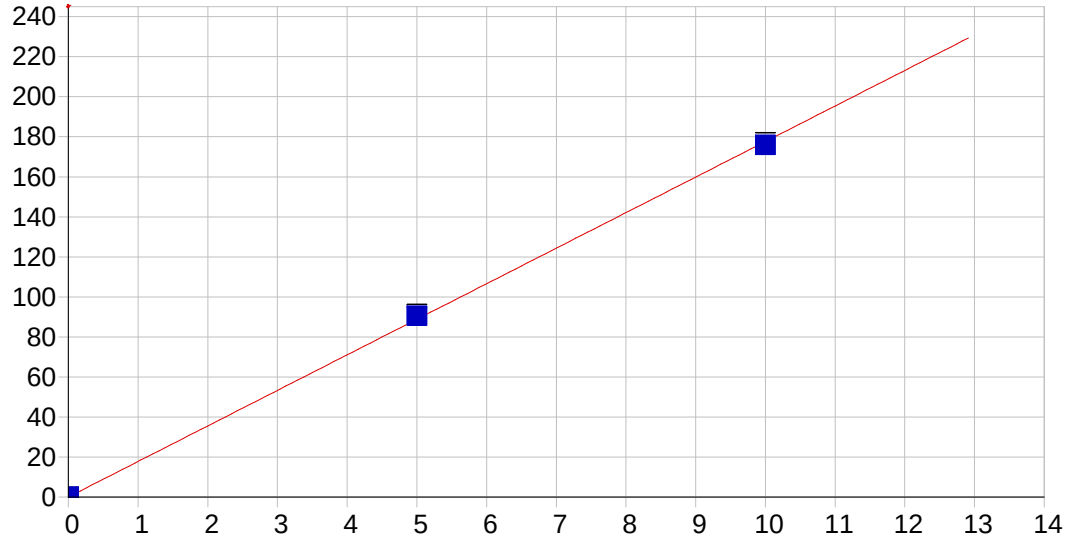
Ba 455.403 { 74}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.021750	Re-Slope:	1.000000
A1 (Gain):	14.153738	Y-int:	0.000000

A2 (Curvature):	0.000000					
n (Exponent):	1.000000					
Correlation:	1.000000		Status:	OK.		
Std Error of Est:	0.000209					
Predicted MDL:	0.000142					
Predicted MQL:	0.000473					

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.02175	.002	1
CAL 1	.05000	.05033	.000	.657	.73409	.002	1
Cal 2	5.0000	4.9997	.000	-.006	70.786	.637	1
Cal 3	10.000	10.0000	.000	.000	141.56	1.85	1

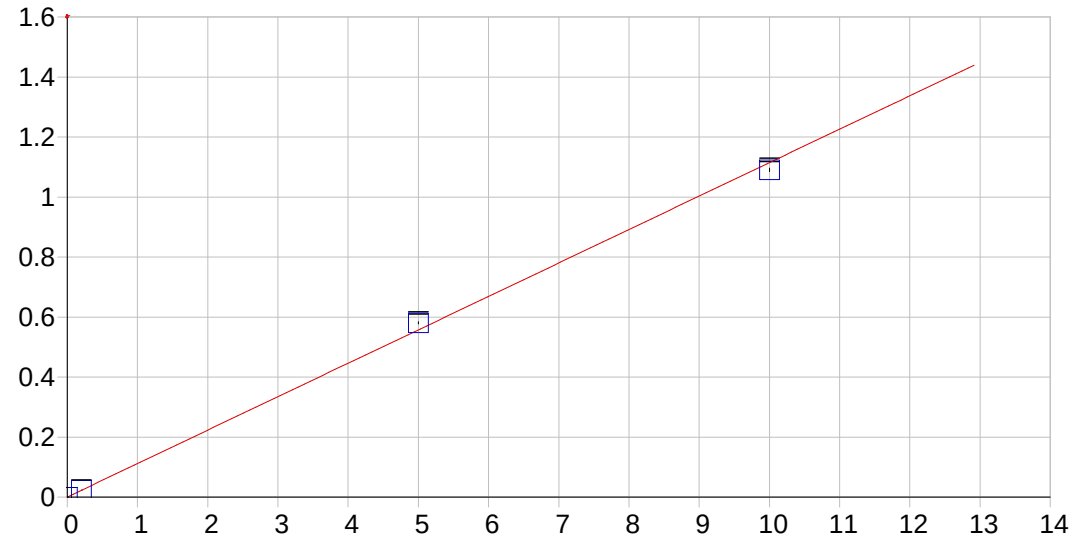


Be 313.042 {108}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.001123	Re-Slope:	1.000000
A1 (Gain):	17.762098	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999901	Status:	OK.
Std Error of Est:	0.003057		
Predicted MDL:	0.000037		
Predicted MQL:	0.000124		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00112	.001	1
CAL 1	.00500	.00512	.000	2.38	.09238	.001	1
Cal 2	5.0000	5.0993	.099	1.99	90.609	.763	1
Cal 3	10.000	9.9005	-.099	-.995	175.92	1.25	1

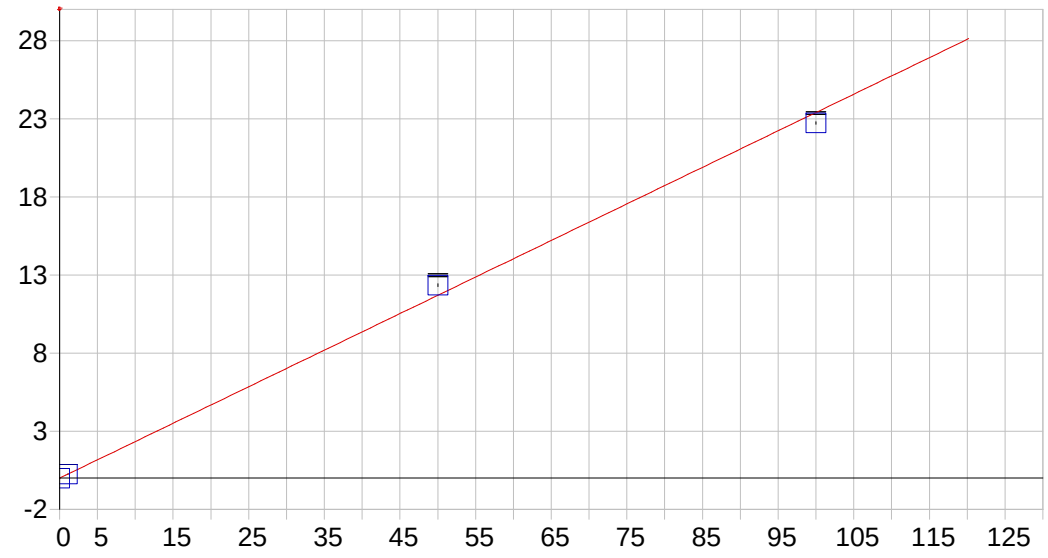


Bi 223.061 {451}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000309	Re-Slope:	1.000000
A1 (Gain):	0.111416	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999553	Status:	OK.
Std Error of Est:	0.000260		
Predicted MDL:	0.001706		
Predicted MQL:	0.005688		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	-.00001	.000	.000	.00031	.000	1
CAL 1	.20000	.20719	.007	3.59	.02339	.000	1
Cal 2	5.0000	5.2085	.209	4.17	.58062	.004	1
Cal 3	10.000	9.7843	-.216	-2.16	1.0904	.006	1



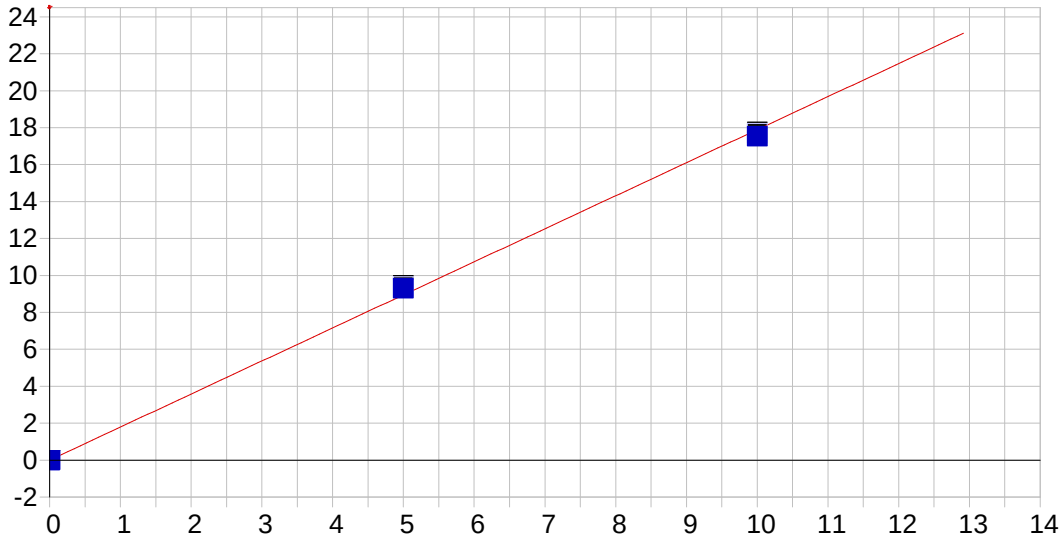
Ca 184.006 {483}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.002531	Re-Slope:	1.000000
A1 (Gain):	0.234033	Y-int:	0.000000

A2 (Curvature):		0.000000					
n (Exponent):		1.000000					
Correlation:		0.999164		Status:	OK.		
Std Error of Est:		0.005258					
Predicted MDL:		0.000460					
Predicted MQL:		0.001534					

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	-.00015	.000	.000	-.00257	.000	1
CAL 1	1.0000	1.1228	.123	12.3	.26025	.001	1
Cal 2	50.000	52.773	2.77	5.55	12.348	.096	1
Cal 3	100.00	97.105	-2.90	-2.90	22.723	.081	1

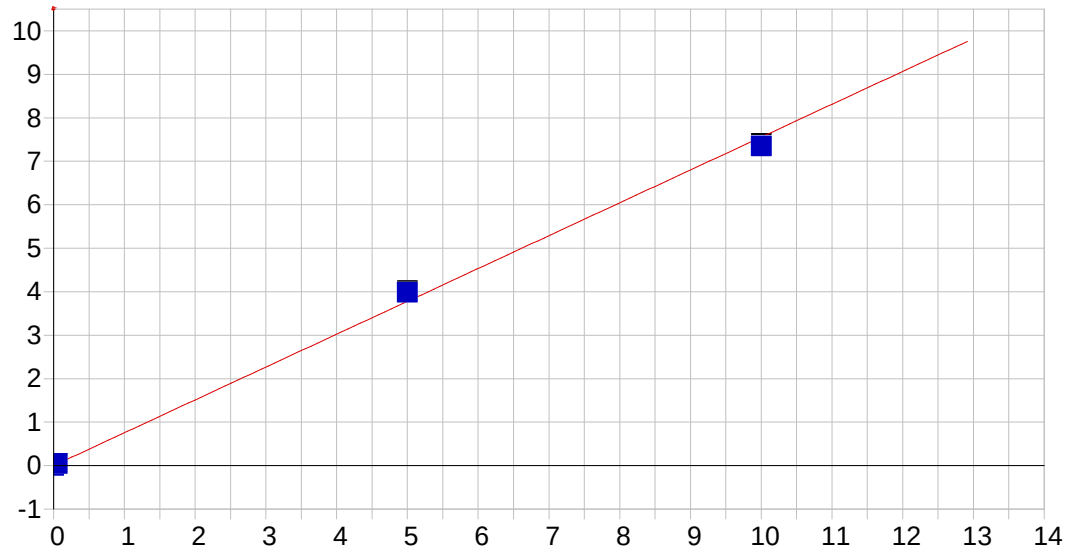


Cd 228.802 {447}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000107	Re-Slope:	1.000000
A1 (Gain):	1.789296	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999600	Status:	OK.
Std Error of Est:	0.000625		
Predicted MDL:	0.000103		
Predicted MQL:	0.000345		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	-.00011	.000	1
CAL 1	.00500	.00502	.000	.359	.00893	.000	1
Cal 2	5.0000	5.2018	.202	4.04	9.3829	.066	1
Cal 3	10.000	9.7982	-.202	-2.02	17.683	.082	1

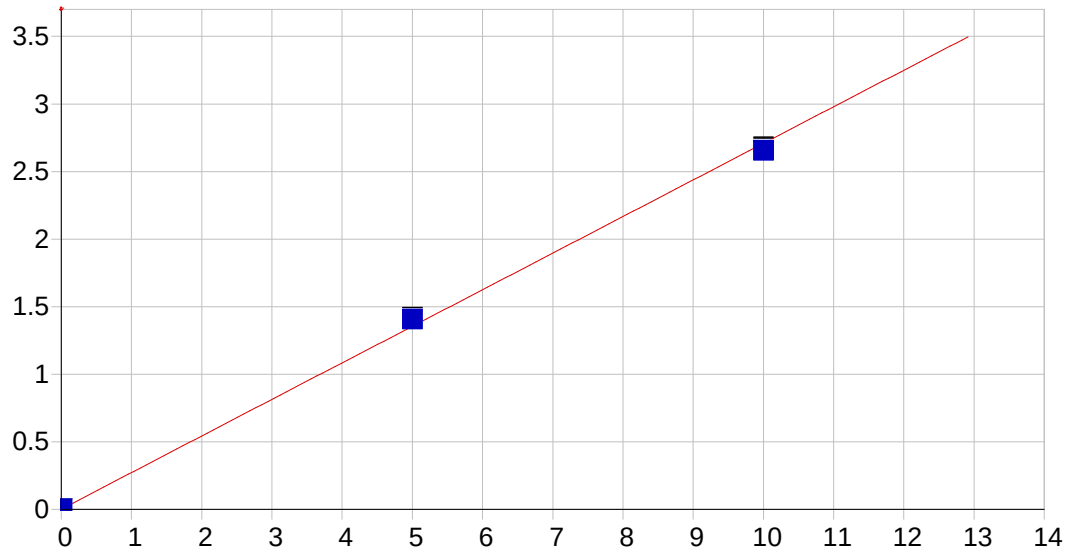


Co 228.616 {448}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000095	Re-Slope:	1.000000
A1 (Gain):	0.755573	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999255	Status:	OK.
Std Error of Est:	0.001134		
Predicted MDL:	0.000191		
Predicted MQL:	0.000638		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	-.00001	.000	.000	.00009	.000	1
CAL 1	.05000	.05527	.005	10.5	.04189	.000	1
Cal 2	5.0000	5.2690	.269	5.38	3.9898	.029	1
Cal 3	10.000	9.7257	-.274	-2.74	7.3658	.041	1



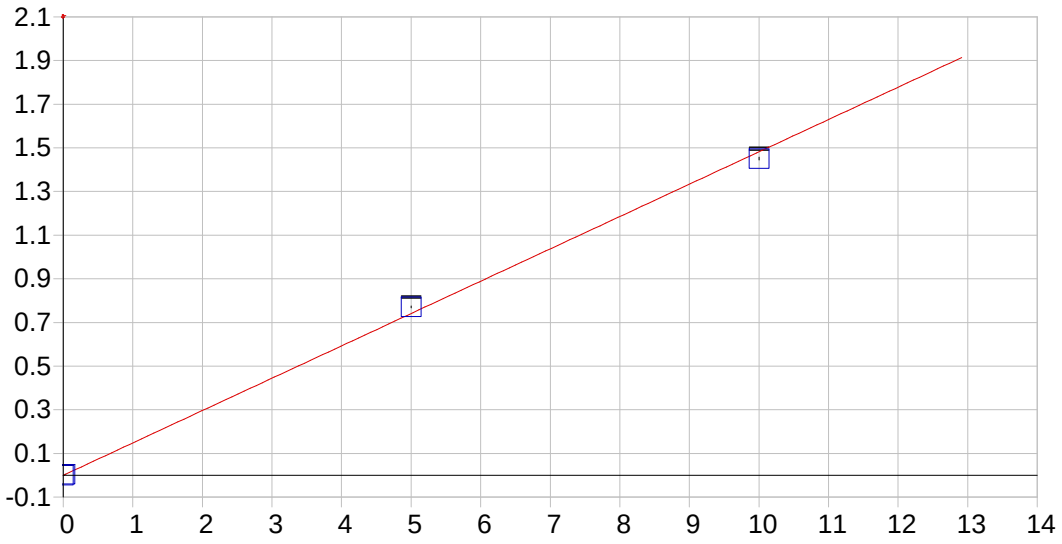
Cr 283.563 {119}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.001408	Re-Slope:	1.000000
A1 (Gain):	0.270685	Y-int:	0.000000

A2 (Curvature):	0.000000					
n (Exponent):	1.000000					
Correlation:	0.999632		Status:	OK.		
Std Error of Est:	0.000128					
Predicted MDL:	0.000685					
Predicted MQL:	0.002283					

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00141	.000	1
CAL 1	.01000	.01004	.000	.352	.00362	.000	1
Cal 2	5.0000	5.1925	.193	3.85	1.4107	.011	1
Cal 3	10.000	9.8075	-.193	-1.93	2.6637	.017	1

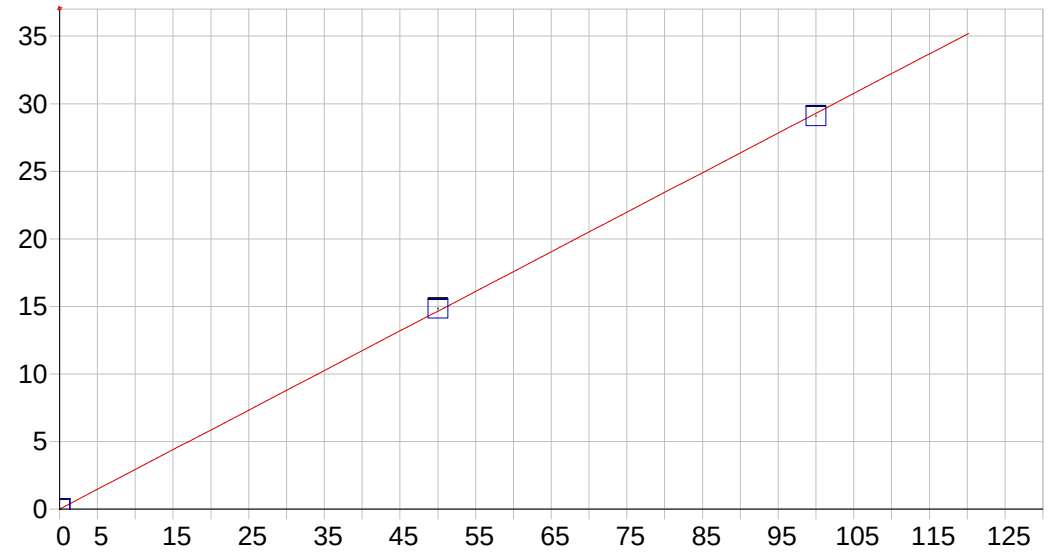


Cu 217.894 {455}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000002	Re-Slope:	1.000000
A1 (Gain):	0.148174	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999559	Status:	OK.
Std Error of Est:	0.000121		
Predicted MDL:	0.001178		
Predicted MQL:	0.003926		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00000	.000	1
CAL 1	.02500	.02825	.003	13.0	.00419	.000	1
Cal 2	5.0000	5.2058	.206	4.12	.77136	.005	1
Cal 3	10.000	9.7910	-.209	-2.09	1.4508	.007	1

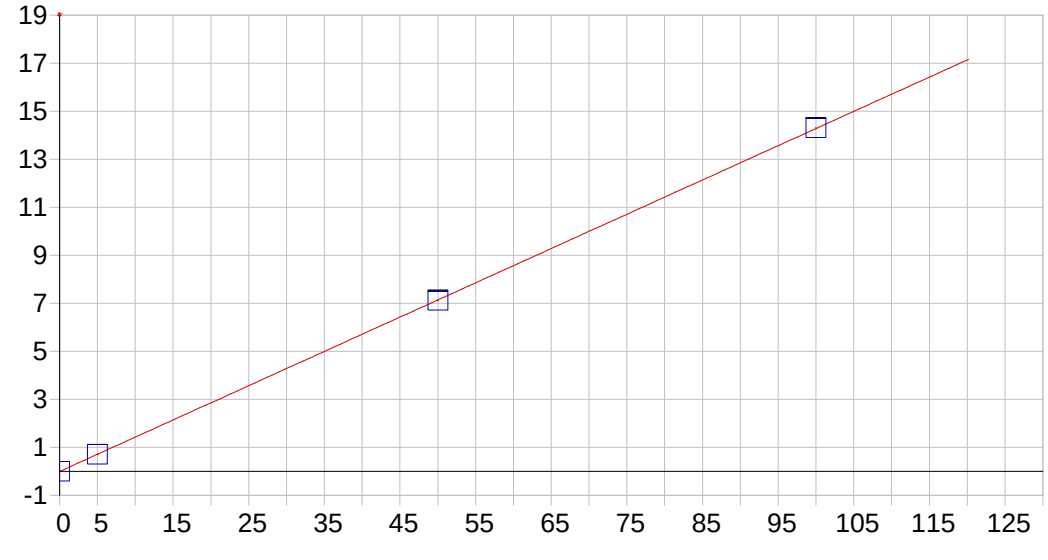


Fe 259.940 {130}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000361	Re-Slope:	1.000000
A1 (Gain):	0.292923	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999955	Status:	OK.
Std Error of Est:	0.000479		
Predicted MDL:	0.001511		
Predicted MQL:	0.005037		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00036	.000	1
CAL 1	.10000	.10284	.003	2.84	.03048	.000	1
Cal 2	50.000	50.665	.665	1.33	14.841	.050	1
Cal 3	100.00	99.332	-.668	-.668	29.097	.030	1



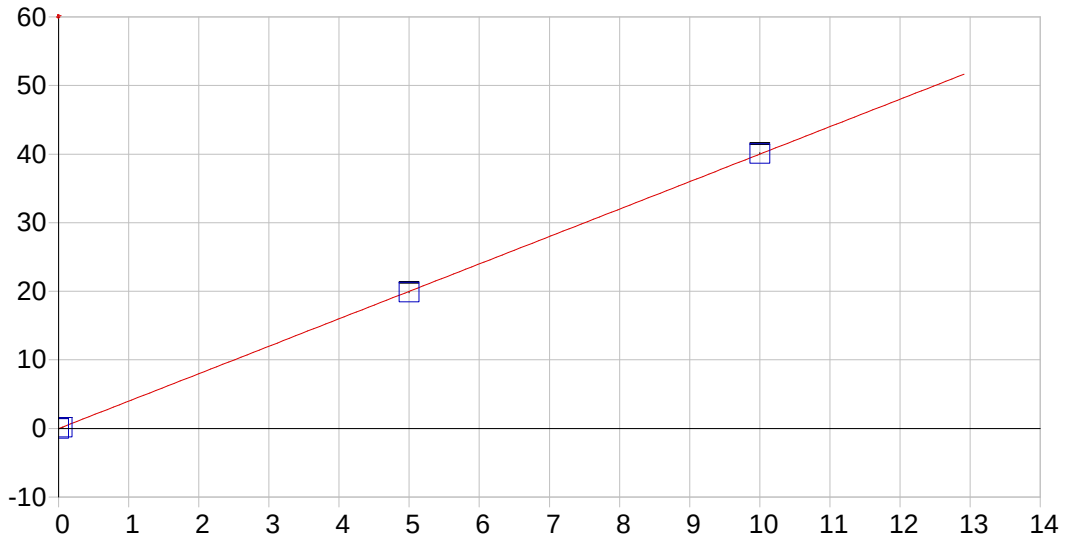
K 766.490 { 44}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.002426	Re-Slope:	1.000000
A1 (Gain):	0.142828	Y-int:	0.000000

A2 (Curvature):		0.000000					
n (Exponent):		1.000000					
Correlation:		0.999995		Status:	OK.		
Std Error of Est:		0.000544					
Predicted MDL:		0.022389					
Predicted MQL:		0.074631					

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00005	.000	.000	-.00242	.001	1
CAL 1	5.0000	4.9578	-.042	-.845	.70568	.002	1
Cal 2	50.000	49.824	-.176	-.352	7.1138	.014	1
Cal 3	100.00	100.22	.218	.218	14.312	.015	1

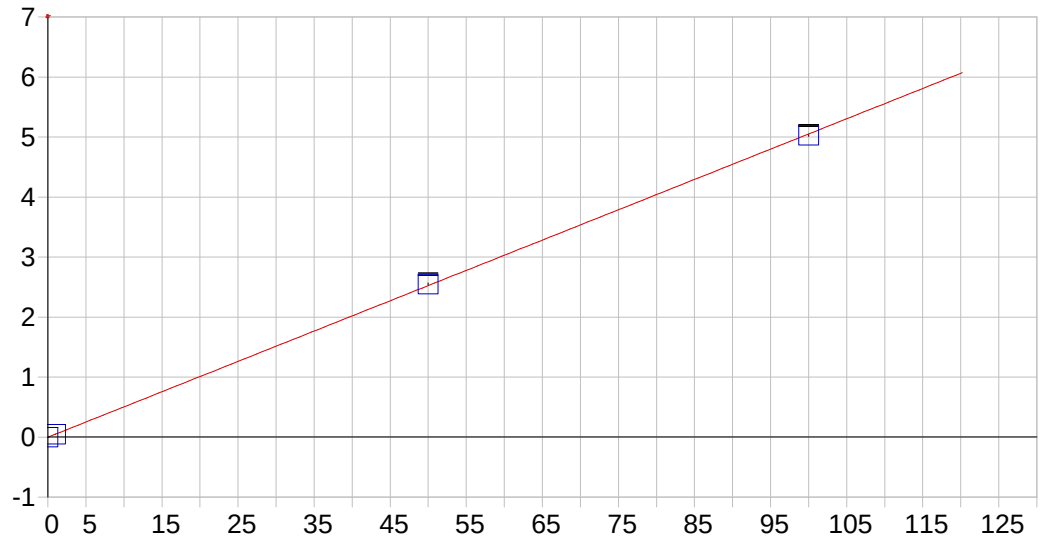


Li 670.784 { 50}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.014319	Re-Slope:	1.000000
A1 (Gain):	4.000402	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999993	Status:	OK.
Std Error of Est:	0.000577		
Predicted MDL:	0.000827		
Predicted MQL:	0.002755		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	-.01432	.002	1
CAL 1	.05000	.05126	.001	2.53	.19076	.003	1
Cal 2	5.0000	4.9753	-.025	-.493	19.889	.094	1
Cal 3	10.000	10.023	.023	.234	40.083	.120	1

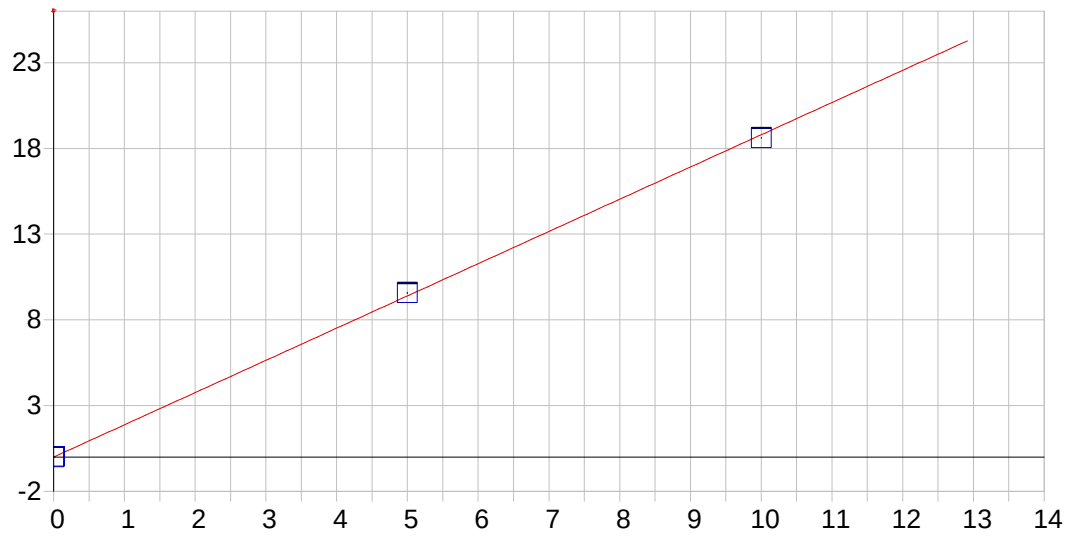


Mg 279.806 {121}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.001880	Re-Slope:	1.000000
A1 (Gain):	0.050525	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999975	Status:	OK.
Std Error of Est:	0.000195		
Predicted MDL:	0.010221		
Predicted MQL:	0.034070		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00002	.000	.000	-.00188	.001	1
CAL 1	1.0000	.97289	-.027	-2.71	.04728	.001	1
Cal 2	50.000	50.483	.483	.965	2.5487	.020	1
Cal 3	100.00	99.544	-.456	-.456	5.0276	.018	1



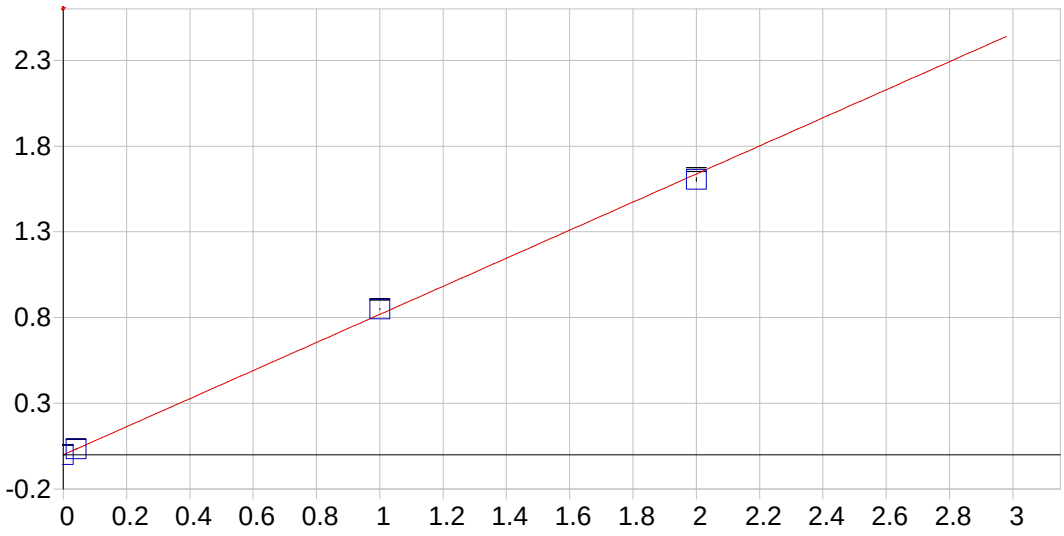
Mn 257.610 {131}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000202	Re-Slope:	1.000000
A1 (Gain):	1.879556	Y-int:	0.000000

A2 (Curvature):		0.000000					
n (Exponent):		1.000000					
Correlation:		0.999908		Status:	OK.		
Std Error of Est:		0.000540					
Predicted MDL:		0.000252					
Predicted MQL:		0.000840					

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00020	.000	1
CAL 1	.01500	.01544	.000	2.96	.02923	.001	1
Cal 2	5.0000	5.0954	.095	1.91	9.5772	.035	1
Cal 3	10.000	9.9042	-.096	-.958	18.616	.028	1

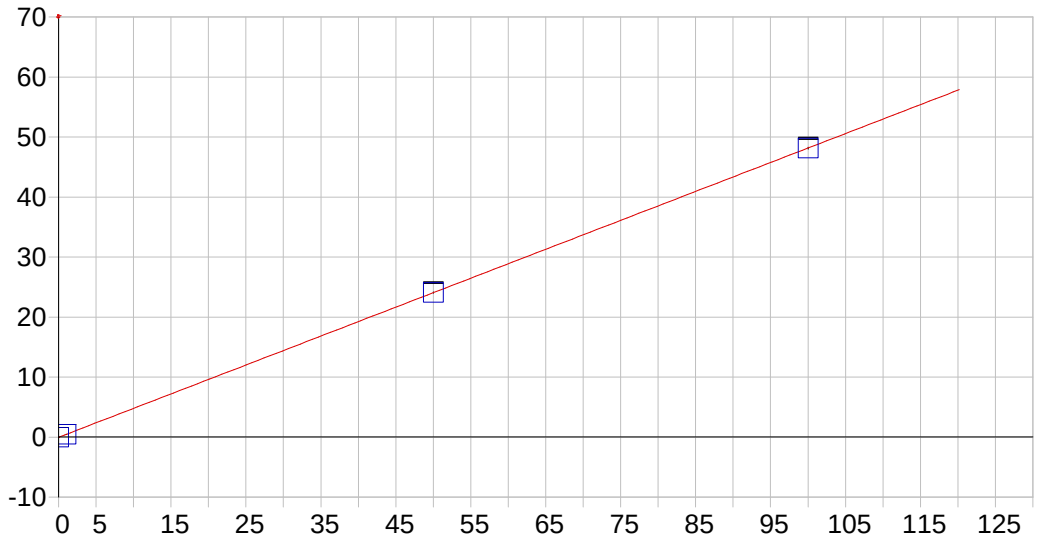


Mo 202.030 {467}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000190	Re-Slope:	1.000000
A1 (Gain):	0.818783	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999633	Status:	OK.
Std Error of Est:	0.000346		
Predicted MDL:	0.000164		
Predicted MQL:	0.000547		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	-.00019	.000	1
CAL 1	.04000	.04175	.002	4.37	.03399	.000	1
Cal 2	1.0000	1.0373	.037	3.73	.84915	.004	1
Cal 3	2.0000	1.9609	-.039	-1.95	1.6054	.011	1

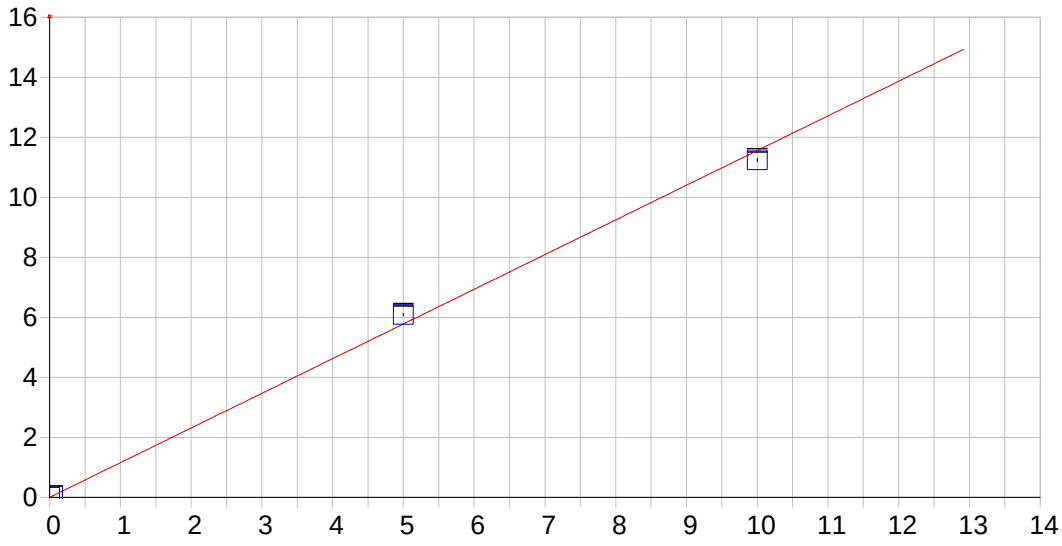


Na 589.592 { 57}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.039517	Re-Slope:	1.000000
A1 (Gain):	0.481997	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	1.000000	Status:	OK.
Std Error of Est:	0.000206		
Predicted MDL:	0.006905		
Predicted MQL:	0.023018		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00001	.000	.000	-.03951	.006	1
CAL 1	1.0000	.99296	-.007	-.704	.43909	.002	1
Cal 2	50.000	50.040	.040	.079	24.079	.103	1
Cal 3	100.00	99.968	-.032	-.032	48.145	.147	1



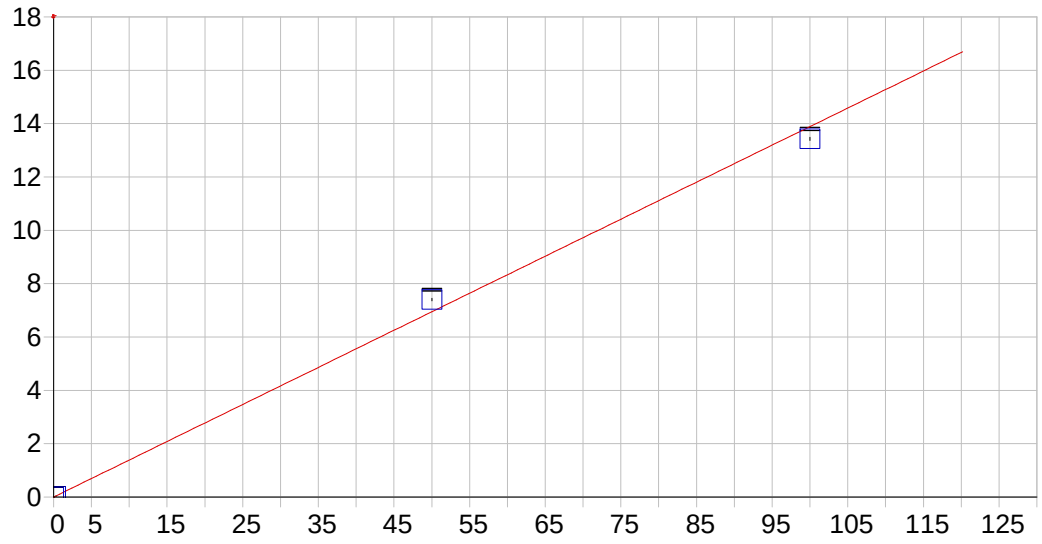
Ni 221.647 {452}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000174	Re-Slope:	1.000000
A1 (Gain):	1.155643	Y-int:	0.000000

A2 (Curvature):		0.000000					
n (Exponent):		1.000000					
Correlation:		0.999246		Status:	OK.		
Std Error of Est:		0.001557					
Predicted MDL:		0.000178					
Predicted MQL:		0.000592					

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	-.00001	.000	.000	.00017	.000	1
CAL 1	.04000	.04411	.004	10.3	.05115	.000	1
Cal 2	5.0000	5.2712	.271	5.42	6.0917	.042	1
Cal 3	10.000	9.7247	-.275	-2.75	11.238	.061	1

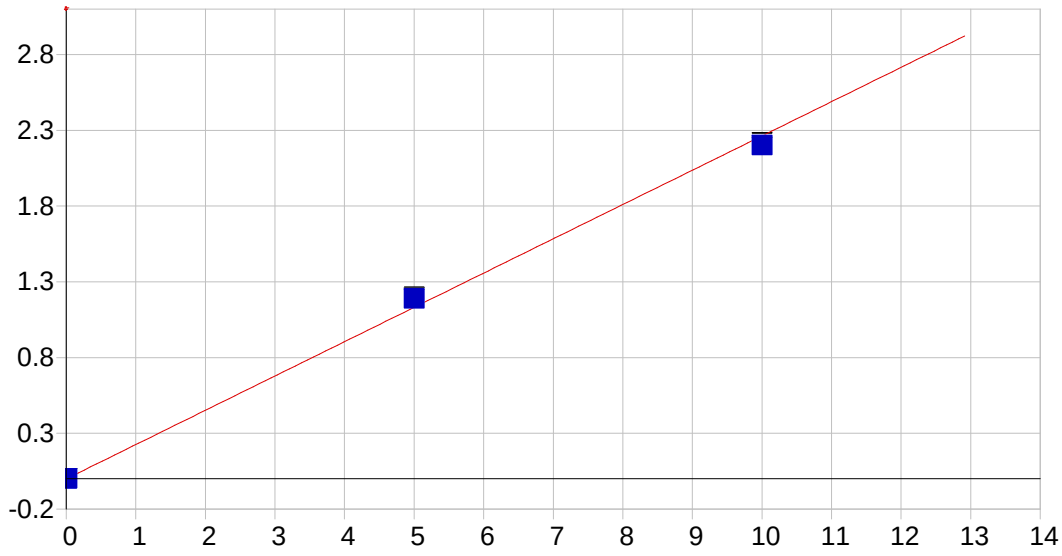


P 177.495 {490}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000083	Re-Slope:	1.000000
A1 (Gain):	0.138895	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.998913	Status:	OK.
Std Error of Est:	0.001775		
Predicted MDL:	0.000750		
Predicted MQL:	0.002501		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	-.00001	.000	.000	.00008	.000	1
CAL 1	.25000	.25541	.005	2.16	.03556	.000	1
Cal 2	50.000	53.300	3.30	6.60	7.4031	.053	1
Cal 3	100.00	96.695	-3.31	-3.31	13.430	.059	1

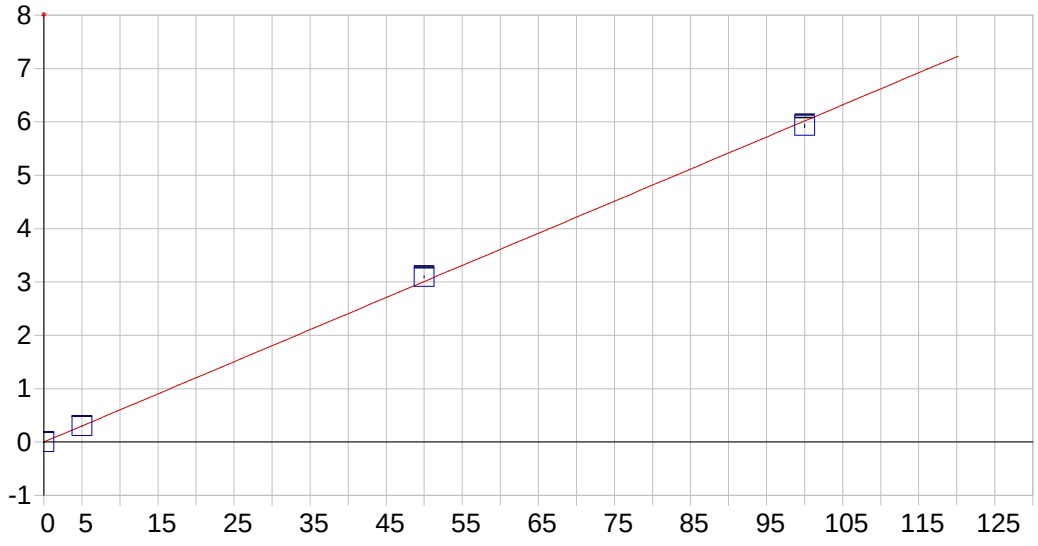


Pb 220.353 {453}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000449	Re-Slope:	1.000000
A1 (Gain):	0.226334	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999290	Status:	OK.
Std Error of Est:	0.000148		
Predicted MDL:	0.000778		
Predicted MQL:	0.002592		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	-.00045	.000	1
CAL 1	.01000	.01183	.002	18.3	.00235	.000	1
Cal 2	5.0000	5.2642	.264	5.28	1.1923	.007	1
Cal 3	10.000	9.7339	-.266	-2.66	2.2052	.015	1



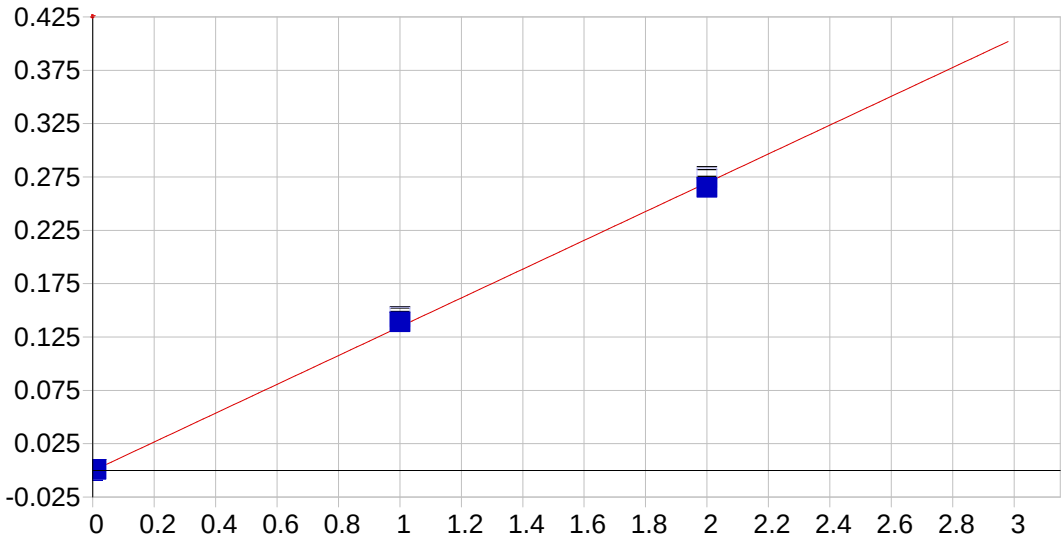
S 182.034 {485}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000216	Re-Slope:	1.000000
A1 (Gain):	0.060188	Y-int:	0.000000

A2 (Curvature):	0.000000					
n (Exponent):	1.000000					
Correlation:	0.999784		Status:	OK.		
Std Error of Est:	0.001557					
Predicted MDL:	0.001698					
Predicted MQL:	0.005659					

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	-.00011	.000	.000	-.00022	.000	1
CAL 1	5.0000	5.0336	.034	.671	.30274	.001	1
Cal 2	50.000	51.481	1.48	2.96	3.0983	.017	1
Cal 3	100.00	98.485	-1.51	-1.51	5.9274	.031	1

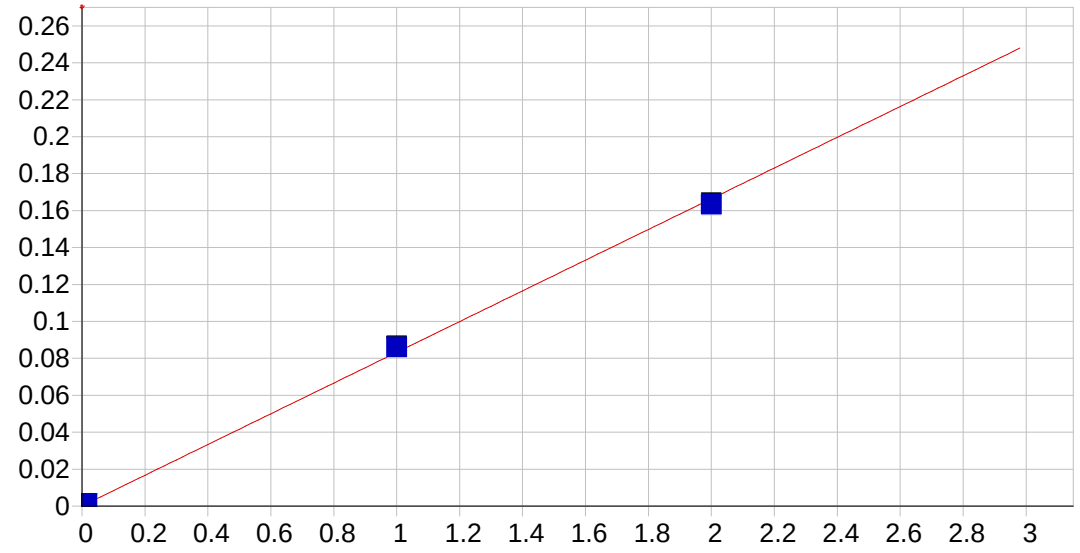


Sb 206.833 {463}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000360	Re-Slope:	1.000000
A1 (Gain):	0.134980	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999736	Status:	OK.
Std Error of Est:	0.000025		
Predicted MDL:	0.001255		
Predicted MQL:	0.004183		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	-.00036	.000	1
CAL 1	.01000	.00950	.000	-4.99	.00092	.000	1
Cal 2	1.0000	1.0336	.034	3.36	.14358	.001	1
Cal 3	2.0000	1.9669	-.033	-1.65	.27400	.001	1

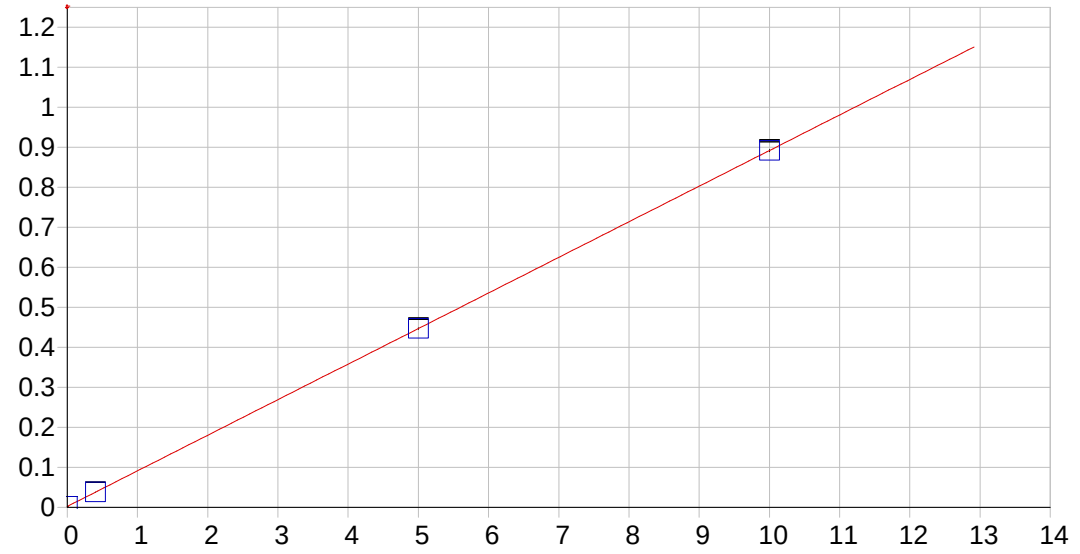


Se 196.090 {472}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000083	Re-Slope:	1.000000
A1 (Gain):	0.083166	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999685	Status:	OK.
Std Error of Est:	0.000020		
Predicted MDL:	0.001523		
Predicted MQL:	0.005076		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00008	.000	1
CAL 1	.01500	.01511	.000	.733	.00134	.000	1
Cal 2	1.0000	1.0355	.035	3.55	.08594	.000	1
Cal 3	2.0000	1.9644	-.036	-1.78	.16294	.001	1



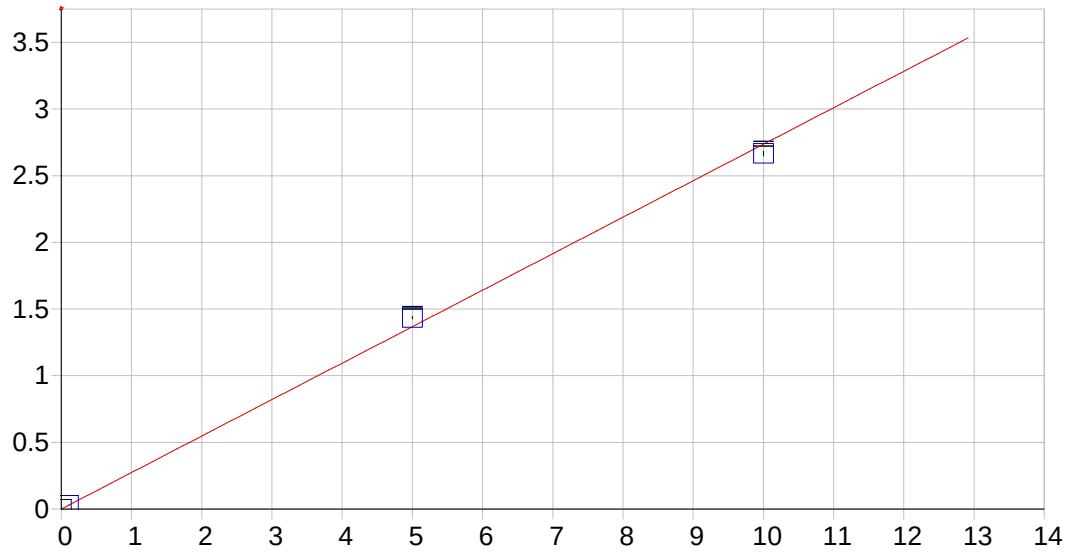
Si 251.611 {134}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.002325	Re-Slope:	1.000000
A1 (Gain):	0.088959	Y-int:	0.000000

A2 (Curvature):		0.000000					
n (Exponent):		1.000000					
Correlation:		1.000000		Status:	OK.		
Std Error of Est:		0.000008					
Predicted MDL:		0.005179					
Predicted MQL:		0.017263					

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00232	.000	1
CAL 1	.40000	.40185	.002	.463	.03807	.001	1
Cal 2	5.0000	4.9981	-.002	-.038	.44695	.002	1
Cal 3	10.000	10.000	.000	.000	.89192	.003	1

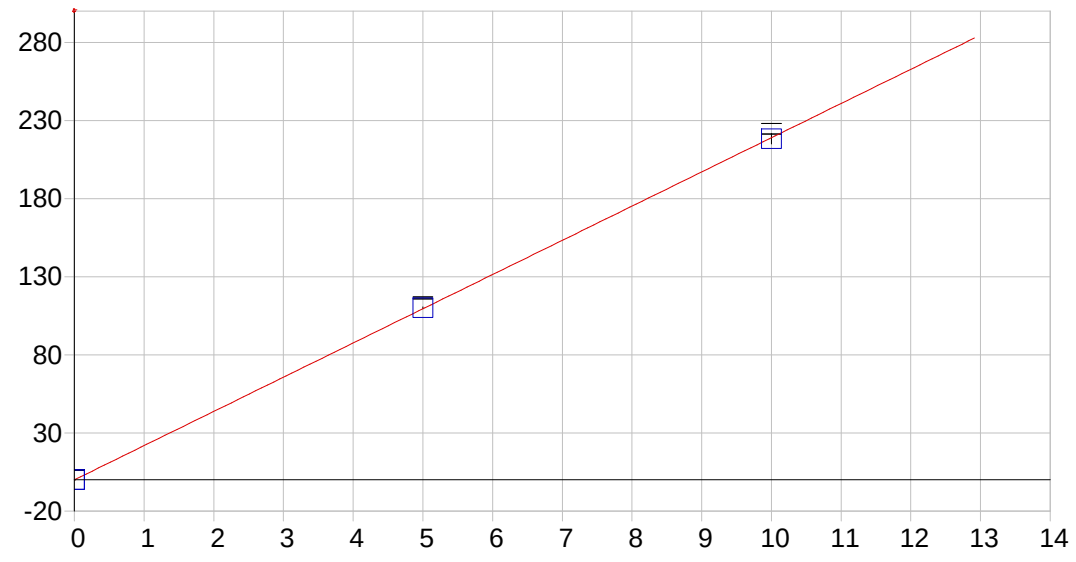


Sn 189.989 {478}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000080	Re-Slope:	1.000000
A1 (Gain):	0.273595	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999375	Status:	OK.
Std Error of Est:	0.000531		
Predicted MDL:	0.000354		
Predicted MQL:	0.001179		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	-.00001	.000	.000	.00008	.000	1
CAL 1	.10000	.10745	.007	7.45	.02948	.000	1
Cal 2	5.0000	5.2447	.245	4.89	1.4350	.010	1
Cal 3	10.000	9.7479	-.252	-2.52	2.6670	.018	1

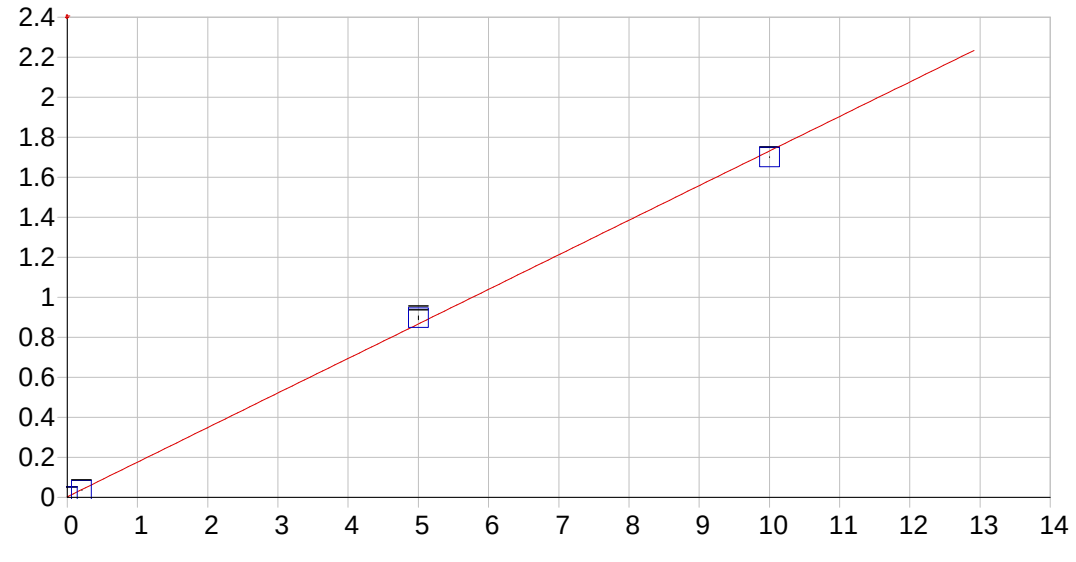


Sr 407.771 { 83}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.003506	Re-Slope:	1.000000
A1 (Gain):	21.897175	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999991	Status:	OK.
Std Error of Est:	0.001162		
Predicted MDL:	0.000058		
Predicted MQL:	0.000193		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	-.00351	.001	1
CAL 1	.00500	.00522	.000	4.41	.11081	.002	1
Cal 2	5.0000	5.0301	.030	.601	110.14	.576	1
Cal 3	10.000	9.9697	-.030	-.303	218.31	3.42	1



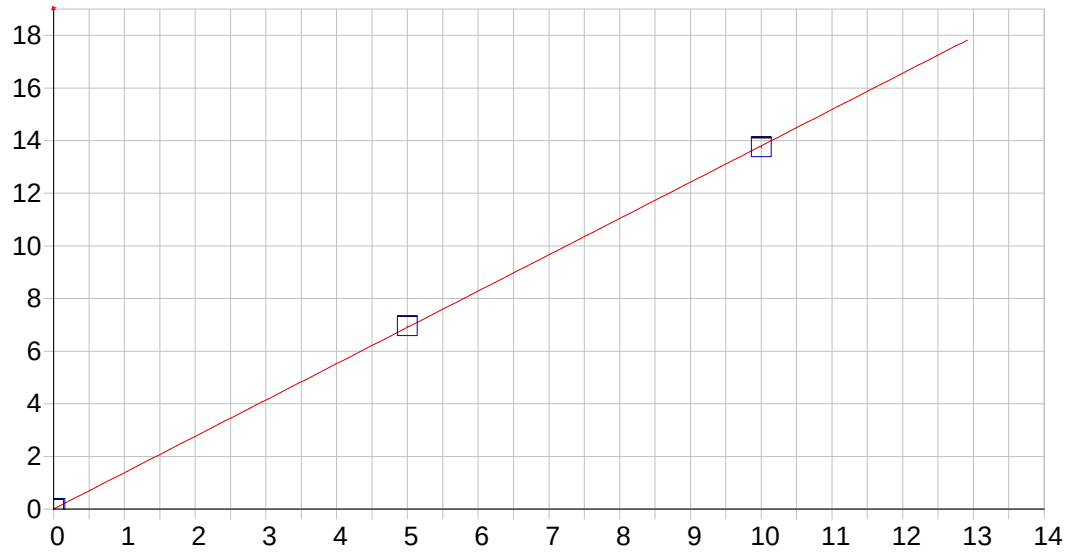
Th 283.231 {119}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.003281	Re-Slope:	1.000000
A1 (Gain):	0.172760	Y-int:	0.000000

A2 (Curvature):	0.000000						
n (Exponent):	1.000000						
Correlation:	0.999689			Status:	OK.		
Std Error of Est:	0.000336						
Predicted MDL:	0.002516						
Predicted MQL:	0.008386						

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00328	.000	1
CAL 1	.20000	.19534	-.005	-2.33	.03703	.000	1
Cal 2	5.0000	5.1782	.178	3.56	.89787	.010	1
Cal 3	10.000	9.8265	-.174	-1.74	1.7009	.002	1

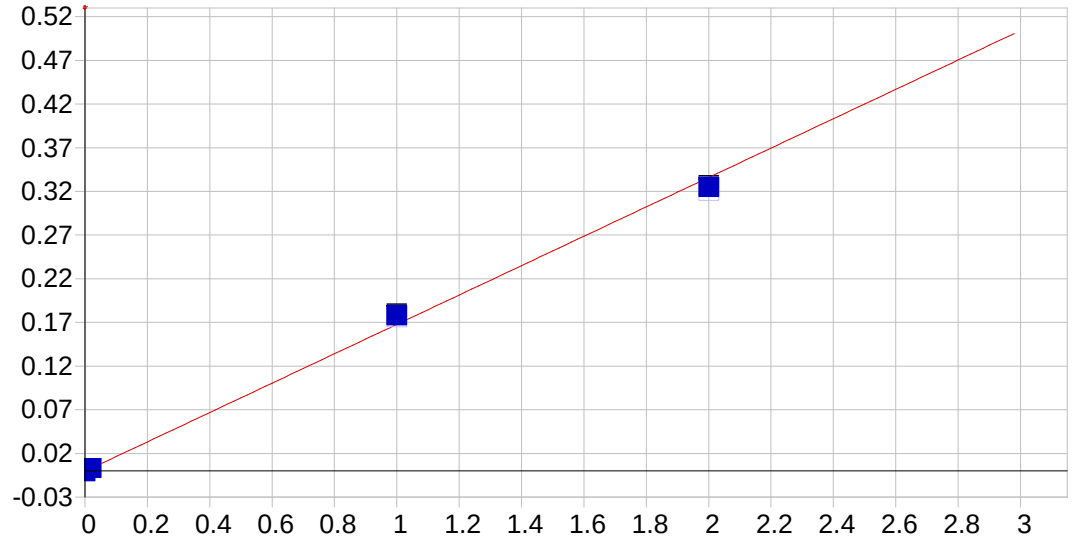


Ti 334.941 {101}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.003707	Re-Slope:	1.000000
A1 (Gain):	1.379892	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999986	Status:	OK.
Std Error of Est:	0.000178		
Predicted MDL:	0.000640		
Predicted MQL:	0.002133		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	.00371	.001	1
CAL 1	.02000	.01940	-.001	-2.98	.03048	.000	1
Cal 2	5.0000	5.0367	.037	.734	6.9538	.005	1
Cal 3	10.000	9.9639	-.036	-.361	13.753	.019	1

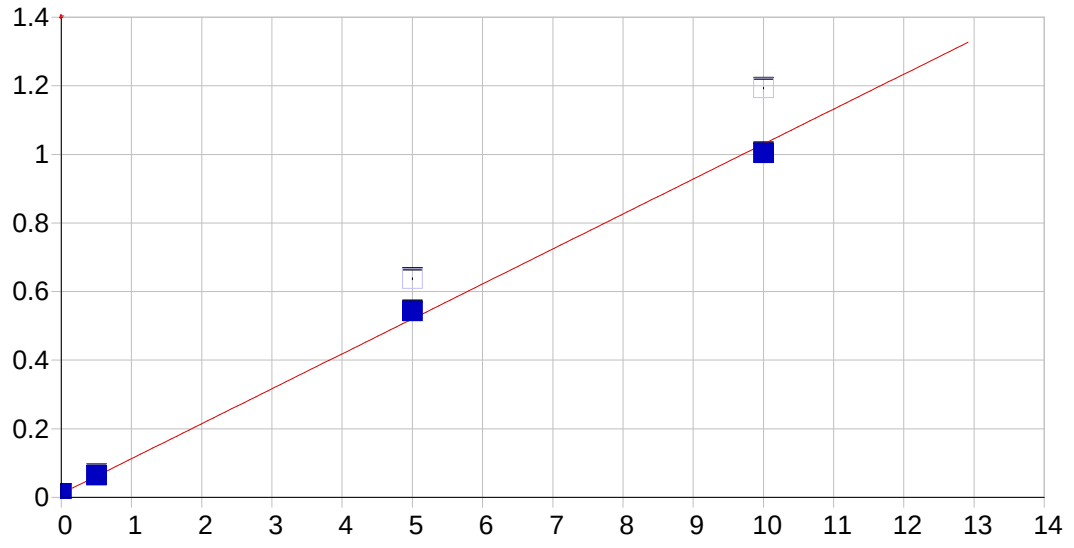


Tl 190.856 {477}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000457	Re-Slope:	1.000000
A1 (Gain):	0.168198	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.998924	Status:	OK.
Std Error of Est:	0.000085		
Predicted MDL:	0.000767		
Predicted MQL:	0.002556		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	-.00046	.000	1
CAL 1	.02000	.02245	.002	12.2	.00329	.000	1
Cal 2	1.0000	1.0627	.063	6.27	.17615	.001	1
Cal 3	2.0000	1.9349	-.065	-3.26	.32072	.002	1



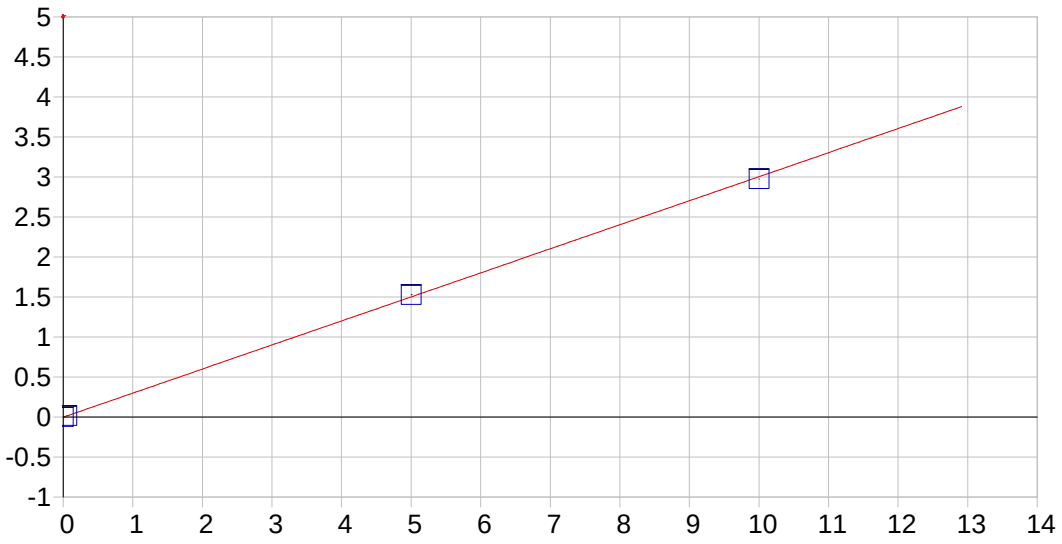
U 367.007 { 92}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.010817	Re-Slope:	1.000000
A1 (Gain):	0.101915	Y-int:	0.000000

A2 (Curvature):		0.000000					
n (Exponent):		1.000000					
Correlation:		0.999589		Status:	OK.		
Std Error of Est:		0.000429					
Predicted MDL:		0.010669					
Predicted MQL:		0.035563					

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	-.00004	.000	.000	.01081	.001	1
CAL 1	.50000	.52953	.030	5.91	.06785	.001	1
Cal 2	5.0000	5.2220	.222	4.44	.63736	.003	1
Cal 3	10.000	9.7516	-.248	-2.48	1.1933	.003	1

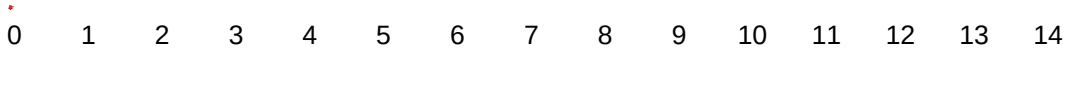


V 290.882 {116}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000915	Re-Slope:	1.000000
A1 (Gain):	0.300445	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999915	Status:	OK.
Std Error of Est:	0.000152		
Predicted MDL:	0.002455		
Predicted MQL:	0.008182		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CALBLK1	.00000	.00000	.000	.000	-.00092	.001	1
CAL 1	.05000	.05221	.002	4.41	.01477	.000	1
Cal 2	5.0000	5.0899	.090	1.80	1.5283	.001	1
Cal 3	10.000	9.9079	-.092	-.921	2.9759	.002	1

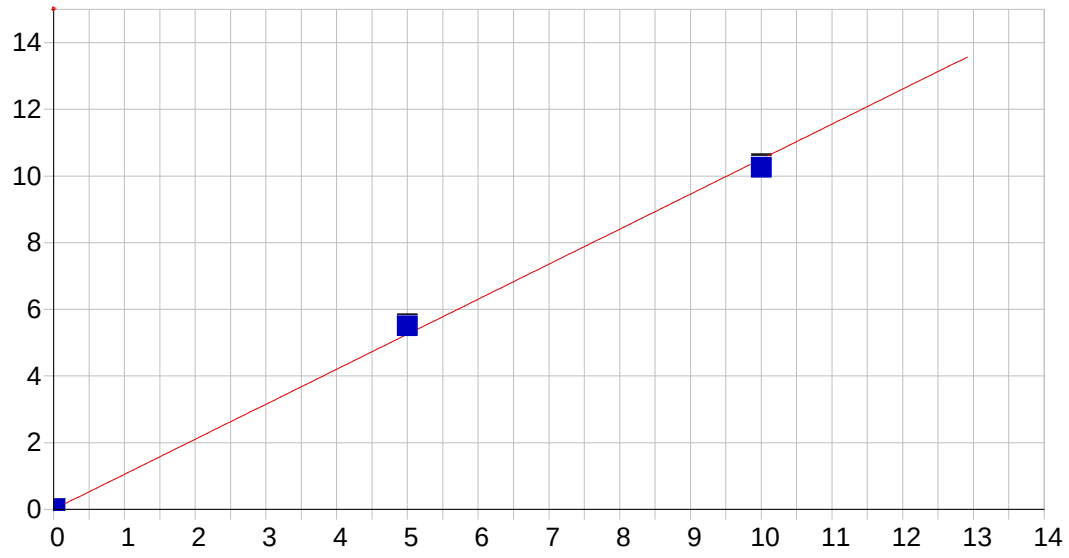


Y 371.030 { 91}*

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	1.000000	Re-Slope:	1.000000
A1 (Gain):	0.000000	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.000000	Status:	Warning Zero Gain
Std Error of Est:	0.000000		
Predicted MDL:	n/a		
Predicted MQL:	n/a		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CAL 1	1.0000	.00000	-1.00	-100.	1.0000	.000	1
CALBLK1	.00000	.00000	.000	.000	1.0000	.000	1
Cal 2	5.0000	.00000	-5.00	-100.	1.0000	.000	1
Cal 3	10.000	.00000	-10.0	-100.	1.0000	.000	1



Zn 213.856 {458}

Date of Fit:	12/5/2014 12:26:29	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000612	Re-Slope:	1.000000
A1 (Gain):	1.050718	Y-int:	0.000000

A2 (Curvature):		0.000000					
n (Exponent):		1.000000					
Correlation:		0.999450		Status:	OK.		
Std Error of Est:		0.000857					
Predicted MDL:		0.000105					
Predicted MQL:		0.000350					
Std. Name	**Stated Conc.**	**Found Conc.**	**Difference**	**% Diff.**	**(S)IR**	**Std Dev**	**Emphasis**
CALBLK1	.00000	.00000	.000	.000	.00061	.000	1
CAL 1	.02000	.02076	.001	3.81	.02250	.000	1
Cal 2	5.0000	5.2352	.235	4.70	5.5203	.037	1
Cal 3	10.000	9.7640	-.236	-2.36	10.298	.062	1

Sample Name: ICV Acquired: 12/5/2014 12:26:37 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.9725**	**49.27**	**4.818**	**4.997**	**4.901**	**4.880**	**4.919**	**50.25**	**4.930**
Stddev	.0126	.18	.065	.010	.125	.134	.072	.54	.064
%RSD	1.293	.3710	1.347	.2064	2.541	2.737	1.474	1.075	1.306
#1	.9646	49.21	4.778	4.988	4.759	4.737	4.874	50.00	4.892
#2	.9659	49.47	4.783	5.008	4.954	4.900	4.879	49.88	4.894
#3	.9870	49.12	4.893	4.996	4.991	5.002	5.002	50.87	5.005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.048**	**5.007**	**4.932**	**49.71**	**49.36**	**5.011**	**48.14**	**4.919**	**1.018**
Stddev	.067	.065	.074	.21	.17	.032	.35	.015	.015
%RSD	1.334	1.290	1.509	.4158	.3441	.6429	.7299	.3115	1.470
#1	5.009	4.964	4.893	49.49	49.27	5.010	47.89	4.902	1.010
#2	5.008	4.974	4.884	49.75	49.56	5.043	47.99	4.924	1.010
#3	5.125	5.081	5.017	49.90	49.25	4.979	48.54	4.931	1.036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**48.71**	**4.963**	**5.155**	**5.009**	**49.57**	**.9881**	**.9736**	**5.187**	**4.971**
Stddev	.21	.065	.071	.068	.74	.0101	.0139	.006	.064
%RSD	.4351	1.304	1.370	1.358	1.495	1.021	1.428	.1220	1.291
#1	48.74	4.927	5.114	4.970	49.09	.9806	.9674	5.181	4.932
#2	48.91	4.924	5.115	4.970	49.19	.9842	.9638	5.194	4.935
#3	48.49	5.037	5.237	5.088	50.42	.9995	.9895	5.187	5.045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: ICV Acquired: 12/5/2014 12:26:37 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.974**	**4.875**	**4.977**	**.9989**	**5.024**	**4.789**	**4.931**
Stddev	.117	.076	.012	.0119	.070	.017	.068
%RSD	2.352	1.568	.2449	1.192	1.383	.3485	1.382
#1	4.877	4.843	4.963	.9901	4.978	4.770	4.893
#2	4.940	4.819	4.987	.9943	4.989	4.801	4.891
#3	5.104	4.962	4.980	1.012	5.104	4.797	5.010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**4492.3**
Stddev	54.1
%RSD	1.2035
#1	4521.9
#2	4525.2
#3	4429.9

Sample Name: ICB Acquired: 12/5/2014 12:30:26 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	<.0000	.0179	.0003	.0003	<.0000	.0009	.0002
Stddev	.0002	.0084	.0012	.0029	.0002	.0000	.0009	.0011	.0000
%RSD	123.4	330.4	892.2	16.42	51.93	15.33	87.68	124.9	24.81
#1	-.0001	-.0006	.0009	.0197	.0003	.0003	-.0004	.0014	.0001
#2	-.0003	.0047	.0001	.0195	.0002	.0003	-.0006	.0016	.0002
#3	.0000	-.0117	-.0014	.0145	.0005	.0002	-.0021	-.0004	.0002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0008	.0027	.0022	.0467	.0000	.0077	.0003	.0001
Stddev	.0003	.0008	.0007	.0005	.0048	.0014	.0023	.0001	.0003
%RSD	240.5	101.8	24.66	24.11	10.32	16510.	30.28	29.71	286.4
#1	.0004	.0017	.0022	.0021	.0411	.0017	.0060	.0002	.0001
#2	.0001	.0000	.0035	.0028	.0492	-.0009	.0103	.0004	-.0002
#3	-.0002	.0008	.0025	.0018	.0497	-.0007	.0068	.0003	.0004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0016	.0003	.0002	.0006	.0056	.0005	<.0000	<.0000	.0004
Stddev	.0082	.0003	.0004	.0005	.0022	.0007	.0010	.0033	.0005
%RSD	529.9	76.01	185.7	82.92	40.04	143.2	1028.	2467.	121.5
#1	.0091	.0006	.0007	.0008	.0077	-.0002	-.0002	-.0039	.0002
#2	-.0072	.0002	.0000	.0000	.0059	.0005	-.0010	.0011	.0001
#3	.0028	.0001	-.0001	.0010	.0032	.0012	.0009	.0024	.0009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Sample Name: ICB Acquired: 12/5/2014 12:30:26 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	<.0000	<.0000	.0007	.0123	.0032	.0001
Stddev	.0001	.0008	.0005	.0003	.0102	.0032	.0002
%RSD	23.92	103.7	128.9	39.82	83.26	99.12	159.9
#1	.0003	-.0014	-.0006	.0006	.0015	.0014	.0002
#2	.0003	-.0011	.0002	.0004	.0134	.0070	.0001
#3	.0002	.0001	-.0007	.0010	.0219	.0014	-.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_3710
Units	Cts/S
Avg	4466.9
Stddev	28.3
%RSD	.63419
#1	4494.2
#2	4437.6
#3	4469.1

Sample Name: LLC Acquired: 12/5/2014 12:34:22 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0101**	**.2003**	**.0104**	**.0566**	**.0494**	**.0052**	**.2084**	**1.133**
Stddev	.0005	.0059	.0014	.0042	.0002	.0001	.0015	.005
%RSD	4.945	2.969	13.61	7.477	.3167	1.020	.6997	.4791
#1	.0098	.2070	.0117	.0522	.0493	.0051	.2091	1.135
#2	.0106	.1982	.0108	.0569	.0495	.0052	.2067	1.127
#3	.0098	.1956	.0089	.0607	.0492	.0052	.2093	1.137
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Cd2288	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0052**	**.0554**	**.0104**	**.0268**	**.1041**	**4.922**	**.0494**	**.9676**
Stddev	.0001	.0002	.0008	.0020	.0020	.020	.0006	.0155
%RSD	1.634	.3918	7.986	7.577	1.944	.4083	1.267	1.603
#1	.0051	.0553	.0100	.0286	.1019	4.942	.0496	.9828
#2	.0052	.0553	.0113	.0246	.1059	4.924	.0486	.9518
#3	.0052	.0557	.0098	.0271	.1045	4.902	.0498	.9682
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mn2576	Mo2020	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0152**	**.0425**	**.9595**	**.0448**	**.2594**	W **.0121**	**5.080**	**.0110**
Stddev	.0003	.0004	.0083	.0004	.0016	.0006	.045	.0013
%RSD	2.050	.8307	.8694	.7915	.6000	5.034	.8899	11.43
#1	.0149	.0428	.9688	.0448	.2588	.0114	5.101	.0110
#2	.0151	.0421	.9569	.0445	.2582	.0123	5.029	.0097
#3	.0155	.0426	.9528	.0452	.2612	.0125	5.112	.0122
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass
Value						.0100		
Range						20.00%		

Sample Name: LLC Acquired: 12/5/2014 12:34:22 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2516	Sn1899	Sr4077	Th2832	Ti3349	Tl1908	U_3670
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0155	.3881	.1083	.0051	.1976	.0198	.0230	.5381
Stddev	.0009	.0035	.0012	.0000	.0020	.0007	.0006	.0143
%RSD	5.496	.9067	1.154	.8692	1.036	3.387	2.787	2.658
#1	.0155	.3846	.1093	.0052	.1999	.0204	.0230	.5420
#2	.0146	.3917	.1069	.0051	.1960	.0191	.0224	.5223
#3	.0163	.3878	.1087	.0052	.1969	.0200	.0237	.5501
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	V_2908	Zn2138
Units	ppm	ppm
Avg	.0512	.0214
Stddev	.0015	.0002
%RSD	2.896	.8803
#1	.0528	.0215
#2	.0499	.0212
#3	.0508	.0216
Check ?	Chk Pass	Chk Pass
Value		
Range		

Int. Std.	Y_3710
Units	Cts/S
Avg	4552.0
Stddev	14.9
%RSD	.32654
#1	4544.5
#2	4569.1
#3	4542.4

Sample Name: ICSA Acquired: 12/5/2014 12:38:16 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	98.89	.0034	W<.0000	.0002	.0000	.0182
Stddev	.0005	.10	.0009	.0063	.0001	.0000	.0010
%RSD	132.6	.0986	25.45	13.46	49.69	275.3	5.538
#1	-.0003	99.00	.0044	-.0474	.0001	.0001	.0182
#2	-.0009	98.81	.0027	-.0407	.0002	.0000	.0192
#3	.0001	98.87	.0032	-.0533	.0001	.0000	.0172
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass
High Limit				.0324			
Low Limit				-.0324			

Elem	Ca1840	Cd2288	Co2286	Cr2835	Cu2178	Fe2599	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	97.51	W<.0000	.0014	<.0000	.0045	99.00	99.40
Stddev	.26	.0000	.0003	.0015	.0003	.14	.10
%RSD	.2647	1.601	17.84	43.56	7.263	.1414	.0985
#1	97.80	-.0013	.0016	-.0049	.0047	99.14	99.42
#2	97.42	-.0013	.0015	-.0019	.0046	98.86	99.29
#3	97.31	-.0014	.0011	-.0035	.0041	99.01	99.48
Check ?	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		.0010					
Low Limit		-.0010					

Elem	Li6707	Mg2798	Mn2576	Mo2020	Na5895	Ni2216	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0016	99.50	W .0047	<.0000	98.38	.0014	97.56
Stddev	.0003	.20	.0006	.0003	.23	.0005	.57
%RSD	17.40	.2028	13.40	56.85	.2386	35.81	.5833
#1	.0014	99.59	.0045	-.0007	98.49	.0018	98.21
#2	.0019	99.64	.0041	-.0008	98.11	.0008	97.30
#3	.0016	99.27	.0054	-.0002	98.54	.0016	97.16
Check ?	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			.0031				
Low Limit			-.0031				

Sample Name: ICSA Acquired: 12/5/2014 12:38:16 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	99.09	<.0000	.0031	<.0000	<.0000	.0010
Stddev	.0013	.81	.0010	.0018	.0058	.0002	.0000
%RSD	413.2	.8197	35.69	59.69	109.0	85.52	3.941
#1	-.0016	100.0	-.0038	.0044	-.0121	-.0001	.0011
#2	-.0005	98.66	-.0029	.0037	-.0022	-.0001	.0010
#3	.0011	98.57	-.0018	.0010	-.0017	-.0004	.0010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0358	.0034	<.0000	W .0664	.0036	<.0000
Stddev	.0008	.0005	.0002	.0137	.0024	.0001
%RSD	2.361	14.06	15.06	20.65	67.64	1.421
#1	.0355	.0039	-.0012	.0806	.0043	-.0060
#2	.0367	.0032	-.0013	.0653	.0009	-.0059
#3	.0351	.0030	-.0016	.0532	.0055	-.0058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass
High Limit				.0470		
Low Limit				-.0470		

Int. Std.	Y_3710
Units	Cts/S
Avg	4451.3
Stddev	8.3
%RSD	.18726
#1	4442.3
#2	4452.7
#3	4458.8

Sample Name: ICSAB Acquired: 12/5/2014 12:42:04 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.4928**	**98.74**	**2.445**	**2.435**	**2.471**	**2.508**	**2.459**	**97.53**	**2.468**
Stddev	.0043	.43	.014	.005	.007	.005	.008	.50	.010
%RSD	.8782	.4361	.5550	.1881	.2862	.2197	.3331	.5089	.4142
#1	.4971	98.64	2.455	2.437	2.464	2.504	2.467	97.84	2.476
#2	.4929	99.21	2.450	2.430	2.478	2.515	2.460	97.80	2.472
#3	.4885	98.37	2.430	2.438	2.470	2.506	2.451	96.96	2.457
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.463**	**2.467**	**2.461**	**99.07**	**99.57**	**2.467**	**99.91**	**2.447**	**.4950**
Stddev	.013	.017	.007	.25	.30	.007	.37	.013	.0016
%RSD	.5230	.6726	.2951	.2511	.3044	.2995	.3738	.5184	.3141
#1	2.473	2.483	2.467	98.95	99.32	2.463	99.86	2.451	.4964
#2	2.468	2.468	2.463	99.36	99.91	2.476	100.3	2.457	.4953
#3	2.448	2.449	2.453	98.91	99.47	2.463	99.57	2.432	.4934
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**98.31**	**2.433**	**97.23**	**2.461**	**98.77**	**.4850**	**.4896**	**2.490**	**2.469**
Stddev	.21	.010	.48	.010	.39	.0031	.0023	.018	.012
%RSD	.2123	.3959	.4964	.4149	.3980	.6459	.4737	.7083	.4869
#1	98.10	2.440	97.64	2.468	99.13	.4883	.4898	2.485	2.479
#2	98.51	2.437	97.36	2.466	98.85	.4845	.4919	2.510	2.473
#3	98.32	2.422	96.70	2.449	98.35	.4821	.4873	2.476	2.456
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: ICSAB Acquired: 12/5/2014 12:42:04 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.516**	**2.471**	**2.474**	**.4871**	**2.512**	**2.421**	**2.488**
Stddev	.006	.016	.005	.0028	.029	.015	.011
%RSD	.2349	.6633	.2203	.5803	1.145	.6140	.4325
#1	2.510	2.488	2.472	.4901	2.546	2.428	2.497
#2	2.522	2.471	2.480	.4867	2.494	2.432	2.492
#3	2.515	2.455	2.470	.4845	2.498	2.404	2.476
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**4369.8**
Stddev	20.1
%RSD	.46017
#1	4366.8
#2	4351.3
#3	4391.2

Sample Name: LDR Acquired: 12/5/2014 12:45:29 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.954**	**99.05**	**9.886**	**9.795**	**9.756**	**9.678**	**9.825**	**96.93**	**9.792**
Stddev	.020	.15	.055	.035	.135	.171	.056	.67	.057
%RSD	1.034	.1557	.5531	.3574	1.386	1.763	.5698	.6926	.5769
#1	1.952	99.20	9.937	9.796	9.669	9.637	9.880	97.17	9.834
#2	1.935	98.89	9.829	9.759	9.687	9.532	9.768	96.17	9.727
#3	1.975	99.07	9.892	9.829	9.912	9.866	9.828	97.44	9.813
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.728**	**9.725**	**9.801**	**98.17**	**99.35**	**9.917**	**98.05**	**9.784**	**1.956**
Stddev	.053	.083	.073	.29	.15	.003	.47	.024	.012
%RSD	.5427	.8550	.7408	.2930	.1486	.0277	.4775	.2435	.5927
#1	9.762	9.737	9.857	98.37	99.42	9.916	98.10	9.795	1.965
#2	9.667	9.637	9.719	97.84	99.18	9.915	97.56	9.757	1.943
#3	9.755	9.802	9.828	98.29	99.45	9.920	98.49	9.801	1.960
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**97.77**	**9.720**	**97.36**	**9.727**	**99.65**	**1.979**	**1.990**	**9.846**	**9.747**
Stddev	.16	.057	.52	.053	.51	.009	.012	.035	.055
%RSD	.1686	.5905	.5343	.5452	.5080	.4438	.6017	.3574	.5673
#1	97.62	9.754	97.70	9.764	100.1	1.988	1.996	9.826	9.774
#2	97.75	9.653	96.76	9.666	99.09	1.970	1.976	9.825	9.683
#3	97.94	9.751	97.60	9.751	99.77	1.980	1.997	9.887	9.783
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: LDR Acquired: 12/5/2014 12:45:29 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.720**	**9.711**	**9.798**	**1.932**	**9.683**	**9.748**	**9.767**
Stddev	.053	.095	.015	.010	.106	.027	.050
%RSD	.5428	.9776	.1572	.5398	1.099	.2813	.5125
#1	9.770	9.719	9.812	1.935	9.685	9.751	9.803
#2	9.665	9.613	9.782	1.921	9.575	9.719	9.710
#3	9.726	9.802	9.802	1.941	9.788	9.774	9.789
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**4439.8**
Stddev	30.2
%RSD	.68085
#1	4422.0
#2	4474.7
#3	4422.7

Sample Name: CCV Acquired: 12/5/2014 12:49:20 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.9799**	**49.27**	**4.977**	**5.011**	**4.969**	**5.053**	**4.972**	**50.34**	**4.967**
Stddev	.0011	.17	.027	.012	.052	.051	.028	.20	.027
%RSD	.1150	.3366	.5413	.2304	1.055	1.020	.5647	.4029	.5410
#1	.9811	49.19	4.971	4.999	4.921	4.994	4.958	50.29	4.953
#2	.9797	49.46	4.954	5.022	5.025	5.088	4.953	50.17	4.950
#3	.9789	49.16	5.007	5.012	4.960	5.076	5.004	50.57	4.998
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.029**	**5.027**	**4.968**	**50.05**	**49.99**	**5.018**	**49.15**	**5.013**	**.9958**
Stddev	.022	.011	.039	.06	.08	.019	.10	.011	.0042
%RSD	.4325	.2139	.7777	.1253	.1618	.3738	.2092	.2282	.4221
#1	5.021	5.033	4.949	49.98	50.00	5.011	49.06	5.004	.9929
#2	5.013	5.014	4.942	50.07	50.06	5.039	49.26	5.026	.9938
#3	5.054	5.033	5.012	50.10	49.90	5.004	49.12	5.009	1.001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**49.97**	**5.046**	**50.90**	**5.055**	**49.34**	**.9875**	**.9928**	**4.930**	**5.035**
Stddev	.19	.022	.23	.019	.32	.0052	.0091	.022	.022
%RSD	.3823	.4352	.4606	.3690	.6537	.5256	.9213	.4372	.4319
#1	49.88	5.036	50.80	5.046	49.22	.9854	.9890	4.918	5.023
#2	50.19	5.032	50.72	5.043	49.08	.9838	.9862	4.955	5.022
#3	49.85	5.071	51.16	5.077	49.70	.9935	1.003	4.917	5.060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: CCV Acquired: 12/5/2014 12:49:20 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.039**	**4.964**	**4.988**	**1.016**	**4.994**	**5.004**	**5.001**
Stddev	.028	.007	.009	.002	.015	.005	.026
%RSD	.5541	.1466	.1854	.2057	.3042	.1100	.5126
#1	5.013	4.967	4.980	1.016	5.004	5.002	4.988
#2	5.068	4.970	4.998	1.014	4.977	5.010	4.984
#3	5.035	4.956	4.987	1.018	5.003	5.000	5.030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**4486.1**
Stddev	7.9
%RSD	.17576
#1	4494.7
#2	4484.4
#3	4479.2

Sample Name: CCB Acquired: 12/5/2014 12:53:08 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**.0049**	**.0004**	**.0173**	**.0004**	**.0004**	**.0003**	**.0035**	**.0002**
Stddev	.0005	.0049	.0010	.0010	.0002	.0000	.0014	.0005	.0001
%RSD	936.9	98.66	247.2	5.816	57.76	9.912	515.5	14.17	58.68
#1	.0001	-.0004	.0005	.0182	.0004	.0004	.0011	.0041	.0001
#2	-.0005	.0091	.0014	.0162	.0001	.0004	-.0013	.0031	.0001
#3	.0005	.0061	-.0006	.0175	.0005	.0004	.0009	.0034	.0003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0002**	**.0003**	**.0009**	**.0046**	**.0860**	**.0009**	**.0063**	**.0003**	**.0001**
Stddev	.0001	.0003	.0013	.0004	.0075	.0005	.0145	.0001	.0001
%RSD	38.68	101.6	140.0	7.749	8.777	62.47	231.9	42.78	79.54
#1	.0002	.0001	.0007	.0047	.0837	.0013	.0215	.0002	.0001
#2	.0001	.0007	.0024	.0049	.0944	.0003	.0047	.0003	.0001
#3	.0002	.0002	-.0002	.0042	.0799	.0010	-.0074	.0004	.0003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0146**	**.0003**	**.0030**	**.0014**	**.0070**	**.0008**	**<.0000**	**.0014**	**.0003**
Stddev	.0040	.0001	.0003	.0009	.0038	.0001	.0006	.0010	.0005
%RSD	27.47	44.64	10.27	65.66	54.28	7.176	119.7	69.67	201.1
#1	.0192	.0004	.0031	.0016	.0111	.0008	-.0003	.0025	-.0002
#2	.0131	.0002	.0033	.0004	.0060	.0008	-.0012	.0010	.0008
#3	.0116	.0003	.0027	.0023	.0038	.0009	.0000	.0007	.0002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Sample Name: CCB Acquired: 12/5/2014 12:53:08 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	<.0000	.0008	<.0000	<.0000	.0022	.0001
Stddev	.0000	.0006	.0006	.0012	.0151	.0035	.0001
%RSD	4.493	77.81	81.99	207.6	260.7	159.0	76.94
#1	.0004	-.0014	.0003	.0005	-.0103	.0057	.0002
#2	.0004	-.0003	.0005	-.0018	-.0181	.0023	.0002
#3	.0004	-.0005	.0015	-.0004	.0110	-.0014	.0000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_3710
Units	Cts/S
Avg	4557.5
Stddev	41.6
%RSD	.91230
#1	4602.8
#2	4521.1
#3	4548.6

Sample Name: CCV Acquired: 12/5/2014 12:57:05 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.9797**	**48.37**	**4.961**	**4.912**	**4.869**	**5.026**	**4.979**	**49.95**	**4.975**
Stddev	.0076	.27	.028	.040	.150	.050	.030	.37	.026
%RSD	.7801	.5511	.5620	.8171	3.084	.9973	.6086	.7323	.5254
#1	.9831	48.68	4.989	4.951	5.007	5.051	5.012	50.32	5.004
#2	.9850	48.23	4.960	4.914	4.892	5.059	4.970	49.94	4.970
#3	.9709	48.21	4.933	4.871	4.709	4.969	4.953	49.59	4.953
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.013**	**5.033**	**4.988**	**49.49**	**49.26**	**4.918**	**48.43**	**4.941**	**1.002**
Stddev	.029	.048	.023	.34	.37	.031	.18	.023	.005
%RSD	.5716	.9453	.4680	.6810	.7420	.6393	.3794	.4707	.5081
#1	5.044	5.064	5.015	49.86	49.63	4.954	48.63	4.968	1.008
#2	5.009	5.056	4.978	49.42	49.23	4.907	48.40	4.931	.9993
#3	4.987	4.978	4.972	49.20	48.90	4.894	48.27	4.925	.9988
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**48.93**	**5.036**	**50.56**	**5.052**	**49.33**	**.9877**	**.9903**	**4.857**	**5.021**
Stddev	.32	.030	.30	.027	.25	.0044	.0086	.013	.027
%RSD	.6523	.6058	.5865	.5261	.5051	.4492	.8683	.2572	.5390
#1	49.27	5.068	50.86	5.080	49.62	.9923	.9993	4.871	5.050
#2	48.89	5.032	50.56	5.049	49.20	.9835	.9897	4.853	5.017
#3	48.64	5.007	50.27	5.027	49.17	.9874	.9821	4.846	4.996
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: CCV Acquired: 12/5/2014 12:57:05 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.987**	**4.960**	**4.915**	**1.011**	**5.014**	**4.925**	**4.997**
Stddev	.118	.045	.029	.006	.026	.020	.027
%RSD	2.372	.9015	.5978	.6333	.5282	.3958	.5476
#1	5.114	4.963	4.948	1.017	5.035	4.946	5.027
#2	4.969	5.002	4.906	1.013	5.024	4.907	4.990
#3	4.879	4.913	4.891	1.005	4.984	4.922	4.973
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**4459.5**
Stddev	27.0
%RSD	.60510
#1	4436.3
#2	4453.0
#3	4489.1

Sample Name: CCB Acquired: 12/5/2014 13:00:54 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0018	.0007	.0138	.0005	.0005	<.0000	.0030	.0001
Stddev	.0005	.0072	.0009	.0023	.0000	.0000	.0035	.0011	.0001
%RSD	308.2	400.3	130.3	16.86	9.512	9.354	714.3	36.20	53.25
#1	-.0007	-.0014	.0016	.0160	.0005	.0005	.0030	.0042	.0001
#2	.0002	-.0032	.0008	.0140	.0004	.0004	-.0041	.0021	.0002
#3	.0000	.0101	-.0003	.0114	.0004	.0005	-.0003	.0026	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0005	.0004	.0037	.0477	.0014	.0124	.0004	.0001
Stddev	.0000	.0007	.0020	.0016	.0304	.0001	.0062	.0002	.0001
%RSD	29.27	131.2	555.1	43.22	63.72	9.027	49.94	44.00	77.86
#1	.0002	.0012	.0018	.0048	.0147	.0013	.0053	.0002	.0002
#2	.0001	.0002	.0013	.0045	.0537	.0013	.0151	.0005	.0000
#3	.0001	.0001	-.0020	.0019	.0746	.0015	.0167	.0004	.0002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0167	.0004	.0024	.0009	.0066	<.0000	.0001	.0041	.0003
Stddev	.0076	.0002	.0016	.0007	.0030	.0007	.0003	.0063	.0001
%RSD	45.61	50.64	63.63	78.23	45.51	120.1	240.8	152.8	18.63
#1	.0188	.0005	.0042	.0017	.0092	.0002	.0005	.0087	.0003
#2	.0083	.0004	.0017	.0004	.0074	-.0007	-.0002	-.0031	.0003
#3	.0231	.0001	.0014	.0007	.0033	-.0012	.0001	.0067	.0002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Sample Name: CCB Acquired: 12/5/2014 13:00:54 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005	<.0000	.0004	.0000	.0192	.0033	.0002
Stddev	.0000	.0012	.0006	.0004	.0091	.0009	.0001
%RSD	9.978	893.8	146.1	917.0	47.31	26.97	57.32
#1	.0005	.0002	.0009	-.0004	.0088	.0026	.0003
#2	.0004	.0009	.0004	.0002	.0230	.0030	.0002
#3	.0005	-.0014	-.0002	.0004	.0256	.0043	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_3710
Units	Cts/S
Avg	4609.5
Stddev	2.5
%RSD	.05490
#1	4612.2
#2	4609.2
#3	4607.1

Sample Name: 160-9134-A-9-A Acquired: 12/5/2014 13:28:12 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0014	.0029	.0046	.0252	<.0000	.0002	39.51	.0000
Stddev	.0008	.0108	.0010	.0013	.0002	.0000	.0024	.09	.0001
%RSD	165.0	757.8	34.98	28.13	.8076	389.6	1049.	.2355	541.3
#1	.0002	.0090	.0020	.0042	.0255	.0000	.0019	39.57	.0002
#2	-.0014	-.0110	.0027	.0035	.0251	.0000	-.0026	39.40	-.0001
#3	-.0002	.0062	.0039	.0060	.0251	.0000	.0013	39.54	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0118	.0040	.0021	3.742	.0053	9.400	.0001	.0047
Stddev	.0000	.0005	.0012	.0020	.026	.0006	.043	.0001	.0002
%RSD	28.21	3.903	30.07	94.19	.6856	12.06	.4573	215.3	5.025
#1	-.0001	.0120	.0028	.0012	3.760	.0049	9.422	.0002	.0048
#2	-.0001	.0112	.0052	.0007	3.713	.0061	9.351	.0000	.0045
#3	-.0001	.0120	.0039	.0043	3.755	.0050	9.428	.0000	.0049
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	14.70	.0036	.0230	.0025	14.82	.0015	.0001	13.45	<.0000
Stddev	.06	.0001	.0008	.0012	.10	.0007	.0017	.06	.0001
%RSD	.4065	2.180	3.401	47.04	.6796	49.71	1859.	.4555	22.67
#1	14.66	.0037	.0222	.0038	14.92	.0007	-.0014	13.46	-.0004
#2	14.67	.0036	.0238	.0015	14.72	.0021	.0019	13.39	-.0004
#3	14.77	.0036	.0231	.0023	14.81	.0017	-.0003	13.51	-.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9134-A-9-A Acquired: 12/5/2014 13:28:12 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2215	.0028	.0004	<.0000	.0237	.0156	.0075
Stddev	.0011	.0010	.0009	.0005	.0122	.0031	.0001
%RSD	.4931	35.62	224.9	534.2	51.55	19.76	1.291
#1	.2215	.0039	.0006	.0003	.0282	.0140	.0076
#2	.2205	.0025	-.0006	.0000	.0330	.0191	.0076
#3	.2227	.0020	.0012	-.0006	.0099	.0136	.0074
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4595.1
Stddev	25.5
%RSD	.55488
#1	4570.2
#2	4621.1
#3	4593.9

Sample Name: MB 160-159967/1-A Acquired: 12/5/2014 13:32:03 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	<.0000	.0005	.0002	.0000	<.0000	.0462	.0001
Stddev	.0009	.0005	.0006	.0018	.0002	.0000	.0015	.0008	.0001
%RSD	370.6	19.06	148.7	368.2	78.28	191.0	84.73	1.785	64.23
#1	.0005	-.0030	-.0003	-.0016	.0004	.0000	-.0030	.0460	.0002
#2	-.0012	-.0023	.0001	.0015	.0000	.0001	-.0001	.0454	.0001
#3	.0000	-.0021	-.0011	.0016	.0003	.0000	-.0024	.0471	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0005	.0013	.0146	.0119	.0006	.0023	.0002	<.0000
Stddev	.0002	.0003	.0020	.0021	.0218	.0003	.0042	.0001	.0002
%RSD	367.4	60.83	154.8	14.49	182.9	54.06	185.3	70.09	1524.
#1	-.0003	.0007	.0025	.0141	-.0009	.0010	.0020	.0000	-.0002
#2	.0000	.0002	-.0010	.0127	-.0004	.0004	.0066	.0002	.0000
#3	.0001	.0007	.0025	.0169	.0371	.0004	-.0018	.0002	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0266	.0003	.0003	.0004	.0078	.0001	<.0000	.0126	.0008
Stddev	.0124	.0001	.0005	.0002	.0012	.0011	.0003	.0014	.0002
%RSD	46.73	29.72	158.4	48.32	15.01	869.3	34.31	11.49	22.25
#1	.0187	.0004	.0003	.0002	.0075	-.0008	-.0006	.0132	.0009
#2	.0410	.0002	.0008	.0005	.0090	.0014	-.0006	.0136	.0006
#3	.0201	.0003	-.0002	.0005	.0067	-.0002	-.0010	.0109	.0010
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: MB 160-159967/1-A Acquired: 12/5/2014 13:32:03 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005	<.0000	<.0000	<.0000	.0045	.0001	.0135
Stddev	.0000	.0029	.0003	.0006	.0222	.0024	.0002
%RSD	1.098	358.8	86.29	135.1	492.9	1815.	1.442
#1	.0005	.0025	-.0005	.0001	.0252	.0011	.0135
#2	.0005	-.0018	-.0006	-.0004	.0073	-.0026	.0132
#3	.0005	-.0030	.0000	-.0010	-.0190	.0018	.0136
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4629.6
Stddev	52.2
%RSD	1.1282
#1	4617.1
#2	4687.0
#3	4584.8

Sample Name: LCS 160-159967/2-A Acquired: 12/5/2014 13:36:00 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2076**	**9.805**	**1.010**	**1.948**	**1.001**	**1.005**	**1.066**	**11.09**	**1.009**
Stddev	.0046	.099	.013	.024	.008	.010	.016	.16	.015
%RSD	2.204	1.006	1.327	1.212	.8373	1.014	1.510	1.483	1.467
#1	.2032	9.694	.9949	1.921	.9915	.9937	1.048	10.90	.9924
#2	.2071	9.836	1.013	1.961	1.006	1.011	1.073	11.15	1.012
#3	.2123	9.884	1.021	1.962	1.006	1.012	1.078	11.21	1.021
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.107**	**1.059**	**1.057**	**10.23**	**9.785**	**1.001**	**9.703**	**1.014**	**.5486**
Stddev	.017	.024	.020	.11	.080	.006	.129	.009	.0080
%RSD	1.518	2.221	1.916	1.026	.8216	.6390	1.326	.8674	1.459
#1	1.088	1.037	1.036	10.11	9.693	.9933	9.559	1.004	.5396
#2	1.113	1.057	1.059	10.29	9.827	1.004	9.744	1.019	.5511
#3	1.119	1.084	1.076	10.29	9.836	1.005	9.806	1.019	.5550
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.805**	**1.077**	**1.073**	**1.093**	**10.30**	**.5245**	**.5080**	**.0308**	**1.102**
Stddev	.097	.016	.018	.016	.17	.0097	.0073	.0023	.017
%RSD	.9894	1.456	1.728	1.502	1.670	1.854	1.442	7.410	1.533
#1	9.693	1.059	1.052	1.075	10.12	.5151	.5007	.0285	1.082
#2	9.862	1.081	1.079	1.098	10.34	.5239	.5079	.0330	1.108
#3	9.860	1.089	1.087	1.107	10.46	.5345	.5154	.0310	1.114
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LCS 160-159967/2-A Acquired: 12/5/2014 13:36:00 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.028	1.039	1.031	.2220	1.109	.9988	1.050
Stddev	.010	.020	.009	.0032	.042	.0141	.016
%RSD	.9565	1.961	.9248	1.450	3.745	1.409	1.507
#1	1.017	1.018	1.020	.2183	1.077	.9833	1.032
#2	1.033	1.041	1.036	.2234	1.095	1.002	1.054
#3	1.034	1.059	1.037	.2243	1.156	1.011	1.063
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4461.3
Stddev	53.4
%RSD	1.1980
#1	4521.8
#2	4441.5
#3	4420.6

Sample Name: 160-9191-A-1-A Acquired: 12/5/2014 13:39:27 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0087	.0008	.0223	.0542	.0001	<.0000	44.60	.0001
Stddev	.0003	.0039	.0008	.0035	.0003	.0000	.0024	.23	.0002
%RSD	339.4	44.98	96.10	15.88	.5468	38.83	304.8	.5220	157.9
#1	.0002	.0050	.0012	.0182	.0545	.0001	.0005	44.46	.0003
#2	-.0004	.0128	.0013	.0242	.0541	.0000	.0007	44.87	-.0001
#3	-.0001	.0083	-.0001	.0243	.0539	.0001	-.0035	44.46	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.1192	.0032	.0121	4.673	.0081	15.07	.0004	.0068
Stddev	.0001	.0018	.0016	.0015	.060	.0007	.08	.0003	.0001
%RSD	50.34	1.500	49.92	12.54	1.281	8.524	.5073	60.71	1.972
#1	-.0001	.1179	.0050	.0114	4.730	.0075	15.04	.0006	.0067
#2	-.0001	.1213	.0026	.0110	4.677	.0088	15.16	.0006	.0069
#3	-.0002	.1185	.0020	.0138	4.611	.0080	15.02	.0001	.0069
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	17.09	.0069	.0188	.0032	8.043	.0024	.0032	21.80	<.0000
Stddev	.15	.0002	.0005	.0006	.026	.0015	.0002	.07	.0004
%RSD	.8571	3.109	2.562	19.91	.3292	61.96	5.812	.3197	181.8
#1	17.24	.0069	.0188	.0038	8.044	.0009	.0031	21.80	.0002
#2	17.09	.0066	.0193	.0033	8.069	.0039	.0031	21.86	-.0005
#3	16.94	.0070	.0184	.0025	8.016	.0024	.0035	21.72	-.0004
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9191-A-1-A Acquired: 12/5/2014 13:39:27 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1737	.0024	.0013	.0012	.0135	.0269	.0087
Stddev	.0013	.0019	.0005	.0010	.0085	.0003	.0000
%RSD	.7518	78.10	40.54	88.42	63.06	1.176	.2923
#1	.1748	.0043	.0014	.0023	.0227	.0265	.0087
#2	.1739	.0005	.0018	.0007	.0059	.0270	.0088
#3	.1723	.0025	.0007	.0005	.0119	.0271	.0087
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4593.1
Stddev	22.7
%RSD	.49521
#1	4613.1
#2	4568.4
#3	4597.8

Sample Name: 160-9191-A-2-A Acquired: 12/5/2014 13:43:16 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0583	.0004	.0311	.0541	.0000	.0000	45.16	<.0000
Stddev	.0002	.0032	.0004	.0024	.0002	.0000	.0019	.35	.0000
%RSD	324.0	5.404	100.6	7.773	.3814	144.0	4187.	.7725	624.6
#1	.0000	.0553	.0009	.0284	.0541	.0000	-.0016	44.94	.0000
#2	-.0003	.0580	.0002	.0316	.0543	.0000	-.0003	44.98	.0000
#3	.0001	.0616	.0002	.0332	.0539	.0000	.0021	45.56	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.1240	.0005	.0194	4.619	.0068	15.17	.0005	.0067
Stddev	.0000	.0005	.0011	.0020	.009	.0004	.16	.0003	.0001
%RSD	8728.	.3758	250.1	10.38	.1864	6.103	1.064	58.18	.9909
#1	.0000	.1235	.0018	.0189	4.628	.0067	15.07	.0009	.0066
#2	.0000	.1244	-.0002	.0178	4.611	.0072	15.09	.0004	.0067
#3	.0000	.1242	-.0002	.0217	4.618	.0064	15.36	.0003	.0067
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	16.97	.0071	.0187	.0039	8.001	.0029	.0027	21.83	<.0000
Stddev	.09	.0001	.0009	.0001	.071	.0021	.0017	.04	.0002
%RSD	.5136	1.192	4.716	3.811	.8926	72.13	63.72	.1793	61.11
#1	17.04	.0070	.0185	.0039	7.950	.0019	.0023	21.79	-.0005
#2	16.99	.0071	.0180	.0037	7.970	.0015	.0013	21.83	-.0004
#3	16.87	.0072	.0197	.0040	8.082	.0053	.0047	21.87	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9191-A-2-A Acquired: 12/5/2014 13:43:16 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1724	.0003	.0010	<.0000	.0072	.0248	.0113
Stddev	.0009	.0022	.0005	.0011	.0140	.0005	.0002
%RSD	.5002	825.8	52.74	604.3	194.5	2.199	1.334
#1	.1734	.0005	.0012	.0007	.0213	.0253	.0113
#2	.1723	.0023	.0014	.0002	-.0067	.0247	.0111
#3	.1717	-.0020	.0004	-.0014	.0071	.0243	.0114
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4487.8
Stddev	30.3
%RSD	.67528
#1	4507.9
#2	4502.6
#3	4453.0

Sample Name: 160-9191-A-3-A Acquired: 12/5/2014 13:47:06 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**.0183**	**.0020**	**.0218**	**.0549**	**<.0000**	**<.0000**	**46.34**	**.0001**
Stddev	.0004	.0065	.0011	.0012	.0001	.0000	.0002	.22	.0001
%RSD	292.7	35.29	53.40	5.572	.2629	2213.	81.05	.4847	110.8
#1	.0005	.0173	.0014	.0208	.0550	.0000	.0000	46.47	.0001
#2	-.0003	.0124	.0013	.0215	.0548	.0000	-.0004	46.46	.0000
#3	.0003	.0252	.0032	.0231	.0548	.0000	-.0004	46.08	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**<.0000**	**.1265**	**<.0000**	**.0999**	**4.684**	**.0069**	**15.62**	**.0011**	**.0068**
Stddev	.0002	.0009	.0007	.0020	.030	.0012	.05	.0001	.0001
%RSD	157.4	.7411	92.03	1.966	.6519	17.48	.3467	11.45	1.457
#1	.0000	.1267	.0000	.1019	4.650	.0062	15.63	.0010	.0068
#2	-.0001	.1273	-.0011	.0999	4.695	.0082	15.66	.0011	.0068
#3	-.0004	.1255	-.0013	.0980	4.708	.0061	15.55	.0012	.0067
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**17.19**	**.0075**	**.0204**	**.0045**	**8.208**	**.0021**	**.0028**	**22.32**	**<.0000**
Stddev	.05	.0002	.0004	.0005	.038	.0012	.0021	.05	.0009
%RSD	.3010	2.899	2.035	11.61	.4662	60.30	73.12	.2246	149.4
#1	17.24	.0078	.0201	.0047	8.225	.0006	.0012	22.35	-.0012
#2	17.13	.0074	.0202	.0049	8.235	.0029	.0021	22.34	-.0010
#3	17.20	.0074	.0209	.0039	8.164	.0027	.0052	22.26	.0004
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9191-A-3-A Acquired: 12/5/2014 13:47:06 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1745	.0009	.0013	.0000	.0193	.0264	.0074
Stddev	.0004	.0011	.0002	.0005	.0048	.0021	.0001
%RSD	.2350	132.4	17.67	2108.	24.88	7.832	.9052
#1	.1750	.0006	.0011	-.0002	.0216	.0247	.0074
#2	.1741	-.0001	.0016	.0006	.0138	.0257	.0074
#3	.1745	.0021	.0013	-.0003	.0224	.0287	.0073
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4385.3
Stddev	27.0
%RSD	.61459
#1	4365.0
#2	4375.2
#3	4415.9

Sample Name: 160-9191-A-4 Acquired: 12/5/2014 13:50:55 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0081	.0010	.0163	.0544	<.0000	.0009	46.56	.0001
Stddev	.0006	.0062	.0001	.0031	.0001	.0000	.0017	.82	.0000
%RSD	1166.	76.96	15.19	18.89	.1815	19.43	194.0	1.758	42.40
#1	.0003	.0150	.0011	.0148	.0546	.0000	.0025	47.38	.0002
#2	-.0006	.0030	.0008	.0199	.0544	.0000	.0012	46.55	.0001
#3	.0005	.0062	.0010	.0143	.0544	.0000	-.0010	45.75	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.1240	.0018	.0041	4.656	.0074	15.61	.0005	.0069
Stddev	.0001	.0023	.0007	.0013	.037	.0001	.18	.0002	.0003
%RSD	171.8	1.844	38.92	31.57	.7854	1.868	1.155	41.67	4.516
#1	.0002	.1265	.0025	.0056	4.684	.0072	15.76	.0003	.0069
#2	.0000	.1234	.0018	.0031	4.615	.0074	15.66	.0006	.0072
#3	.0000	.1221	.0011	.0037	4.669	.0075	15.41	.0007	.0066
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	17.14	.0072	.0196	.0045	8.173	.0015	.0028	22.22	<.0000
Stddev	.05	.0002	.0005	.0009	.191	.0010	.0011	.04	.0007
%RSD	.2812	2.449	2.448	19.07	2.335	63.08	39.04	.1800	364.7
#1	17.13	.0072	.0200	.0050	8.369	.0004	.0028	22.26	-.0008
#2	17.10	.0074	.0191	.0035	8.163	.0022	.0017	22.21	.0005
#3	17.20	.0071	.0197	.0049	7.988	.0020	.0039	22.18	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9191-A-4 Acquired: 12/5/2014 13:50:55 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1733	.0027	.0010	.0007	.0115	.0263	.0068
Stddev	.0003	.0029	.0006	.0007	.0054	.0014	.0001
%RSD	.1709	104.2	61.15	90.52	46.77	5.401	1.325
#1	.1736	.0018	.0008	.0000	.0114	.0250	.0069
#2	.1730	.0005	.0017	.0013	.0170	.0278	.0068
#3	.1732	.0060	.0005	.0009	.0062	.0262	.0067
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4337.6
Stddev	81.7
%RSD	1.8825
#1	4270.8
#2	4313.4
#3	4428.6

Sample Name: 160-9191-B-9-A Acquired: 12/5/2014 13:54:45 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0112	.0041	.0171	.0372	<.0000	<.0000	57.63	.0001
Stddev	.0004	.0090	.0005	.0029	.0002	.0000	.0004	.49	.0001
%RSD	73.28	79.91	11.54	17.09	.4543	40.01	40.45	.8560	78.47
#1	-.0009	.0211	.0039	.0161	.0370	.0000	-.0015	57.43	.0001
#2	-.0007	.0036	.0038	.0204	.0373	.0000	-.0007	57.27	.0002
#3	-.0001	.0090	.0047	.0149	.0374	.0000	-.0008	58.19	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0434	.0023	.0159	6.804	.0080	16.22	.0021	.0049
Stddev	.0002	.0013	.0012	.0016	.015	.0005	.11	.0002	.0001
%RSD	347.3	3.031	54.07	10.27	.2232	6.746	.6540	11.82	2.211
#1	.0003	.0423	.0018	.0177	6.794	.0076	16.18	.0019	.0050
#2	-.0001	.0431	.0036	.0146	6.822	.0086	16.15	.0020	.0050
#3	.0000	.0449	.0013	.0155	6.798	.0078	16.34	.0024	.0048
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	37.58	.0052	.0248	.0034	33.25	.0028	.0029	17.11	<.0000
Stddev	.10	.0001	.0010	.0006	.27	.0005	.0021	.03	.0002
%RSD	.2645	2.157	3.966	17.85	.8222	15.99	71.42	.1612	70.16
#1	37.58	.0053	.0236	.0037	33.04	.0025	.0031	17.08	-.0006
#2	37.67	.0053	.0254	.0038	33.15	.0027	.0007	17.12	-.0002
#3	37.47	.0051	.0253	.0027	33.56	.0033	.0048	17.13	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9191-B-9-A Acquired: 12/5/2014 13:54:45 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3663	.0001	.0017	.0001	.0204	.0119	.0055
Stddev	.0013	.0003	.0009	.0005	.0095	.0017	.0000
%RSD	.3646	236.5	51.84	589.3	46.45	14.21	.6065
#1	.3655	.0001	.0026	.0007	.0197	.0103	.0055
#2	.3679	-.0002	.0008	-.0003	.0113	.0137	.0055
#3	.3656	.0005	.0018	-.0002	.0303	.0118	.0055
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4269.5
Stddev	36.7
%RSD	.85854
#1	4292.5
#2	4288.8
#3	4227.2

Sample Name: 160-9191-B-9-A SD Acquired: 12/5/2014 13:58:37 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=5

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0017	.0010	.0043	.0072	.0000	.0011	11.39	.0001
Stddev	.0003	.0077	.0009	.0003	.0001	.0000	.0007	.20	.0000
%RSD	270.4	459.6	97.77	6.639	1.253	289.7	63.26	1.751	78.55
#1	-.0001	.0104	.0002	.0040	.0073	.0000	.0018	11.62	.0001
#2	.0002	-.0011	.0020	.0043	.0071	.0000	.0005	11.28	.0000
#3	-.0005	-.0043	.0007	.0045	.0071	.0000	.0010	11.27	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0087	.0022	.0021	1.285	.0017	3.038	.0006	.0010
Stddev	.0001	.0002	.0018	.0011	.033	.0004	.044	.0002	.0004
%RSD	40.61	2.752	82.54	55.12	2.581	20.77	1.450	32.00	34.70
#1	-.0003	.0085	.0032	.0019	1.323	.0015	3.089	.0006	.0007
#2	-.0002	.0086	.0001	.0033	1.274	.0021	3.017	.0009	.0014
#3	-.0005	.0090	.0033	.0010	1.259	.0015	3.009	.0005	.0010
Check ?	None	None	None	None	None	None	None	None	None
Value Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.941	.0012	.0048	.0007	6.406	.0017	.0014	3.159	.0001
Stddev	.045	.0003	.0003	.0006	.111	.0005	.0013	.015	.0004
%RSD	.6474	29.45	5.216	90.19	1.734	30.95	94.31	.4797	511.1
#1	6.895	.0015	.0045	.0003	6.534	.0023	-.0001	3.175	.0002
#2	6.941	.0011	.0049	.0003	6.348	.0014	.0017	3.144	.0005
#3	6.985	.0009	.0050	.0013	6.336	.0014	.0024	3.159	-.0004
Check ?	None	None	None	None	None	None	None	None	None
Value Range									

Sample Name: 160-9191-B-9-A SD Acquired: 12/5/2014 13:58:37 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=5

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0688	<.0000	.0002	<.0000	.0291	.0032	.0075
Stddev	.0004	.0030	.0002	.0006	.0026	.0011	.0003
%RSD	.6168	457.1	90.29	62.75	9.002	34.78	3.989
#1	.0683	.0018	.0000	-.0006	.0304	.0045	.0078
#2	.0689	-.0041	.0002	-.0006	.0261	.0024	.0074
#3	.0692	.0002	.0003	-.0016	.0309	.0027	.0072
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4403.2
Stddev	99.8
%RSD	2.2666
#1	4290.0
#2	4440.9
#3	4478.6

Sample Name: 160-9191-B-9-B MS Acquired: 12/5/2014 14:02:31 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2032**	**9.476**	**.9856**	**1.922**	**1.002**	**.9746**	**1.011**	**65.45**	**.9745**
Stddev	.0015	.067	.0120	.018	.007	.0047	.015	.41	.0111
%RSD	.7335	.7061	1.215	.9483	.7084	.4808	1.516	.6273	1.136
#1	.2038	9.507	.9881	1.937	1.007	.9778	1.015	65.37	.9778
#2	.2043	9.522	.9961	1.928	1.005	.9769	1.024	65.89	.9835
#3	.2015	9.399	.9725	1.902	.9938	.9693	.9945	65.08	.9621
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.031**	**1.041**	**.9980**	**9.860**	**16.39**	**.9725**	**25.05**	**.9682**	**.5238**
Stddev	.009	.004	.0071	.035	.08	.0070	.12	.0059	.0057
%RSD	.9087	.4104	.7103	.3527	.5008	.7168	.4940	.6115	1.086
#1	1.031	1.044	.9997	9.859	16.43	.9772	24.98	.9670	.5254
#2	1.040	1.044	1.004	9.895	16.45	.9759	25.19	.9746	.5285
#3	1.021	1.036	.9902	9.825	16.29	.9645	24.98	.9630	.5174
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**46.65**	**1.009**	**1.070**	**1.028**	**42.89**	**.5041**	**.4974**	**16.96**	**1.040**
Stddev	.33	.008	.013	.009	.58	.0062	.0060	.10	.009
%RSD	.7029	.8129	1.231	.8742	1.346	1.238	1.213	.5680	.8641
#1	46.93	1.010	1.074	1.031	43.07	.5058	.4993	16.99	1.043
#2	46.74	1.017	1.081	1.035	43.35	.5093	.5022	17.04	1.047
#3	46.29	1.000	1.055	1.018	42.24	.4972	.4907	16.85	1.030
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9191-B-9-B MS Acquired: 12/5/2014 14:02:31 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.351	.9818	.9925	.2058	1.042	.9654	.9976
Stddev	.010	.0032	.0058	.0033	.018	.0061	.0104
%RSD	.7218	.3242	.5874	1.608	1.694	.6283	1.038
#1	1.360	.9785	.9956	.2052	1.046	.9654	1.000
#2	1.354	.9848	.9962	.2094	1.057	.9714	1.006
#3	1.341	.9823	.9858	.2028	1.023	.9593	.9861
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4457.9
Stddev	25.9
%RSD	.58182
#1	4452.4
#2	4435.1
#3	4486.1

Sample Name: CCV Acquired: 12/5/2014 14:05:58 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.005**	**49.28**	**5.063**	**4.988**	**4.873**	**5.051**	**5.049**	**51.46**	**5.058**
Stddev	.012	.38	.040	.042	.052	.041	.039	.33	.034
%RSD	1.165	.7734	.7908	.8397	1.072	.8027	.7666	.6373	.6737
#1	1.016	49.67	5.093	5.031	4.814	5.015	5.078	51.76	5.084
#2	.9930	48.92	5.018	4.947	4.894	5.095	5.005	51.11	5.019
#3	1.005	49.24	5.078	4.985	4.912	5.043	5.064	51.53	5.070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.123**	**5.159**	**5.045**	**50.52**	**49.96**	**4.967**	**49.99**	**5.059**	**1.016**
Stddev	.041	.049	.032	.39	.23	.021	.51	.042	.009
%RSD	.8085	.9431	.6280	.7744	.4627	.4257	1.026	.8312	.8848
#1	5.155	5.200	5.074	50.93	50.17	4.988	50.52	5.103	1.022
#2	5.077	5.105	5.011	50.15	49.71	4.946	49.49	5.019	1.005
#3	5.138	5.171	5.052	50.48	50.01	4.967	49.97	5.056	1.019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**49.68**	**5.145**	**51.85**	**5.157**	**50.14**	**1.001**	**1.013**	**4.961**	**5.134**
Stddev	.28	.038	.39	.044	.36	.006	.009	.027	.045
%RSD	.5658	.7466	.7605	.8446	.7265	.6305	.8429	.5439	.8737
#1	49.96	5.173	52.16	5.189	50.39	1.008	1.016	4.988	5.172
#2	49.40	5.101	51.41	5.108	49.72	.9953	1.003	4.934	5.085
#3	49.69	5.159	51.98	5.175	50.30	1.000	1.019	4.962	5.145
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: CCV Acquired: 12/5/2014 14:05:58 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.054**	**5.094**	**5.005**	**1.037**	**5.125**	**5.033**	**5.092**
Stddev	.141	.069	.035	.008	.057	.049	.041
%RSD	2.779	1.346	.7069	.7524	1.115	.9654	.8025
#1	4.926	5.156	5.042	1.040	5.183	5.076	5.121
#2	5.031	5.021	4.971	1.028	5.069	4.980	5.045
#3	5.204	5.106	5.003	1.042	5.122	5.044	5.109
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**4353.5**
Stddev	34.4
%RSD	.79056
#1	4326.4
#2	4392.2
#3	4341.7

Sample Name: CCB Acquired: 12/5/2014 14:09:46 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0004	.0000	.0122	.0003	.0000	<.0000	.0008	<.0000
Stddev	.0005	.0055	.0010	.0019	.0001	.0000	.0013	.0009	.0001
%RSD	107.6	1364.	6652.	15.53	23.30	85.28	81.96	112.1	299.4
#1	-.0009	-.0042	-.0003	.0143	.0003	.0000	-.0007	.0010	.0000
#2	-.0001	.0066	.0012	.0109	.0004	.0000	-.0011	.0015	-.0001
#3	-.0003	-.0012	-.0008	.0113	.0003	.0001	-.0032	-.0002	.0000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0010	.0012	<.0000	.0493	.0002	<.0000	.0001	<.0000
Stddev	.0001	.0006	.0018	.0009	.0384	.0009	.0056	.0004	.0001
%RSD	54.87	57.47	145.9	73.77	77.93	419.9	123.1	510.9	201.4
#1	-.0004	.0005	.0026	-.0002	.0049	.0011	-.0072	.0005	-.0001
#2	-.0001	.0009	-.0008	-.0019	.0706	-.0007	.0019	.0000	.0000
#3	-.0002	.0016	.0019	-.0016	.0724	.0003	-.0083	-.0002	.0000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0061	.0002	.0007	.0008	.0015	.0004	<.0000	.0020	.0003
Stddev	.0021	.0003	.0003	.0007	.0022	.0008	.0018	.0008	.0001
%RSD	34.27	213.9	50.04	85.56	142.7	205.7	224.9	40.01	47.10
#1	.0056	-.0002	.0004	.0009	.0041	-.0004	-.0022	.0029	.0002
#2	.0084	.0004	.0011	.0014	.0005	.0012	.0012	.0018	.0005
#3	.0043	.0003	.0006	.0001	.0001	.0004	-.0014	.0014	.0002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Sample Name: CCB Acquired: 12/5/2014 14:09:46 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0020	<.0000	<.0000	.0074	.0012	.0000
Stddev	.0001	.0020	.0007	.0010	.0154	.0021	.0001
%RSD	3489.	103.2	664.5	700.0	208.7	182.3	166.4
#1	.0001	.0043	-.0006	.0010	.0190	-.0007	.0001
#2	-.0001	.0004	.0007	-.0003	-.0101	.0008	.0000
#3	.0000	.0013	-.0003	-.0011	.0133	.0034	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_3710
Units	Cts/S
Avg	4316.8
Stddev	59.1
%RSD	1.3682
#1	4373.2
#2	4255.4
#3	4321.9

Sample Name: 160-9191-B-9-C MSD Acquired: 12/5/2014 14:13:43 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2022	9.500	.9990	1.916	.9967	.9762	1.038	66.68	.9875
Stddev	.0008	.068	.0074	.013	.0068	.0049	.012	.06	.0071
%RSD	.3741	.7118	.7423	.6553	.6825	.5056	1.128	.0858	.7145
#1	.2026	9.422	.9918	1.906	.9894	.9709	1.031	66.66	.9818
#2	.2014	9.542	.9987	1.912	1.003	.9806	1.033	66.64	.9854
#3	.2028	9.536	1.007	1.930	.9979	.9770	1.052	66.75	.9954
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.049	1.058	1.021	9.887	16.35	.9647	25.44	.9721	.5451
Stddev	.005	.002	.008	.042	.14	.0081	.10	.0030	.0038
%RSD	.5096	.2250	.7716	.4246	.8418	.8372	.3916	.3039	.6882
#1	1.045	1.055	1.015	9.838	16.20	.9555	25.33	.9687	.5418
#2	1.046	1.058	1.018	9.912	16.47	.9707	25.51	.9731	.5443
#3	1.055	1.060	1.030	9.909	16.36	.9678	25.48	.9744	.5492
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	46.79	1.027	1.081	1.039	43.54	.5257	.5021	17.06	1.074
Stddev	.36	.004	.005	.005	.33	.0039	.0056	.07	.005
%RSD	.7778	.4271	.5086	.4423	.7664	.7435	1.114	.4216	.4943
#1	46.39	1.024	1.077	1.035	43.31	.5240	.4996	16.98	1.069
#2	47.10	1.024	1.079	1.038	43.39	.5230	.4982	17.11	1.073
#3	46.87	1.032	1.088	1.044	43.92	.5302	.5085	17.10	1.080
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9191-B-9-C MSD Acquired: 12/5/2014 14:13:43 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.350	.9998	1.013	.2069	1.047	.9701	1.017
Stddev	.010	.0007	.005	.0011	.017	.0085	.007
%RSD	.7254	.0687	.4842	.5552	1.587	.8754	.6638
#1	1.340	1.000	1.007	.2063	1.034	.9604	1.012
#2	1.359	.9991	1.016	.2061	1.066	.9761	1.015
#3	1.352	.9999	1.016	.2082	1.041	.9738	1.025
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4315.2
Stddev	1.6
%RSD	.03641
#1	4317.0
#2	4314.4
#3	4314.2

Sample Name: 160-9191-A-10-A Acquired: 12/5/2014 14:17:08 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.1156	.0044	.0219	.0409	.0000	.0013	57.78	.0002
Stddev	.0006	.0030	.0006	.0025	.0001	.0000	.0022	.39	.0001
%RSD	92.11	2.616	14.20	11.34	.1384	143.1	172.6	.6794	89.61
#1	.0000	.1130	.0051	.0229	.0410	.0000	.0024	57.71	.0000
#2	-.0008	.1148	.0039	.0237	.0408	.0000	.0028	57.42	.0003
#3	-.0013	.1189	.0043	.0191	.0409	.0001	-.0013	58.20	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0446	.0021	.2125	7.082	.0097	16.11	.0068	.0050
Stddev	.0002	.0011	.0019	.0015	.028	.0003	.05	.0001	.0002
%RSD	769.7	2.567	88.02	.6893	.3914	3.256	.3347	1.013	3.842
#1	-.0001	.0441	.0038	.2139	7.114	.0094	16.10	.0069	.0051
#2	.0000	.0438	.0024	.2110	7.070	.0100	16.07	.0067	.0052
#3	.0002	.0459	.0001	.2126	7.062	.0098	16.17	.0068	.0048
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	38.62	.0058	.0300	.0033	33.75	.0017	.0015	17.53	<.0000
Stddev	.11	.0004	.0011	.0001	.34	.0009	.0017	.05	.0003
%RSD	.2798	7.077	3.752	1.811	.9999	55.30	112.0	.3012	125.9
#1	38.74	.0062	.0309	.0033	33.82	.0006	.0031	17.55	-.0005
#2	38.52	.0054	.0287	.0033	33.38	.0024	.0016	17.47	-.0001
#3	38.61	.0059	.0303	.0032	34.05	.0019	-.0002	17.56	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9191-A-10-A Acquired: 12/5/2014 14:17:08 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3822	.0003	.0073	<.0000	.0097	.0118	.0073
Stddev	.0014	.0036	.0004	.0003	.0085	.0024	.0001
%RSD	.3649	1019.	5.391	83.57	87.49	20.00	1.338
#1	.3836	.0033	.0069	.0000	.0184	.0112	.0074
#2	.3808	-.0036	.0077	-.0006	.0014	.0144	.0073
#3	.3822	.0014	.0074	-.0005	.0095	.0098	.0073
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4444.0
Stddev	27.6
%RSD	.62182
#1	4425.6
#2	4475.8
#3	4430.6

Sample Name: MB 160-159042/1-A Acquired: 12/5/2014 14:21:00 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0040	.0005	.0011	<.0000	<.0000	<.0000	.0484	.0000
Stddev	.0005	.0071	.0010	.0030	.0003	.0000	.0005	.0002	.0001
%RSD	740.4	178.9	187.2	264.2	13680.	170.2	113.5	.4090	418.6
#1	.0005	-.0036	.0008	.0009	-.0003	.0000	-.0002	.0485	-.0001
#2	-.0005	.0105	.0014	.0042	.0001	.0000	-.0011	.0485	.0000
#3	-.0002	.0050	-.0006	-.0017	.0001	.0000	-.0002	.0481	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0006	.0003	.0044	.0309	.0001	<.0000	<.0000	.0001
Stddev	.0002	.0004	.0004	.0021	.0188	.0006	.0109	.0001	.0000
%RSD	66.25	68.26	114.7	48.52	60.65	446.0	224.5	288.2	30.19
#1	-.0003	.0001	.0005	.0047	.0442	.0001	-.0044	-.0001	.0001
#2	-.0004	.0008	.0007	.0064	.0391	-.0004	-.0160	.0001	.0001
#3	-.0001	.0009	-.0001	.0021	.0095	.0008	.0058	-.0002	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0246	.0003	.0008	.0001	.0080	.0010	.0001	.0140	.0006
Stddev	.0070	.0001	.0005	.0004	.0021	.0011	.0012	.0035	.0006
%RSD	28.59	39.14	54.98	439.1	26.33	116.7	2425.	24.97	97.04
#1	.0307	.0004	.0004	.0005	.0090	.0008	.0015	.0132	.0007
#2	.0263	.0003	.0009	-.0002	.0094	-.0001	-.0005	.0109	.0000
#3	.0169	.0002	.0013	-.0001	.0055	.0022	-.0008	.0178	.0012
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: MB 160-159042/1-A Acquired: 12/5/2014 14:21:00 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	<.0000	.0002	<.0000	<.0000	.0017	.0101
Stddev	.0000	.0059	.0001	.0004	.0123	.0034	.0000
%RSD	29.40	1875.	61.62	55.93	1107.	194.1	.4719
#1	.0001	-.0071	.0001	-.0013	.0098	.0006	.0101
#2	.0001	.0041	.0003	-.0005	.0014	.0055	.0101
#3	.0002	.0020	.0001	-.0006	-.0145	-.0010	.0102
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4533.6
Stddev	24.6
%RSD	.54215
#1	4550.1
#2	4505.3
#3	4545.3

Sample Name: LCS 160-159042/2-A Acquired: 12/5/2014 14:24:56 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2028	9.973	1.034	2.003	1.038	1.044	1.053	11.49	1.042
Stddev	.0031	.011	.024	.011	.005	.002	.024	.23	.024
%RSD	1.506	.1141	2.276	.5690	.5106	.1629	2.241	1.989	2.316
#1	.2008	9.983	1.009	1.998	1.044	1.042	1.029	11.24	1.016
#2	.2013	9.961	1.035	1.995	1.038	1.045	1.056	11.55	1.045
#3	.2063	9.977	1.056	2.016	1.033	1.045	1.076	11.69	1.064
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.137	1.076	1.089	10.54	10.10	1.027	9.850	1.029	.5450
Stddev	.024	.019	.025	.07	.04	.009	.155	.007	.0127
%RSD	2.136	1.744	2.345	.6417	.3515	.8248	1.575	.6675	2.337
#1	1.112	1.057	1.063	10.47	10.06	1.037	9.701	1.023	.5319
#2	1.141	1.075	1.090	10.56	10.11	1.025	9.839	1.028	.5458
#3	1.160	1.095	1.114	10.60	10.13	1.020	10.01	1.037	.5573
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.21	1.109	1.098	1.115	10.20	.5220	.5228	.0299	1.089
Stddev	.04	.023	.022	.023	.26	.0121	.0134	.0028	.024
%RSD	.3861	2.092	2.029	2.087	2.541	2.319	2.555	9.521	2.168
#1	10.26	1.084	1.075	1.091	9.925	.5110	.5091	.0287	1.063
#2	10.18	1.112	1.099	1.116	10.24	.5199	.5233	.0332	1.093
#3	10.20	1.130	1.119	1.138	10.44	.5350	.5358	.0279	1.110
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LCS 160-159042/2-A Acquired: 12/5/2014 14:24:56 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.070	1.059	1.022	.2254	1.089	1.010	1.068
Stddev	.005	.016	.002	.0043	.019	.001	.024
%RSD	.4318	1.462	.1865	1.894	1.743	.1194	2.270
#1	1.075	1.045	1.021	.2206	1.089	1.011	1.042
#2	1.070	1.057	1.021	.2270	1.069	1.009	1.071
#3	1.065	1.076	1.025	.2286	1.107	1.010	1.090
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4462.6
Stddev	71.5
%RSD	1.6013
#1	4537.9
#2	4454.1
#3	4395.7

Sample Name: 160-9209-D-1-A Acquired: 12/5/2014 14:28:23 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0161	.0054	.0583	.0785	<.0000	<.0000	79.44	<.0000
Stddev	.0003	.0052	.0003	.0021	.0003	.0000	.0015	.75	.0001
%RSD	43.58	31.98	5.738	3.615	.3640	83.23	51.10	.9497	2414.
#1	-.0004	.0218	.0056	.0601	.0788	-.0001	-.0042	80.30	.0000
#2	-.0010	.0118	.0051	.0560	.0785	.0000	-.0035	78.91	-.0001
#3	-.0006	.0148	.0056	.0588	.0782	.0000	-.0013	79.11	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	.0175	.0021	.0879	8.951	.0093	21.70	.0065	.0053
Stddev	.0002	.0000	.0002	.0021	.028	.0010	.04	.0002	.0003
%RSD	94.06	.2481	10.13	2.373	.3107	10.44	.1739	2.988	4.967
#1	.0003	.0175	.0023	.0861	8.949	.0103	21.72	.0063	.0056
#2	.0000	.0175	.0021	.0874	8.925	.0084	21.65	.0067	.0052
#3	.0002	.0176	.0019	.0902	8.980	.0093	21.71	.0064	.0051
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	33.95	.0358	.0231	.0038	33.63	.0026	.0063	18.80	<.0000
Stddev	.11	.0004	.0001	.0002	.41	.0013	.0018	.02	.0004
%RSD	.3202	1.068	.4574	4.780	1.220	48.46	29.21	.0841	43.60
#1	34.06	.0361	.0232	.0038	34.10	.0040	.0083	18.81	-.0007
#2	33.96	.0354	.0231	.0040	33.34	.0017	.0058	18.80	-.0014
#3	33.84	.0359	.0230	.0037	33.45	.0021	.0047	18.78	-.0007
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9209-D-1-A Acquired: 12/5/2014 14:28:23 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3970	.0012	.0023	<.0000	.0319	.0183	.0090
Stddev	.0009	.0048	.0002	.0002	.0008	.0009	.0002
%RSD	.2317	415.9	9.332	114.8	2.365	5.127	1.812
#1	.3978	.0058	.0022	.0000	.0325	.0174	.0092
#2	.3972	-.0037	.0025	-.0004	.0322	.0183	.0089
#3	.3960	.0014	.0021	-.0001	.0310	.0193	.0090
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4433.6
Stddev	17.6
%RSD	.39771
#1	4428.9
#2	4453.1
#3	4418.7

Sample Name: 160-9209-A-2-A Acquired: 12/5/2014 14:32:15 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	.0050	.0585	.0736	<.0000	.0002	77.45	.0000
Stddev	.0003	.0059	.0008	.0027	.0000	.0000	.0005	.09	.0001
%RSD	43.13	97.66	15.08	4.686	.0384	87.14	229.3	.1212	234.6
#1	-.0005	-.0112	.0049	.0560	.0735	.0000	.0007	77.48	-.0001
#2	-.0004	.0004	.0043	.0581	.0736	-.0001	-.0003	77.52	.0000
#3	-.0009	-.0073	.0058	.0615	.0736	.0000	.0002	77.34	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	.0069	.0019	.0318	8.485	.0087	20.92	.0062	.0054
Stddev	.0002	.0004	.0007	.0006	.048	.0001	.05	.0002	.0001
%RSD	53.39	6.475	36.09	1.870	.5687	1.277	.2220	3.726	1.217
#1	.0002	.0069	.0018	.0313	8.456	.0086	20.97	.0063	.0055
#2	.0005	.0073	.0026	.0325	8.457	.0087	20.91	.0059	.0054
#3	.0003	.0064	.0012	.0316	8.540	.0089	20.88	.0063	.0054
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	31.57	.0355	.0217	.0030	32.63	.0031	.0072	17.89	<.0000
Stddev	.06	.0001	.0005	.0009	.31	.0007	.0017	.07	.0006
%RSD	.1849	.2244	2.444	30.26	.9353	23.22	23.08	.3981	128.1
#1	31.55	.0355	.0222	.0027	32.93	.0026	.0061	17.96	-.0011
#2	31.53	.0356	.0218	.0024	32.63	.0027	.0091	17.82	.0000
#3	31.64	.0355	.0211	.0041	32.32	.0039	.0064	17.89	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9209-A-2-A Acquired: 12/5/2014 14:32:15 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3700	.0026	.0018	<.0000	.0404	.0179	.0090
Stddev	.0006	.0021	.0008	.0000	.0128	.0009	.0000
%RSD	.1628	79.50	46.46	7.152	31.62	4.964	.4642
#1	.3694	.0044	.0019	-.0004	.0551	.0169	.0090
#2	.3700	.0031	.0024	-.0005	.0342	.0181	.0091
#3	.3706	.0004	.0009	-.0004	.0319	.0187	.0090
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4343.0
Stddev	30.0
%RSD	.68990
#1	4323.8
#2	4327.6
#3	4377.5

Sample Name: 160-9209-B-3-A Acquired: 12/5/2014 14:36:09 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0233	<.0000	.0339	.0578	<.0000	.0007	63.70	.0001
Stddev	.0006	.0056	.0011	.0036	.0002	.0000	.0017	.68	.0001
%RSD	475.1	24.19	270.0	10.67	.3496	107.7	232.9	1.063	131.7
#1	.0005	.0237	-.0009	.0344	.0575	-.0001	.0025	62.94	.0001
#2	-.0002	.0175	.0009	.0301	.0579	.0000	.0004	64.22	.0000
#3	-.0007	.0288	-.0012	.0373	.0579	.0000	-.0008	63.96	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0156	.0072	.1002	4.882	.0057	19.35	.0039	.0053
Stddev	.0002	.0010	.0006	.0018	.009	.0009	.24	.0001	.0001
%RSD	484.4	6.367	8.998	1.829	.1753	16.44	1.230	2.183	2.517
#1	-.0001	.0154	.0071	.0998	4.873	.0067	19.09	.0038	.0052
#2	.0001	.0167	.0079	.0986	4.883	.0049	19.42	.0040	.0052
#3	.0001	.0148	.0066	.1022	4.890	.0054	19.55	.0040	.0054
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	22.72	.0121	.0128	.0038	12.58	.0020	.0013	21.20	<.0000
Stddev	.10	.0001	.0006	.0012	.11	.0009	.0019	.13	.0000
%RSD	.4270	1.190	4.356	32.21	.9029	43.43	147.9	.5895	3.633
#1	22.62	.0120	.0123	.0025	12.48	.0011	-.0009	21.06	-.0007
#2	22.81	.0123	.0127	.0041	12.70	.0022	.0024	21.25	-.0007
#3	22.74	.0122	.0134	.0049	12.56	.0028	.0025	21.29	-.0006
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9209-B-3-A Acquired: 12/5/2014 14:36:09 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2331	.0004	.0020	<.0000	.0105	.0205	.0093
Stddev	.0003	.0010	.0008	.0003	.0135	.0023	.0001
%RSD	.1188	263.6	41.23	17.47	128.5	11.10	1.104
#1	.2330	-.0005	.0028	-.0020	.0243	.0182	.0092
#2	.2334	.0015	.0012	-.0017	-.0026	.0227	.0094
#3	.2330	.0002	.0019	-.0014	.0097	.0206	.0093
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4392.2
Stddev	51.3
%RSD	1.1672
#1	4451.3
#2	4365.3
#3	4360.0

Sample Name: 160-9209-B-3-A SD Acquired: 12/5/2014 14:40:01 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=5

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0023	<.0000	.0072	.0111	.0000	<.0000	12.89	.0000
Stddev	.0004	.0075	.0010	.0037	.0002	.0000	.0016	.21	.0001
%RSD	81.46	328.1	105.9	51.37	1.465	642.2	146.9	1.598	587.1
#1	-.0008	.0101	-.0015	.0038	.0110	.0000	.0003	12.66	.0001
#2	-.0006	.0015	.0002	.0067	.0113	.0000	-.0008	12.93	.0000
#3	.0000	-.0047	-.0015	.0111	.0112	.0000	-.0029	13.07	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0033	.0029	.0180	.9725	.0003	3.702	.0005	.0010
Stddev	.0002	.0009	.0010	.0008	.0023	.0009	.022	.0001	.0001
%RSD	63.82	28.06	33.25	4.297	.2380	292.7	.6068	19.27	13.54
#1	-.0001	.0043	.0020	.0172	.9739	.0013	3.677	.0004	.0009
#2	-.0006	.0032	.0029	.0180	.9738	.0000	3.719	.0005	.0011
#3	-.0004	.0024	.0039	.0188	.9699	-.0004	3.711	.0006	.0011
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.293	.0025	.0023	.0013	2.444	.0018	.0004	4.004	<.0000
Stddev	.020	.0002	.0005	.0004	.043	.0009	.0015	.008	.0003
%RSD	.4552	8.536	20.76	32.95	1.782	52.40	342.0	.1929	419.3
#1	4.315	.0026	.0027	.0013	2.399	.0009	-.0010	3.996	-.0004
#2	4.276	.0026	.0018	.0018	2.449	.0028	.0019	4.006	.0003
#3	4.289	.0022	.0025	.0009	2.485	.0018	.0005	4.011	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9209-B-3-A SD Acquired: 12/5/2014 14:40:01 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=5

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0449	<.0000	.0003	.0004	<.0000	.0072	.0077
Stddev	.0001	.0024	.0001	.0006	.0165	.0009	.0001
%RSD	.2819	686.4	38.56	151.9	325.0	12.74	.6590
#1	.0450	.0017	.0002	.0007	.0044	.0082	.0077
#2	.0449	-.0030	.0003	.0009	.0045	.0071	.0077
#3	.0448	.0002	.0003	-.0003	-.0242	.0064	.0078
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4421.4
Stddev	26.3
%RSD	.59588
#1	4450.2
#2	4398.5
#3	4415.7

Sample Name: 160-9209-B-3-B MS Acquired: 12/5/2014 14:43:54 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2039**	**9.379**	**.9914**	**1.980**	**1.015**	**.9665**	**1.011**	**71.25**	**.9892**
Stddev	.0029	.047	.0057	.009	.003	.0029	.011	.37	.0071
%RSD	1.407	.5024	.5747	.4720	.2854	.3051	1.048	.5142	.7176
#1	.2006	9.372	.9890	1.969	1.014	.9649	1.006	71.09	.9867
#2	.2052	9.430	.9979	1.986	1.018	.9699	1.023	71.67	.9972
#3	.2059	9.336	.9873	1.985	1.012	.9647	1.004	70.99	.9837
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.028**	**1.007**	**1.003**	**9.764**	**14.70**	**.9820**	**28.06**	**.9643**	**.5089**
Stddev	.006	.012	.005	.038	.04	.0050	.19	.0064	.0037
%RSD	.5996	1.227	.4544	.3923	.2689	.5096	.6636	.6604	.7324
#1	1.025	.9923	.9997	9.724	14.70	.9814	27.87	.9577	.5065
#2	1.035	1.014	1.008	9.801	14.73	.9872	28.24	.9704	.5132
#3	1.024	1.014	1.000	9.765	14.66	.9773	28.07	.9650	.5070
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**32.36**	**1.011**	**1.067**	**1.044**	**22.57**	**.4940**	**.5052**	**21.23**	**1.008**
Stddev	.13	.006	.006	.006	.18	.0040	.0018	.11	.007
%RSD	.4069	.5980	.5630	.5740	.8031	.8073	.3588	.5190	.6752
#1	32.33	1.008	1.067	1.040	22.54	.4913	.5036	21.18	1.004
#2	32.51	1.017	1.072	1.051	22.77	.4986	.5072	21.35	1.016
#3	32.25	1.006	1.060	1.042	22.41	.4921	.5047	21.15	1.004
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9209-B-3-B MS Acquired: 12/5/2014 14:43:54 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.211	.9785	.9522	.2122	1.060	.9721	1.003
Stddev	.003	.0096	.0040	.0009	.020	.0073	.007
%RSD	.2299	.9770	.4161	.4209	1.927	.7472	.7217
#1	1.212	.9687	.9496	.2117	1.037	.9681	1.001
#2	1.213	.9878	.9568	.2132	1.067	.9805	1.012
#3	1.208	.9788	.9502	.2117	1.076	.9678	.9976
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4371.6
Stddev	30.2
%RSD	.69129
#1	4402.1
#2	4341.7
#3	4371.1

Sample Name: 160-9209-B-3-C MSD Acquired: 12/5/2014 14:47:20 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2049**	**9.528**	**1.013**	**1.983**	**1.028**	**.9810**	**1.024**	**74.22**	**1.009**
Stddev	.0016	.034	.004	.015	.002	.0019	.004	.37	.004
%RSD	.7779	.3574	.4428	.7488	.1758	.1949	.3728	.4960	.4478
#1	.2033	9.491	1.008	1.973	1.027	.9791	1.021	73.81	1.004
#2	.2065	9.558	1.017	2.000	1.030	.9829	1.028	74.51	1.013
#3	.2048	9.534	1.015	1.976	1.026	.9811	1.024	74.35	1.011
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.052**	**1.036**	**1.033**	**9.982**	**14.88**	**.9817**	**29.10**	**.9811**	**.5227**
Stddev	.004	.010	.003	.032	.03	.0022	.16	.0062	.0024
%RSD	.3465	.9502	.3012	.3199	.2080	.2269	.5401	.6328	.4621
#1	1.048	1.030	1.030	9.947	14.84	.9794	28.92	.9739	.5199
#2	1.054	1.047	1.035	9.989	14.90	.9838	29.17	.9845	.5241
#3	1.053	1.031	1.034	10.01	14.89	.9819	29.22	.9848	.5241
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**32.75**	**1.035**	**1.092**	**1.062**	**23.19**	**.5048**	**.5128**	**21.86**	**1.025**
Stddev	.09	.004	.003	.005	.09	.0027	.0027	.11	.006
%RSD	.2886	.4369	.2711	.5010	.3686	.5270	.5183	.5100	.5721
#1	32.75	1.030	1.091	1.056	23.10	.5035	.5103	21.73	1.019
#2	32.84	1.038	1.095	1.066	23.27	.5079	.5126	21.93	1.030
#3	32.65	1.037	1.090	1.065	23.20	.5031	.5156	21.91	1.027
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9209-B-3-C MSD Acquired: 12/5/2014 14:47:20 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.229	.9991	.9639	.2145	1.070	.9886	1.094
Stddev	.002	.0118	.0037	.0002	.017	.0072	.004
%RSD	.1977	1.184	.3795	.0840	1.597	.7282	.3717
#1	1.228	.9900	.9597	.2147	1.054	.9803	1.090
#2	1.232	1.012	.9655	.2143	1.088	.9935	1.097
#3	1.227	.9947	.9665	.2146	1.069	.9919	1.096
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4309.9
Stddev	25.9
%RSD	.60035
#1	4339.7
#2	4296.5
#3	4293.5

Sample Name: CCV Acquired: 12/5/2014 14:50:47 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.9955**	**48.52**	**5.209**	**4.879**	**4.908**	**4.956**	**5.183**	**52.33**	**5.179**
Stddev	.0073	.19	.020	.008	.032	.063	.014	.27	.018
%RSD	.7329	.3864	.3735	.1667	.6566	1.273	.2776	.5124	.3401
#1	.9950	48.32	5.197	4.871	4.888	5.026	5.184	52.21	5.173
#2	.9885	48.57	5.198	4.887	4.891	4.904	5.169	52.15	5.165
#3	1.003	48.68	5.231	4.881	4.946	4.937	5.198	52.64	5.199
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.248**	**5.210**	**5.177**	**50.43**	**49.38**	**4.865**	**49.84**	**5.024**	**1.048**
Stddev	.018	.033	.018	.22	.05	.011	.34	.028	.004
%RSD	.3354	.6401	.3407	.4291	.1036	.2211	.6801	.5485	.3973
#1	5.236	5.212	5.172	50.25	49.33	4.853	49.56	5.000	1.046
#2	5.239	5.175	5.162	50.35	49.44	4.875	49.74	5.018	1.046
#3	5.268	5.242	5.196	50.67	49.38	4.868	50.22	5.054	1.053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**48.30**	**5.275**	**53.08**	**5.305**	**51.65**	**1.031**	**1.038**	**4.892**	**5.277**
Stddev	.08	.022	.19	.022	.17	.001	.004	.026	.022
%RSD	.1561	.4094	.3583	.4097	.3319	.0832	.3597	.5295	.4233
#1	48.26	5.263	53.00	5.291	51.53	1.032	1.038	4.864	5.268
#2	48.39	5.261	52.93	5.294	51.57	1.031	1.035	4.915	5.260
#3	48.26	5.299	53.29	5.330	51.85	1.031	1.042	4.896	5.302
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: CCV Acquired: 12/5/2014 14:50:47 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.965**	**5.024**	**4.950**	**1.060**	**5.107**	**4.971**	**5.225**
Stddev	.062	.029	.016	.004	.041	.021	.017
%RSD	1.241	.5702	.3178	.3848	.8028	.4273	.3158
#1	4.993	5.020	4.934	1.058	5.113	4.948	5.215
#2	4.894	4.998	4.949	1.056	5.064	4.975	5.215
#3	5.007	5.055	4.966	1.064	5.145	4.990	5.244
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**4265.8**
Stddev	25.0
%RSD	.58513
#1	4276.9
#2	4283.2
#3	4237.2

Sample Name: CCB Acquired: 12/5/2014 14:54:36 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0007**	**.0002**	**.0007**	**.0123**	**.0005**	**.0003**	**.0002**	**.0028**	**.0001**
Stddev	.0006	.0043	.0008	.0010	.0000	.0000	.0008	.0009	.0001
%RSD	83.40	2622.	111.4	8.069	7.137	4.579	402.2	31.80	39.03
#1	.0006	.0051	.0017	.0125	.0005	.0003	-.0004	.0035	.0002
#2	.0002	-.0027	.0002	.0113	.0005	.0004	.0012	.0031	.0001
#3	.0013	-.0019	.0003	.0132	.0005	.0003	-.0001	.0018	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**<.0000**	**.0005**	**.0004**	**.0023**	**.0520**	**<.0000**	**.0033**	**.0005**	**<.0000**
Stddev	.0002	.0004	.0001	.0015	.0078	.0007	.0170	.0002	.0003
%RSD	727.7	77.84	28.41	63.50	15.04	522.1	511.4	32.34	134.1
#1	.0000	.0002	.0003	.0013	.0600	-.0007	.0119	.0005	-.0001
#2	-.0002	.0009	.0003	.0017	.0444	.0006	.0143	.0006	.0000
#3	.0001	.0003	.0005	.0040	.0516	-.0003	-.0162	.0003	-.0005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0070**	**.0003**	**.0020**	**.0009**	**.0038**	**.0011**	**.0010**	**.0050**	**.0004**
Stddev	.0040	.0000	.0003	.0004	.0007	.0018	.0001	.0020	.0007
%RSD	56.90	10.55	13.76	41.06	18.30	158.7	13.01	40.45	181.1
#1	.0074	.0003	.0017	.0006	.0041	.0031	.0010	.0073	.0011
#2	.0108	.0003	.0023	.0009	.0043	.0003	.0010	.0034	-.0001
#3	.0028	.0003	.0020	.0014	.0030	-.0001	.0012	.0043	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Sample Name: CCB Acquired: 12/5/2014 14:54:36 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	.0009	.0006	.0003	.0130	.0006	.0001
Stddev	.0000	.0007	.0002	.0012	.0039	.0020	.0001
%RSD	8.688	72.45	42.40	458.5	29.67	368.6	159.8
#1	.0003	.0013	.0008	.0013	.0096	.0023	.0002
#2	.0003	.0012	.0005	-.0010	.0122	.0011	.0000
#3	.0004	.0002	.0003	.0005	.0172	-.0017	.0000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_3710
Units	Cts/S
Avg	4372.3
Stddev	29.2
%RSD	.66707
#1	4347.5
#2	4364.9
#3	4404.4

Sample Name: 160-9209-D-4-A Acquired: 12/5/2014 14:58:34 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0095	.0026	.0298	.0810	.0001	<.0000	220.2	.0001
Stddev	.0004	.0046	.0010	.0064	.0003	.0000	.0022	1.3	.0001
%RSD	5745.	48.62	37.76	21.67	.3429	65.13	22330.	.5939	106.1
#1	.0005	.0146	.0031	.0351	.0812	.0000	-.0019	221.5	.0000
#2	-.0004	.0085	.0032	.0226	.0807	.0001	-.0005	220.2	.0000
#3	-.0001	.0055	.0015	.0315	.0811	.0001	.0024	218.9	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0013	.0317	<.0000	.3855	15.55	.0163	64.89	.0013	.0077
Stddev	.0002	.0007	.0005	.0017	.09	.0008	.22	.0002	.0002
%RSD	15.61	2.138	222.4	.4492	.5916	4.888	.3466	16.83	2.552
#1	.0013	.0318	.0001	.3853	15.62	.0157	65.15	.0012	.0078
#2	.0015	.0310	.0000	.3839	15.45	.0160	64.75	.0011	.0077
#3	.0011	.0323	-.0008	.3873	15.59	.0172	64.78	.0016	.0075
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	159.9	.0072	.0245	.0036	86.16	.0031	.0113	16.00	<.0000
Stddev	1.8	.0002	.0010	.0006	.61	.0009	.0019	.08	.0003
%RSD	1.097	3.225	4.072	16.04	.7113	28.87	16.83	.5100	98.38
#1	159.6	.0074	.0256	.0042	86.73	.0041	.0134	16.08	-.0005
#2	158.3	.0070	.0242	.0033	86.23	.0024	.0100	15.92	.0000
#3	161.8	.0073	.0237	.0032	85.51	.0027	.0104	16.01	-.0005
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9209-D-4-A Acquired: 12/5/2014 14:58:34 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.158	.0046	.0044	<.0000	.1648	.0105	.0087
Stddev	.005	.0039	.0002	.0007	.0100	.0023	.0001
%RSD	.4278	85.33	4.604	825.7	6.046	21.85	.8333
#1	1.163	.0042	.0044	.0002	.1635	.0131	.0086
#2	1.154	.0087	.0041	-.0009	.1556	.0088	.0087
#3	1.157	.0009	.0045	.0004	.1754	.0096	.0087
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4066.0
Stddev	17.3
%RSD	.42580
#1	4046.4
#2	4079.2
#3	4072.5

Sample Name: 160-9209-A-5-A Acquired: 12/5/2014 15:02:35 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000**	**.0108**	**.0034**	**.0219**	**.0831**	**<.0000**	**<.0000**	**217.2**	**<.0000**
Stddev	.0006	.0065	.0017	.0028	.0002	.0000	.0009	1.6	.0001
%RSD	8847.	60.21	49.43	12.93	.2744	86.93	85.39	.7272	602.5
#1	-.0004	.0159	.0052	.0226	.0830	.0000	-.0001	218.7	.0000
#2	-.0002	.0035	.0019	.0244	.0830	.0000	-.0013	215.6	.0000
#3	.0006	.0130	.0031	.0188	.0834	.0000	-.0019	217.4	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0015**	**.0262**	**.0004**	**.3533**	**15.89**	**.0172**	**65.34**	**.0008**	**.0075**
Stddev	.0002	.0004	.0012	.0015	.07	.0001	.08	.0002	.0001
%RSD	14.55	1.533	306.4	.4285	.4647	.4527	.1181	28.70	2.009
#1	.0014	.0264	.0014	.3526	15.81	.0173	65.35	.0009	.0076
#2	.0017	.0264	.0007	.3523	15.95	.0171	65.26	.0006	.0075
#3	.0014	.0257	-.0009	.3551	15.91	.0171	65.41	.0010	.0073
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**163.7**	**.0055**	**.0243**	**.0032**	**84.56**	**.0024**	**.0136**	**16.37**	**<.0000**
Stddev	2.3	.0000	.0003	.0005	.76	.0010	.0010	.03	.0001
%RSD	1.382	.7525	1.398	16.79	.9032	43.22	7.063	.1663	14.94
#1	163.0	.0056	.0243	.0031	85.17	.0012	.0127	16.36	-.0010
#2	161.8	.0055	.0240	.0037	83.70	.0032	.0135	16.35	-.0008
#3	166.2	.0055	.0247	.0027	84.80	.0027	.0146	16.40	-.0008
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9209-A-5-A Acquired: 12/5/2014 15:02:35 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.189	.0061	.0037	<.0000	.1676	.0070	.0094
Stddev	.003	.0035	.0005	.0005	.0076	.0004	.0001
%RSD	.2467	57.46	14.19	52.51	4.511	5.946	.7985
#1	1.186	.0028	.0041	-.0007	.1755	.0072	.0094
#2	1.188	.0098	.0031	-.0005	.1604	.0065	.0093
#3	1.192	.0058	.0040	-.0014	.1669	.0072	.0094
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4169.0
Stddev	27.4
%RSD	.65674
#1	4146.0
#2	4199.3
#3	4161.7

Sample Name: 160-9209-D-8-A Acquired: 12/5/2014 15:06:36 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000**	**.0101**	**.0051**	**.0542**	**.0695**	**<.0000**	**.0008**	**71.53**	**.0000**
Stddev	.0002	.0051	.0003	.0006	.0003	.0000	.0029	.44	.0001
%RSD	2059.	50.68	6.115	1.078	.4057	178.9	373.6	.6153	3787.
#1	-.0002	.0159	.0048	.0546	.0696	-.0001	.0006	71.12	.0001
#2	.0002	.0070	.0055	.0544	.0692	.0000	.0038	71.48	.0000
#3	.0000	.0072	.0051	.0535	.0697	.0000	-.0020	72.00	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000**	**.0115**	**.0022**	**.1123**	**7.978**	**.0082**	**18.95**	**.0019**	**.0050**
Stddev	.0002	.0005	.0008	.0016	.024	.0017	.12	.0004	.0001
%RSD	1097.	4.400	35.95	1.438	.2979	20.92	.6148	19.03	1.586
#1	-.0001	.0119	.0022	.1118	7.982	.0074	18.89	.0016	.0051
#2	-.0001	.0115	.0014	.1142	7.952	.0070	18.87	.0017	.0049
#3	.0002	.0109	.0030	.1111	7.999	.0102	19.08	.0023	.0050
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**38.03**	**.0092**	**.0244**	**.0041**	**33.01**	**.0017**	**.0065**	**17.59**	**<.0000**
Stddev	.13	.0003	.0010	.0008	.17	.0010	.0014	.04	.0002
%RSD	.3287	3.175	3.977	18.91	.5043	61.17	21.30	.2473	18.80
#1	38.13	.0089	.0251	.0032	32.82	.0007	.0069	17.58	-.0011
#2	37.89	.0094	.0248	.0047	33.09	.0015	.0076	17.55	-.0012
#3	38.08	.0094	.0233	.0043	33.12	.0028	.0049	17.64	-.0008
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9209-D-8-A Acquired: 12/5/2014 15:06:36 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3366	.0044	.0021	<.0000	.0427	.0163	.0082
Stddev	.0011	.0028	.0006	.0009	.0080	.0017	.0001
%RSD	.3234	64.18	29.14	276.7	18.73	10.21	1.433
#1	.3378	.0074	.0025	.0004	.0339	.0153	.0083
#2	.3357	.0041	.0025	-.0012	.0496	.0153	.0083
#3	.3362	.0017	.0014	-.0001	.0445	.0182	.0081
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4213.3
Stddev	6.9
%RSD	.16353
#1	4215.6
#2	4218.8
#3	4205.6

Sample Name: 160-9209-A-9-A Acquired: 12/5/2014 15:10:28 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0002**	**.0071**	**.0053**	**.0528**	**.0730**	**<.0000**	**<.0000**	**75.67**	**.0000**
Stddev	.0003	.0034	.0006	.0030	.0004	.0000	.0029	.27	.0001
%RSD	171.6	48.08	11.58	5.767	.5882	525.8	405.7	.3588	419.8
#1	.0005	.0039	.0047	.0495	.0725	-.0001	.0018	75.45	.0001
#2	.0001	.0108	.0059	.0534	.0732	.0000	.0000	75.97	.0000
#3	-.0001	.0067	.0052	.0555	.0733	.0000	-.0038	75.58	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000**	**.0078**	**.0017**	**.0447**	**8.251**	**.0088**	**20.42**	**.0011**	**.0053**
Stddev	.0004	.0005	.0012	.0030	.024	.0011	.11	.0005	.0003
%RSD	7383.	6.918	70.34	6.799	.2845	13.03	.5199	48.81	4.977
#1	.0005	.0084	.0028	.0418	8.228	.0098	20.30	.0008	.0050
#2	-.0002	.0074	.0017	.0444	8.275	.0090	20.51	.0008	.0056
#3	-.0003	.0077	.0005	.0479	8.252	.0075	20.45	.0017	.0053
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**39.90**	**.0078**	**.0234**	**.0033**	**33.63**	**.0020**	**.0048**	**18.54**	**<.0000**
Stddev	.15	.0000	.0007	.0009	.18	.0008	.0023	.10	.0003
%RSD	.3822	.3213	2.971	27.99	.5209	41.10	47.29	.5173	28.62
#1	39.72	.0078	.0242	.0030	33.50	.0029	.0052	18.46	-.0006
#2	40.01	.0079	.0229	.0043	33.83	.0016	.0024	18.64	-.0011
#3	39.95	.0078	.0231	.0025	33.56	.0014	.0069	18.51	-.0010
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9209-A-9-A Acquired: 12/5/2014 15:10:28 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3573	.0037	.0023	<.0000	.0351	.0196	.0133
Stddev	.0020	.0015	.0012	.0009	.0082	.0038	.0002
%RSD	.5600	38.83	53.11	36.44	23.30	19.12	1.238
#1	.3550	.0034	.0035	-.0030	.0332	.0155	.0132
#2	.3581	.0025	.0022	-.0029	.0281	.0227	.0135
#3	.3588	.0053	.0011	-.0014	.0441	.0207	.0132
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4292.9
Stddev	26.1
%RSD	.60696
#1	4321.5
#2	4270.5
#3	4286.6

Sample Name: 160-9209-A-10-A Acquired: 12/5/2014 15:14:20 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	.0047	.0480	.1180	<.0000	<.0000	130.2	.0001
Stddev	.0007	.0084	.0010	.0029	.0002	.0000	.0010	1.0	.0001
%RSD	60.30	250.4	20.16	6.142	.2096	21.65	49.90	.7667	134.4
#1	-.0009	-.0114	.0058	.0477	.1178	.0000	-.0010	129.7	.0000
#2	-.0019	.0053	.0040	.0452	.1179	-.0001	-.0022	129.7	.0000
#3	-.0006	-.0040	.0044	.0511	.1183	-.0001	-.0030	131.4	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	.0117	.0030	.0736	11.17	.0116	36.94	.0012	.0048
Stddev	.0001	.0012	.0018	.0010	.03	.0013	.17	.0004	.0003
%RSD	33.61	10.13	60.25	1.372	.2631	11.28	.4550	34.96	7.329
#1	.0004	.0124	.0022	.0748	11.14	.0105	36.89	.0016	.0051
#2	.0003	.0103	.0050	.0730	11.20	.0131	36.79	.0010	.0044
#3	.0002	.0123	.0017	.0731	11.18	.0113	37.12	.0009	.0048
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	52.41	.0094	.0140	.0033	48.95	.0024	.0084	18.85	<.0000
Stddev	.03	.0002	.0015	.0014	.34	.0018	.0002	.04	.0007
%RSD	.0604	2.124	10.98	41.94	.6854	75.65	2.411	.2202	221.0
#1	52.37	.0094	.0127	.0033	48.69	.0033	.0085	18.81	-.0002
#2	52.43	.0092	.0157	.0019	48.83	.0036	.0084	18.88	.0003
#3	52.43	.0096	.0137	.0046	49.33	.0003	.0081	18.87	-.0010
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9209-A-10-A Acquired: 12/5/2014 15:14:20 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6476	<.0000	.0033	<.0000	.1069	.0160	.0065
Stddev	.0009	.0006	.0002	.0013	.0112	.0025	.0002
%RSD	.1425	158.8	6.340	776.8	10.49	15.67	3.018
#1	.6479	-.0009	.0032	-.0017	.1175	.0167	.0066
#2	.6484	.0003	.0035	.0003	.1080	.0181	.0063
#3	.6466	-.0005	.0032	.0009	.0951	.0132	.0066
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4185.6
Stddev	24.0
%RSD	.57291
#1	4195.6
#2	4203.0
#3	4158.3

Sample Name: 160-9209-A-11-A Acquired: 12/5/2014 15:18:12 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0203	.0046	.0464	.1175	.0000	<.0000	133.6	<.0000
Stddev	.0005	.0083	.0008	.0011	.0009	.0000	.0014	.7	.0000
%RSD	50.52	41.08	16.69	2.415	.7822	454.5	381.5	.5556	68.64
#1	-.0007	.0116	.0051	.0452	.1168	.0000	.0002	134.2	-.0001
#2	-.0014	.0282	.0038	.0465	.1172	.0000	-.0020	133.9	-.0001
#3	-.0006	.0211	.0051	.0474	.1186	.0001	.0006	132.8	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	.0176	.0032	.1190	11.12	.0119	37.42	.0019	.0050
Stddev	.0002	.0003	.0009	.0008	.05	.0005	.16	.0005	.0001
%RSD	79.57	1.798	29.28	.6430	.4475	4.483	.4189	25.66	1.646
#1	.0005	.0179	.0040	.1181	11.12	.0119	37.34	.0018	.0050
#2	.0001	.0175	.0022	.1193	11.07	.0124	37.31	.0024	.0051
#3	.0003	.0173	.0033	.1195	11.17	.0113	37.60	.0015	.0049
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	52.43	.0109	.0163	.0032	50.42	.0022	.0113	18.96	<.0000
Stddev	.48	.0004	.0005	.0014	.42	.0010	.0009	.09	.0002
%RSD	.9223	3.976	2.866	45.08	.8240	43.89	7.685	.4869	29.64
#1	52.01	.0109	.0165	.0016	50.62	.0013	.0116	18.88	-.0005
#2	52.33	.0113	.0157	.0045	50.69	.0020	.0103	18.93	-.0006
#3	52.96	.0104	.0165	.0035	49.94	.0032	.0119	19.06	-.0008
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9209-A-11-A Acquired: 12/5/2014 15:18:12 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6462	.0032	.0027	<.0000	.1168	.0163	.0194
Stddev	.0053	.0075	.0004	.0006	.0073	.0003	.0001
%RSD	.8136	234.5	14.86	120.2	6.218	2.131	.3604
#1	.6427	.0042	.0024	-.0006	.1111	.0164	.0194
#2	.6436	.0101	.0026	-.0010	.1143	.0159	.0195
#3	.6523	-.0047	.0032	.0002	.1250	.0166	.0195
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4110.3
Stddev	7.9
%RSD	.19171
#1	4117.2
#2	4101.8
#3	4112.1

Sample Name: 160-9209-B-19-A Acquired: 12/5/2014 15:22:03 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005	<.0000	.0007	.0130	.1042	<.0000	<.0000	84.71	.0002
Stddev	.0007	.0105	.0009	.0015	.0006	.0000	.0003	1.33	.0001
%RSD	137.5	216.8	143.4	11.49	.5429	92.75	32.04	1.574	45.14
#1	.0013	.0038	.0003	.0145	.1048	.0000	-.0009	83.21	.0003
#2	.0003	-.0017	.0000	.0131	.1042	.0000	-.0014	85.14	.0001
#3	.0000	-.0166	.0017	.0115	.1037	-.0001	-.0008	85.77	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	.0101	.0021	.0170	4.711	.0068	22.74	.0190	.0009
Stddev	.0002	.0007	.0023	.0020	.012	.0004	.16	.0000	.0001
%RSD	64.30	7.386	111.4	11.58	.2455	6.312	.7207	.2023	13.90
#1	.0004	.0110	.0042	.0150	4.715	.0067	22.60	.0191	.0008
#2	.0001	.0097	-.0004	.0189	4.720	.0065	22.92	.0191	.0010
#3	.0004	.0096	.0025	.0172	4.698	.0073	22.71	.0190	.0009
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.86	.0128	.0121	.0028	53.93	.0019	.0016	13.91	<.0000
Stddev	.06	.0002	.0008	.0007	1.41	.0007	.0006	.07	.0003
%RSD	.4636	1.753	6.372	23.60	2.622	34.41	37.18	.4726	102.4
#1	11.89	.0127	.0112	.0032	52.39	.0027	.0009	13.90	.0000
#2	11.89	.0126	.0126	.0031	54.24	.0016	.0020	13.98	-.0003
#3	11.79	.0130	.0125	.0020	55.17	.0015	.0019	13.86	-.0005
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9209-B-19-A Acquired: 12/5/2014 15:22:03 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5691	.0007	.0019	<.0000	.0125	.0066	.0143
Stddev	.0027	.0043	.0002	.0014	.0068	.0041	.0004
%RSD	.4697	597.8	10.89	203.7	54.08	62.73	3.099
#1	.5718	.0047	.0021	.0009	.0059	.0109	.0138
#2	.5691	-.0037	.0017	-.0017	.0122	.0061	.0144
#3	.5665	.0011	.0018	-.0012	.0195	.0027	.0147
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4190.9
Stddev	32.3
%RSD	.77182
#1	4223.4
#2	4158.7
#3	4190.7

Sample Name: 160-9209-A-20-B Acquired: 12/5/2014 15:25:55 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.2094	.0007	.0122	.1096	<.0000	<.0000	84.08	.0001
Stddev	.0002	.0085	.0009	.0046	.0012	.0000	.0014	.76	.0001
%RSD	253.3	4.052	126.6	38.01	1.123	113.8	149.9	.9053	101.9
#1	-.0002	.2191	.0004	.0140	.1109	.0000	-.0026	84.45	.0001
#2	.0001	.2052	.0000	.0069	.1093	-.0001	-.0003	84.60	.0000
#3	-.0002	.2037	.0017	.0156	.1085	-.0001	.0000	83.21	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	.0422	.0040	.3606	4.841	.0087	23.20	.0308	.0011
Stddev	.0002	.0006	.0009	.0023	.043	.0005	.19	.0003	.0001
%RSD	41.49	1.363	21.48	.6302	.8843	5.258	.8078	1.128	10.41
#1	.0006	.0418	.0034	.3598	4.875	.0084	23.39	.0310	.0010
#2	.0004	.0428	.0050	.3632	4.855	.0084	23.18	.0310	.0012
#3	.0002	.0419	.0035	.3589	4.793	.0092	23.02	.0304	.0012
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	12.27	.0235	.0218	.0033	52.55	.0036	.0021	14.81	<.0000
Stddev	.15	.0005	.0009	.0005	.93	.0010	.0009	.14	.0002
%RSD	1.185	2.088	4.053	13.53	1.764	28.12	43.49	.9250	45.37
#1	12.43	.0239	.0217	.0038	53.27	.0043	.0031	14.97	-.0002
#2	12.24	.0236	.0227	.0030	52.86	.0024	.0022	14.78	-.0006
#3	12.15	.0229	.0209	.0031	51.50	.0040	.0012	14.70	-.0006
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9209-A-20-B Acquired: 12/5/2014 15:25:55 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5870	.0000	.0102	.0000	.0183	.0101	.0236
Stddev	.0064	.0020	.0003	.0009	.0210	.0027	.0003
%RSD	1.093	7204.	3.299	22200.	114.8	26.52	1.397
#1	.5944	.0008	.0101	.0010	.0405	.0131	.0237
#2	.5842	.0015	.0106	-.0003	.0154	.0081	.0238
#3	.5825	-.0022	.0100	-.0007	-.0011	.0090	.0232
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4396.9
Stddev	29.1
%RSD	.66150
#1	4370.4
#2	4392.2
#3	4428.0

Sample Name: MB 160-160137/1-A Acquired: 12/5/2014 15:29:46 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000**	**.0099**	**<.0000**	**.0033**	**.0003**	**.0000**	**<.0000**	**.0438**	**.0001**
Stddev	.0004	.0051	.0017	.0032	.0001	.0000	.0010	.0004	.0001
%RSD	2307.	51.27	368.0	97.77	26.81	58.96	1026.	.8303	171.2
#1	.0003	.0052	-.0012	.0040	.0003	.0000	.0005	.0442	.0002
#2	.0001	.0153	.0014	.0062	.0002	.0000	.0005	.0439	.0000
#3	-.0004	.0093	-.0016	-.0002	.0003	.0001	-.0013	.0434	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**<.0000**	**.0012**	**.0008**	**.0038**	**.1004**	**<.0000**	**.0024**	**<.0000**	**<.0000**
Stddev	.0002	.0004	.0009	.0011	.0184	.0018	.0049	.0001	.0001
%RSD	164.7	32.53	113.4	29.53	18.31	519.3	200.8	169.1	207.2
#1	.0001	.0016	.0004	.0034	.1032	.0017	-.0032	.0001	-.0001
#2	-.0002	.0010	.0017	.0051	.0808	-.0008	.0048	-.0002	.0000
#3	-.0003	.0009	.0002	.0030	.1172	-.0019	.0056	-.0002	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0312**	**.0003**	**.0007**	**.0015**	**.0233**	**<.0000**	**.0013**	**.0090**	**.0004**
Stddev	.0054	.0001	.0005	.0010	.0016	.0022	.0011	.0085	.0005
%RSD	17.18	31.50	68.46	68.18	6.673	525.5	84.94	94.52	119.7
#1	.0274	.0003	.0013	.0017	.0244	.0019	.0010	.0064	.0004
#2	.0373	.0004	.0004	.0004	.0215	-.0023	.0026	.0021	-.0001
#3	.0289	.0002	.0005	.0025	.0240	-.0008	.0004	.0186	.0009
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: MB 160-160137/1-A Acquired: 12/5/2014 15:29:46 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	<.0000	<.0000	<.0000	.0240	.0013	.0101
Stddev	.0000	.0017	.0001	.0003	.0138	.0016	.0002
%RSD	14.44	42.09	51.08	2152.	57.24	119.7	2.085
#1	.0001	-.0058	-.0001	.0003	.0207	.0031	.0099
#2	.0001	-.0040	-.0002	-.0001	.0391	.0006	.0102
#3	.0001	-.0024	-.0001	-.0003	.0122	.0002	.0103
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4325.7
Stddev	4.6
%RSD	.10661
#1	4331.0
#2	4323.0
#3	4323.1

Sample Name: LCS 160-160137/2-A Acquired: 12/5/2014 15:33:42 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1987	10.02	1.053	1.993	1.025	1.029	1.025	11.57	1.052
Stddev	.0020	.08	.009	.013	.011	.008	.006	.11	.008
%RSD	1.005	.7723	.8291	.6578	1.049	.8079	.6028	.9226	.7287
#1	.1996	10.11	1.058	2.006	1.037	1.039	1.029	11.61	1.055
#2	.1964	9.989	1.043	1.992	1.023	1.025	1.018	11.44	1.043
#3	.2002	9.960	1.058	1.980	1.015	1.024	1.027	11.65	1.058
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.156	1.096	1.100	10.50	10.07	1.022	9.996	1.037	.5298
Stddev	.010	.008	.012	.05	.13	.012	.062	.007	.0040
%RSD	.8538	.7098	1.126	.5211	1.248	1.135	.6195	.6655	.7487
#1	1.162	1.099	1.105	10.56	10.20	1.035	10.07	1.045	.5321
#2	1.144	1.087	1.086	10.46	10.05	1.021	9.946	1.033	.5252
#3	1.161	1.102	1.109	10.48	9.952	1.011	9.977	1.033	.5321
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.05	1.126	1.119	1.142	9.960	.5063	.5307	5.026	1.066
Stddev	.14	.009	.010	.008	.066	.0023	.0020	.041	.008
%RSD	1.399	.7882	.8718	.6898	.6620	.4603	.3848	.8080	.7865
#1	10.20	1.130	1.123	1.147	9.986	.5072	.5314	5.065	1.071
#2	10.01	1.116	1.108	1.133	9.885	.5036	.5284	5.030	1.056
#3	9.925	1.133	1.127	1.146	10.01	.5080	.5324	4.984	1.071
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LCS 160-160137/2-A Acquired: 12/5/2014 15:33:42 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.051	1.071	.9776	.2298	1.145	1.017	1.086
Stddev	.011	.014	.0075	.0011	.012	.012	.007
%RSD	1.001	1.301	.7636	.4583	1.062	1.147	.6696
#1	1.063	1.070	.9862	.2303	1.151	1.030	1.089
#2	1.048	1.058	.9734	.2286	1.131	1.015	1.077
#3	1.043	1.086	.9731	.2305	1.154	1.007	1.091
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4360.7
Stddev	36.2
%RSD	.82981
#1	4344.0
#2	4402.2
#3	4335.9

Sample Name: CCV Acquired: 12/5/2014 15:37:10 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.9873**	**47.88**	**5.048**	**4.860**	**4.749**	**4.921**	**5.029**	**51.39**	**5.057**
Stddev	.0166	.90	.051	.075	.016	.058	.056	.64	.059
%RSD	1.678	1.889	1.005	1.537	.3392	1.174	1.117	1.253	1.171
#1	.9782	47.68	5.005	4.845	4.747	4.893	4.980	50.97	5.005
#2	1.006	48.87	5.104	4.941	4.734	4.987	5.091	52.13	5.122
#3	.9772	47.10	5.036	4.794	4.766	4.883	5.017	51.08	5.043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.120**	**5.160**	**5.046**	**49.89**	**49.08**	**4.810**	**49.83**	**4.970**	**1.023**
Stddev	.062	.088	.053	.92	.92	.088	1.03	.095	.012
%RSD	1.211	1.709	1.046	1.836	1.870	1.835	2.068	1.905	1.185
#1	5.072	5.115	4.997	49.60	48.87	4.797	49.33	4.938	1.014
#2	5.190	5.261	5.102	50.92	50.09	4.904	51.02	5.076	1.037
#3	5.097	5.103	5.038	49.16	48.29	4.729	49.14	4.895	1.020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**48.30**	**5.152**	**51.60**	**5.176**	**49.91**	**1.001**	**1.001**	**4.844**	**5.152**
Stddev	.84	.063	.62	.059	.52	.011	.011	.075	.066
%RSD	1.729	1.214	1.198	1.150	1.050	1.137	1.142	1.545	1.279
#1	48.16	5.104	51.07	5.135	49.43	.9917	.9918	4.834	5.101
#2	49.20	5.223	52.28	5.245	50.47	1.013	1.014	4.924	5.227
#3	47.55	5.131	51.45	5.150	49.83	.9968	.9971	4.776	5.129
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: CCV Acquired: 12/5/2014 15:37:10 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.886**	**4.999**	**4.901**	**1.037**	**5.078**	**4.923**	**5.088**
Stddev	.099	.088	.088	.014	.102	.087	.062
%RSD	2.025	1.764	1.789	1.339	2.012	1.758	1.227
#1	4.863	4.945	4.874	1.026	5.027	4.901	5.036
#2	4.994	5.100	4.999	1.052	5.196	5.019	5.157
#3	4.800	4.951	4.831	1.032	5.012	4.850	5.071
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**4263.1**
Stddev	64.8
%RSD	1.5193
#1	4306.5
#2	4188.6
#3	4294.1

Sample Name: CCB Acquired: 12/5/2014 15:40:59 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	.0004	.0111	.0007	.0005	<.0000	.0034	.0003
Stddev	.0005	.0067	.0018	.0035	.0001	.0001	.0026	.0008	.0002
%RSD	447.3	444.6	414.0	31.19	17.65	13.01	128.8	24.55	52.04
#1	-.0007	.0037	.0019	.0080	.0008	.0006	-.0010	.0043	.0005
#2	.0000	-.0091	-.0016	.0149	.0006	.0005	-.0050	.0030	.0002
#3	.0004	.0009	.0010	.0105	.0008	.0004	-.0001	.0028	.0003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0014	<.0000	.0044	.0401	.0001	.0061	.0003	.0002
Stddev	.0003	.0009	.0020	.0019	.0265	.0005	.0019	.0003	.0002
%RSD	206.5	62.11	5873.	43.07	65.96	652.6	31.26	133.4	116.0
#1	.0004	.0020	.0019	.0060	.0703	-.0002	.0081	.0005	.0001
#2	.0000	.0018	.0000	.0049	.0288	-.0003	.0043	-.0001	.0004
#3	.0000	.0004	-.0020	.0023	.0212	.0007	.0059	.0004	.0000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0035	.0003	.0032	.0010	.0080	.0008	.0001	<.0000	.0006
Stddev	.0052	.0002	.0012	.0012	.0010	.0012	.0023	.0077	.0002
%RSD	148.6	70.78	36.57	124.7	12.89	141.9	3397.	2027.	29.33
#1	.0083	.0005	.0045	.0005	.0091	.0019	.0004	-.0001	.0007
#2	.0041	.0003	.0029	.0024	.0072	.0009	.0022	-.0083	.0008
#3	-.0020	.0001	.0022	.0001	.0075	-.0004	-.0023	.0072	.0004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Sample Name: CCB Acquired: 12/5/2014 15:40:59 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	.0043	<.0000	<.0000	.0049	.0027	.0003
Stddev	.0001	.0034	.0016	.0003	.0087	.0015	.0001
%RSD	19.80	78.80	366.6	13.33	177.8	56.04	28.84
#1	.0005	.0070	.0010	-.0020	.0011	.0019	.0004
#2	.0003	.0053	-.0021	-.0025	.0148	.0018	.0002
#3	.0004	.0005	-.0002	-.0019	-.0013	.0044	.0003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_3710
Units	Cts/S
Avg	4222.0
Stddev	19.6
%RSD	.46312
#1	4200.0
#2	4237.5
#3	4228.3

Sample Name: 160-9438-D-1-A Acquired: 12/5/2014 15:44:58 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0186	.0009	.0352	.0015	.0001	<.0000	55.10	.0001
Stddev	.0004	.0053	.0008	.0012	.0001	.0000	.0006	.34	.0001
%RSD	520.9	28.33	84.71	3.431	5.039	59.86	23.11	.6082	158.8
#1	.0002	.0156	.0011	.0353	.0015	.0001	-.0024	54.71	.0001
#2	.0004	.0155	.0015	.0364	.0014	.0001	-.0030	55.28	.0001
#3	-.0003	.0247	.0000	.0340	.0015	.0000	-.0019	55.30	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0017	.0005	.0259	.0860	.0123	15.72	.0043	.0003
Stddev	.0000	.0005	.0016	.0004	.0307	.0016	.02	.0002	.0002
%RSD	84.94	26.35	296.1	1.419	35.66	12.63	.1218	5.731	70.50
#1	-.0001	.0014	.0002	.0263	.0824	.0124	15.73	.0043	.0001
#2	.0000	.0015	.0023	.0257	.1184	.0106	15.70	.0041	.0005
#3	-.0001	.0022	-.0009	.0257	.0573	.0137	15.73	.0045	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	27.43	.0004	.0005	.0012	73.75	.0014	<.0000	.6850	<.0000
Stddev	.10	.0002	.0005	.0007	.41	.0017	.0006	.0074	.0003
%RSD	.3598	59.50	100.1	60.67	.5617	120.2	290.2	1.085	39.75
#1	27.37	.0006	.0001	.0013	74.08	.0005	.0005	.6770	-.0005
#2	27.37	.0003	.0004	.0005	73.89	.0033	-.0008	.6862	-.0010
#3	27.54	.0002	.0011	.0019	73.29	.0004	-.0003	.6917	-.0005
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9438-D-1-A Acquired: 12/5/2014 15:44:58 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5750	.0026	.0018	<.0000	.0092	.0016	.0075
Stddev	.0017	.0028	.0009	.0007	.0098	.0013	.0001
%RSD	.3008	108.1	51.93	43.45	106.8	80.27	.7997
#1	.5743	.0000	.0025	-.0016	.0122	.0011	.0076
#2	.5737	.0055	.0007	-.0010	.0171	.0030	.0075
#3	.5769	.0022	.0021	-.0025	-.0018	.0006	.0075
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4221.9
Stddev	9.2
%RSD	.21757
#1	4211.3
#2	4228.0
#3	4226.4

Sample Name: 160-9438-D-1-A SD Acquired: 12/5/2014 15:48:52 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=50

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000**	**<.0000**	**<.0000**	**.0108**	**.0005**	**.0000**	**<.0000**	**11.03**	**.0000**
Stddev	.0006	.0167	.0009	.0015	.0001	.0000	.0004	.27	.0001
%RSD	1723.	241.7	575.0	14.06	16.54	59.32	15.76	2.406	779.4
#1	-.0006	-.0188	-.0011	.0092	.0006	.0000	-.0023	11.32	.0001
#2	.0006	.0122	.0002	.0109	.0005	.0000	-.0021	10.96	-.0001
#3	.0000	-.0141	.0005	.0122	.0004	.0000	-.0029	10.80	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**.0013**	**.0015**	**.0057**	**.0561**	**.0021**	**3.088**	**.0008**	**.0001**
Stddev	.0000	.0002	.0014	.0007	.0173	.0006	.053	.0002	.0002
%RSD	30.43	17.73	92.86	12.93	30.78	28.71	1.717	20.93	266.3
#1	.0001	.0010	.0012	.0059	.0656	.0028	3.148	.0010	.0003
#2	.0001	.0015	.0031	.0049	.0362	.0019	3.049	.0006	-.0001
#3	.0001	.0013	.0003	.0064	.0666	.0016	3.067	.0008	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.236**	**.0001**	**<.0000**	**.0011**	**14.22**	**.0006**	**<.0000**	**.1342**	**.0002**
Stddev	.055	.0002	.0001	.0008	.40	.0008	.0017	.0052	.0002
%RSD	1.055	111.2	111.5	74.59	2.837	137.6	298.0	3.911	154.5
#1	5.207	.0000	-.0001	.0002	14.66	.0005	.0009	.1402	-.0001
#2	5.201	.0003	.0000	.0012	14.14	-.0002	-.0001	.1320	.0002
#3	5.300	.0002	-.0001	.0019	13.87	.0014	-.0024	.1304	.0004
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9438-D-1-A SD Acquired: 12/5/2014 15:48:52 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=50

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1109	.0028	.0002	<.0000	<.0000	.0003	.0080
Stddev	.0011	.0003	.0009	.0009	.0206	.0014	.0002
%RSD	1.033	12.14	384.0	162.0	397.6	496.9	2.835
#1	.1099	.0024	-.0004	.0004	.0151	.0011	.0083
#2	.1105	.0030	.0013	-.0014	-.0046	-.0013	.0079
#3	.1121	.0029	-.0002	-.0007	-.0261	.0011	.0079
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4122.6
Stddev	79.2
%RSD	1.9213
#1	4031.8
#2	4177.5
#3	4158.6

Sample Name: 160-9438-D-1-B MS Acquired: 12/5/2014 15:52:45 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0195**	**1.042**	**.1054**	**.2300**	**.0995**	**.1003**	**.0995**	**55.20**	**.1066**
Stddev	.0003	.008	.0011	.0011	.0002	.0000	.0013	.54	.0013
%RSD	1.384	.7947	1.007	.4793	.2008	.0406	1.275	.9769	1.237
#1	.0192	1.035	.1051	.2313	.0993	.1003	.1010	55.80	.1081
#2	.0197	1.051	.1045	.2292	.0997	.1003	.0989	54.76	.1055
#3	.0197	1.041	.1066	.2296	.0996	.1002	.0987	55.04	.1063
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1136**	**.1082**	**.1121**	**1.078**	**1.100**	**.1107**	**16.70**	**.1067**	**.0519**
Stddev	.0012	.0014	.0030	.002	.038	.0006	.03	.0001	.0008
%RSD	1.065	1.318	2.662	.1632	3.417	.5361	.2047	.0583	1.615
#1	.1150	.1098	.1133	1.078	1.141	.1100	16.72	.1067	.0529
#2	.1127	.1071	.1087	1.076	1.068	.1112	16.66	.1067	.0513
#3	.1131	.1078	.1143	1.079	1.091	.1109	16.73	.1068	.0516
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**28.35**	**.1117**	**.1168**	**.1144**	**74.87**	**.0507**	**.0526**	**1.271**	**.1055**
Stddev	.02	.0015	.0009	.0025	.93	.0020	.0025	.007	.0009
%RSD	.0732	1.307	.7319	2.153	1.240	3.938	4.800	.5344	.8422
#1	28.32	.1134	.1178	.1172	75.93	.0528	.0555	1.277	.1063
#2	28.36	.1106	.1167	.1125	74.20	.0506	.0508	1.264	.1045
#3	28.36	.1112	.1161	.1135	74.48	.0488	.0516	1.273	.1056
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9438-D-1-B MS Acquired: 12/5/2014 15:52:45 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6705	.1025	.0973	.0225	.1131	.1031	.1134
Stddev	.0006	.0017	.0007	.0007	.0040	.0023	.0014
%RSD	.0882	1.628	.7081	3.155	3.534	2.260	1.236
#1	.6700	.1014	.0973	.0223	.1133	.1010	.1149
#2	.6704	.1017	.0966	.0220	.1089	.1028	.1122
#3	.6711	.1044	.0979	.0233	.1169	.1056	.1130
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4129.5
Stddev	27.5
%RSD	.66660
#1	4110.8
#2	4161.1
#3	4116.7

Sample Name: 160-9438-D-1-C MSD Acquired: 12/5/2014 15:56:28 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0193**	**1.065**	**.1046**	**.2295**	**.0996**	**.1006**	**.1029**	**54.20**	**.1058**
Stddev	.0006	.012	.0014	.0039	.0011	.0009	.0007	.12	.0007
%RSD	3.070	1.099	1.366	1.686	1.151	.9266	.7169	.2160	.6909
#1	.0190	1.078	.1035	.2287	.0999	.1006	.1022	54.10	.1054
#2	.0200	1.060	.1041	.2337	.1005	.1015	.1027	54.18	.1054
#3	.0190	1.057	.1062	.2260	.0983	.0996	.1037	54.33	.1067
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1140**	**.1109**	**.1083**	**1.096**	**1.127**	**.1094**	**16.60**	**.1074**	**.0529**
Stddev	.0007	.0008	.0014	.011	.010	.0013	.09	.0010	.0005
%RSD	.6058	.6956	1.312	.9597	.9012	1.161	.5210	.9655	.9322
#1	.1137	.1100	.1068	1.102	1.117	.1106	16.61	.1080	.0527
#2	.1134	.1113	.1085	1.102	1.137	.1095	16.68	.1080	.0525
#3	.1147	.1114	.1096	1.084	1.127	.1081	16.51	.1062	.0534
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**27.80**	**.1118**	**.1155**	**.1134**	**72.26**	**.0521**	**.0523**	**1.301**	**.1058**
Stddev	.33	.0007	.0005	.0003	.75	.0008	.0014	.011	.0008
%RSD	1.180	.5827	.4323	.2903	1.038	1.505	2.651	.8776	.7244
#1	27.93	.1114	.1149	.1134	71.95	.0513	.0508	1.303	.1050
#2	28.04	.1114	.1159	.1130	71.71	.0529	.0526	1.311	.1058
#3	27.42	.1126	.1156	.1137	73.11	.0521	.0535	1.289	.1066
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9438-D-1-C MSD Acquired: 12/5/2014 15:56:28 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6623	.1083	.0982	.0234	.1240	.1038	.1121
Stddev	.0071	.0004	.0011	.0015	.0008	.0018	.0009
%RSD	1.067	.4130	1.119	6.289	.6322	1.690	.8407
#1	.6650	.1081	.0985	.0227	.1231	.1023	.1117
#2	.6677	.1088	.0991	.0223	.1241	.1033	.1114
#3	.6543	.1080	.0970	.0250	.1246	.1057	.1132
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4087.9
Stddev	27.8
%RSD	.68082
#1	4117.3
#2	4062.0
#3	4084.6

Sample Name: 160-9438-C-2-A Acquired: 12/5/2014 16:00:11 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0412	<.0000	.0260	.0011	<.0000	<.0000	46.00	<.0000
Stddev	.0006	.0134	.0005	.0037	.0001	.0000	.0015	2.19	.0002
%RSD	67.21	32.59	111.3	14.34	8.946	33.25	160.7	4.766	1044.
#1	-.0002	.0523	.0000	.0225	.0011	-.0001	-.0003	43.88	-.0001
#2	-.0014	.0450	-.0010	.0255	.0010	-.0001	-.0026	45.86	.0002
#3	-.0012	.0263	-.0004	.0300	.0011	.0000	.0001	48.26	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0017	.0028	.0456	.6189	.0140	20.58	.0150	.0001
Stddev	.0001	.0008	.0021	.0007	.0260	.0004	.34	.0002	.0000
%RSD	141.2	49.38	74.44	1.619	4.206	2.904	1.632	1.460	13.47
#1	.0000	.0026	.0022	.0447	.5893	.0138	20.27	.0148	.0002
#2	.0001	.0014	.0010	.0459	.6291	.0145	20.55	.0152	.0002
#3	.0001	.0010	.0050	.0461	.6383	.0137	20.94	.0150	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	32.86	.0006	.0012	.0016	83.47	.0009	.0017	.4510	<.0000
Stddev	.17	.0003	.0010	.0001	3.79	.0010	.0018	.0104	.0004
%RSD	.5184	52.91	79.15	8.123	4.534	115.6	105.5	2.308	171.8
#1	32.72	.0008	.0010	.0015	79.81	-.0003	.0019	.4419	-.0002
#2	32.82	.0002	.0023	.0018	83.25	.0017	-.0002	.4488	-.0007
#3	33.05	.0007	.0004	.0016	87.36	.0012	.0033	.4623	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9438-C-2-A Acquired: 12/5/2014 16:00:11 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7332	.0007	.0018	<.0000	.0121	.0034	.0048
Stddev	.0024	.0046	.0006	.0010	.0057	.0020	.0002
%RSD	.3304	640.8	31.68	219.6	47.04	56.92	4.376
#1	.7314	-.0045	.0020	-.0008	.0087	.0053	.0046
#2	.7323	.0041	.0022	-.0013	.0186	.0036	.0050
#3	.7360	.0025	.0012	.0007	.0089	.0014	.0048
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4221.5
Stddev	76.5
%RSD	1.8130
#1	4300.0
#2	4217.3
#3	4147.1

Sample Name: MB 160-159979/1-A Acquired: 12/5/2014 16:04:04 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**<.0000**	**.0001**	**.0014**	**.0042**	**.0000**	**.0002**	**.0713**	**<.0000**
Stddev	.0005	.0024	.0007	.0045	.0001	.0000	.0009	.0010	.0000
%RSD	322.1	104.0	1153.	315.0	2.392	125.2	436.0	1.337	85.66
#1	.0005	-.0048	.0006	.0038	.0041	.0000	-.0001	.0723	-.0001
#2	-.0004	.0000	.0003	-.0037	.0043	.0000	.0012	.0704	-.0001
#3	.0003	-.0021	-.0007	.0042	.0043	.0000	-.0005	.0712	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**<.0000**	**.0011**	**.0006**	**.0045**	**.0231**	**<.0000**	**.0101**	**.0001**	**.0000**
Stddev	.0000	.0007	.0013	.0009	.0220	.0004	.0052	.0002	.0002
%RSD	10.60	60.51	206.9	19.01	95.59	49.92	50.84	153.2	404.1
#1	-.0002	.0019	.0008	.0049	.0452	-.0009	.0043	.0003	.0002
#2	-.0002	.0006	-.0007	.0051	.0228	-.0003	.0120	.0000	-.0001
#3	-.0002	.0009	.0018	.0035	.0011	-.0011	.0141	.0001	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1155**	**.0003**	**.0005**	**.0013**	**.0187**	**.0014**	**<.0000**	**.0075**	**.0004**
Stddev	.0084	.0001	.0007	.0002	.0037	.0008	.0004	.0045	.0002
%RSD	7.307	32.34	129.6	14.76	19.70	55.75	52.75	59.80	43.84
#1	.1252	.0002	.0010	.0011	.0229	.0024	-.0009	.0112	.0005
#2	.1120	.0004	-.0003	.0014	.0165	.0010	-.0010	.0025	.0004
#3	.1094	.0003	.0008	.0015	.0166	.0009	-.0003	.0088	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: MB 160-159979/1-A Acquired: 12/5/2014 16:04:04 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0088	<.0000	<.0000	<.0000	.0174	.0003	.0109
Stddev	.0000	.0004	.0007	.0008	.0076	.0010	.0000
%RSD	.4836	44.01	155.9	284.7	43.52	377.6	.3395
#1	.0088	-.0013	-.0013	-.0008	.0115	-.0004	.0109
#2	.0088	-.0006	.0001	-.0005	.0259	-.0002	.0108
#3	.0089	-.0007	-.0003	.0006	.0148	.0014	.0109
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4258.6
Stddev	9.2
%RSD	.21652
#1	4249.9
#2	4268.3
#3	4257.5

Sample Name: LCS 160-159979/2-A Acquired: 12/5/2014 16:08:00 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2049	9.567	.9883	1.909	.9801	.9828	1.039	11.10	.9909
Stddev	.0008	.041	.0035	.012	.0037	.0051	.005	.04	.0037
%RSD	.3972	.4267	.3519	.6418	.3753	.5230	.5027	.3561	.3765
#1	.2043	9.553	.9893	1.917	.9816	.9844	1.040	11.09	.9913
#2	.2045	9.535	.9844	1.895	.9760	.9771	1.033	11.06	.9870
#3	.2058	9.613	.9911	1.915	.9829	.9870	1.044	11.14	.9944
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.092	1.046	1.034	10.04	9.620	.9721	9.656	.9953	.5407
Stddev	.004	.006	.003	.04	.034	.0028	.049	.0037	.0018
%RSD	.3525	.6195	.3273	.3619	.3543	.2853	.5026	.3688	.3405
#1	1.092	1.045	1.034	10.05	9.616	.9709	9.693	.9935	.5406
#2	1.089	1.040	1.030	10.01	9.588	.9702	9.601	.9928	.5389
#3	1.096	1.053	1.036	10.08	9.656	.9753	9.675	.9995	.5426
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.699	1.067	1.051	1.079	10.05	.5123	.4949	4.994	1.095
Stddev	.029	.004	.001	.004	.04	.0039	.0034	.026	.003
%RSD	.3039	.3338	.0841	.4183	.3888	.7571	.6886	.5171	.2961
#1	9.708	1.066	1.051	1.077	10.06	.5156	.4947	4.998	1.092
#2	9.666	1.064	1.050	1.076	10.00	.5081	.4917	4.967	1.096
#3	9.723	1.071	1.052	1.084	10.07	.5134	.4985	5.018	1.098
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LCS 160-159979/2-A Acquired: 12/5/2014 16:08:00 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.010	1.017	1.012	.2188	1.069	.9744	1.020
Stddev	.004	.006	.004	.0014	.005	.0032	.004
%RSD	.4097	.6053	.3606	.6412	.4699	.3241	.3407
#1	1.012	1.024	1.012	.2199	1.070	.9710	1.021
#2	1.006	1.011	1.008	.2172	1.063	.9750	1.017
#3	1.014	1.017	1.016	.2191	1.073	.9772	1.024
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4336.1
Stddev	14.2
%RSD	.32781
#1	4330.2
#2	4352.3
#3	4325.8

Sample Name: 160-9438-F-1-B Acquired: 12/5/2014 16:11:26 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0378	<.0000	.0358	.0016	.0001	<.0000	55.62	<.0000
Stddev	.0002	.0060	.0014	.0024	.0002	.0001	.0024	.82	.0001
%RSD	158.6	15.97	145.3	6.783	12.63	98.42	396.8	1.471	2229.
#1	.0000	.0400	.0006	.0377	.0015	.0001	-.0024	56.23	-.0001
#2	-.0004	.0425	-.0020	.0331	.0018	.0000	.0022	55.95	.0000
#3	.0000	.0310	-.0014	.0366	.0014	.0001	-.0017	54.69	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0016	.0015	.0326	.0900	.0114	16.24	.0046	.0000
Stddev	.0003	.0004	.0003	.0024	.0067	.0004	.23	.0004	.0002
%RSD	156.3	25.93	23.37	7.387	7.423	3.762	1.416	7.592	335.6
#1	.0001	.0016	.0018	.0351	.0898	.0116	16.41	.0050	-.0001
#2	-.0004	.0020	.0011	.0324	.0834	.0109	16.34	.0043	.0002
#3	-.0002	.0012	.0015	.0303	.0968	.0117	15.98	.0046	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	28.06	.0004	.0016	.0005	74.25	.0015	<.0000	.7328	<.0000
Stddev	.26	.0002	.0014	.0014	1.02	.0007	.0012	.0099	.0002
%RSD	.9386	52.50	91.93	316.2	1.376	49.42	113.0	1.351	31.45
#1	28.19	.0002	.0032	.0018	75.02	.0014	-.0020	.7430	-.0007
#2	28.23	.0005	.0005	-.0010	74.63	.0023	-.0014	.7323	-.0004
#3	27.76	.0005	.0010	.0005	73.09	.0008	.0003	.7232	-.0005
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9438-F-1-B Acquired: 12/5/2014 16:11:26 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5889	.0033	.0017	<.0000	.0063	.0006	.0084
Stddev	.0058	.0020	.0003	.0005	.0125	.0034	.0002
%RSD	.9899	60.67	16.46	53.07	197.1	581.9	2.532
#1	.5924	.0046	.0020	-.0015	.0086	.0045	.0086
#2	.5921	.0043	.0014	-.0009	-.0071	-.0012	.0083
#3	.5822	.0010	.0017	-.0005	.0175	-.0015	.0082
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4175.7
Stddev	52.9
%RSD	1.2668
#1	4139.2
#2	4151.5
#3	4236.3

Sample Name: 160-9438-F-1-B SD Acquired: 12/5/2014 16:15:18 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=50

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0042	<.0000	.0081	.0004	.0000	<.0000	10.39	<.0000
Stddev	.0005	.0037	.0009	.0037	.0001	.0000	.0016	.04	.0002
%RSD	71.18	86.62	535.7	45.84	25.09	62.40	174.9	.3492	2405.
#1	-.0012	.0059	-.0010	.0104	.0003	.0001	-.0020	10.41	.0000
#2	-.0003	.0000	.0009	.0038	.0005	.0000	-.0017	10.35	-.0002
#3	-.0005	.0068	-.0004	.0102	.0005	.0000	.0009	10.42	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0005	.0020	.0061	.0693	.0024	2.981	.0008	<.0000
Stddev	.0002	.0007	.0005	.0012	.0130	.0006	.014	.0000	.0001
%RSD	174.5	158.9	23.53	19.23	18.75	25.28	.4556	4.207	357.7
#1	.0001	.0013	.0020	.0074	.0816	.0017	2.979	.0008	.0000
#2	-.0002	.0003	.0024	.0059	.0707	.0024	2.969	.0008	.0001
#3	-.0003	-.0002	.0015	.0051	.0557	.0029	2.996	.0009	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.127	.0003	<.0000	.0007	13.40	<.0000	<.0000	.1330	<.0000
Stddev	.036	.0001	.0008	.0007	.11	.0008	.0013	.0021	.0005
%RSD	.7118	40.26	1614.	99.45	.8451	455.2	748.9	1.583	398.2
#1	5.095	.0004	.0004	.0003	13.49	-.0007	-.0009	.1339	.0003
#2	5.118	.0002	-.0009	.0014	13.28	.0007	-.0010	.1306	-.0006
#3	5.167	.0003	.0004	.0003	13.45	-.0006	.0014	.1346	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9438-F-1-B SD Acquired: 12/5/2014 16:15:18 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=50

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1092	.0001	<.0000	<.0000	.0152	.0008	.0068
Stddev	.0008	.0030	.0003	.0012	.0111	.0021	.0000
%RSD	.7703	2560.	510.2	88.08	72.92	274.2	.5081
#1	.1085	.0012	-.0002	-.0003	.0247	.0027	.0068
#2	.1090	-.0033	-.0002	-.0027	.0178	.0012	.0069
#3	.1102	.0024	.0003	-.0011	.0030	-.0015	.0069
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4295.1
Stddev	20.0
%RSD	.46545
#1	4312.5
#2	4299.6
#3	4273.2

Sample Name: 160-9438-F-1-C MS Acquired: 12/5/2014 16:19:11 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0204**	**1.000**	**.0961**	**.2062**	**.0909**	**.0916**	**.1022**	**51.75**	**.0971**
Stddev	.0010	.003	.0006	.0040	.0006	.0006	.0013	.29	.0003
%RSD	5.137	.2860	.5758	1.920	.6292	.6407	1.236	.5642	.3463
#1	.0203	1.001	.0968	.2016	.0909	.0913	.1032	51.58	.0972
#2	.0194	.9975	.0958	.2084	.0904	.0913	.1024	51.57	.0967
#3	.0215	1.003	.0958	.2085	.0915	.0923	.1008	52.08	.0973
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1038**	**.1013**	**.1016**	**1.008**	**1.006**	**.1011**	**15.64**	**.0982**	**.0518**
Stddev	.0006	.0010	.0013	.007	.024	.0014	.10	.0007	.0003
%RSD	.5581	.9442	1.315	.6710	2.405	1.374	.6452	.7186	.6027
#1	.1037	.1002	.1004	1.003	.9830	.0995	15.60	.0975	.0521
#2	.1034	.1018	.1014	1.005	1.003	.1019	15.56	.0985	.0515
#3	.1045	.1019	.1031	1.015	1.031	.1019	15.75	.0988	.0519
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**26.25**	**.1021**	**.1063**	**.1044**	**70.18**	**.0504**	**.0489**	**1.288**	**.1050**
Stddev	.16	.0003	.0008	.0007	.36	.0019	.0010	.006	.0005
%RSD	.6071	.3326	.7163	.6239	.5078	3.809	2.039	.4957	.5050
#1	26.17	.1020	.1055	.1036	70.41	.0499	.0498	1.281	.1050
#2	26.16	.1018	.1070	.1047	69.77	.0488	.0491	1.291	.1045
#3	26.44	.1025	.1065	.1048	70.35	.0525	.0478	1.292	.1055
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9438-F-1-C MS Acquired: 12/5/2014 16:19:11 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6228	.0961	.0961	.0213	.1092	.0951	.1034
Stddev	.0041	.0008	.0005	.0011	.0106	.0016	.0005
%RSD	.6614	.8648	.5101	5.015	9.691	1.674	.4773
#1	.6210	.0962	.0959	.0201	.1208	.0962	.1037
#2	.6198	.0952	.0958	.0222	.1066	.0933	.1029
#3	.6275	.0968	.0967	.0216	.1001	.0959	.1037
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4163.7
Stddev	7.7
%RSD	.18387
#1	4168.1
#2	4168.1
#3	4154.9

Sample Name: CCV Acquired: 12/5/2014 16:22:56 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.9518**	**46.85**	**4.883**	**4.753**	**4.698**	**4.758**	**4.831**	**50.50**	**4.882**
Stddev	.0045	.37	.047	.035	.049	.059	.055	.53	.054
%RSD	.4690	.7885	.9703	.7465	1.040	1.245	1.141	1.043	1.097
#1	.9485	46.80	4.833	4.720	4.657	4.704	4.770	49.90	4.822
#2	.9500	47.24	4.891	4.790	4.752	4.749	4.844	50.80	4.900
#3	.9568	46.51	4.926	4.748	4.686	4.821	4.878	50.81	4.925
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.976**	**4.965**	**4.850**	**48.57**	**48.02**	**4.703**	**48.91**	**4.865**	**.9845**
Stddev	.052	.022	.059	.24	.41	.044	.31	.028	.0101
%RSD	1.039	.4402	1.213	.4857	.8510	.9398	.6287	.5756	1.026
#1	4.917	4.954	4.785	48.40	47.89	4.699	48.59	4.850	.9733
#2	4.995	4.951	4.865	48.84	48.48	4.749	49.20	4.897	.9875
#3	5.015	4.990	4.899	48.46	47.69	4.661	48.94	4.847	.9928
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**47.37**	**5.010**	**50.29**	**5.034**	**48.16**	**.9641**	**.9713**	**4.727**	**5.015**
Stddev	.43	.050	.49	.044	.52	.0132	.0114	.035	.047
%RSD	.9122	1.005	.9778	.8807	1.087	1.366	1.170	.7307	.9279
#1	47.19	4.953	49.74	4.984	47.58	.9497	.9589	4.709	4.963
#2	47.86	5.029	50.46	5.049	48.28	.9669	.9737	4.767	5.031
#3	47.05	5.047	50.68	5.068	48.61	.9756	.9813	4.705	5.052
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: CCV Acquired: 12/5/2014 16:22:56 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.798**	**4.841**	**4.780**	**1.010**	**4.841**	**4.833**	**4.926**
Stddev	.046	.013	.027	.010	.009	.030	.052
%RSD	.9504	.2763	.5723	.9781	.1751	.6273	1.058
#1	4.774	4.829	4.763	.9989	4.836	4.816	4.867
#2	4.851	4.838	4.812	1.012	4.836	4.868	4.942
#3	4.770	4.856	4.766	1.018	4.851	4.814	4.968
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**4324.6**
Stddev	41.7
%RSD	.96397
#1	4372.6
#2	4303.6
#3	4297.5

Sample Name: CCB Acquired: 12/5/2014 16:26:45 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0003**	**.0063**	**.0006**	**.0126**	**.0006**	**.0005**	**<.0000**	**.0033**	**.0002**
Stddev	.0006	.0049	.0007	.0035	.0003	.0001	.0021	.0004	.0001
%RSD	179.6	77.80	110.5	27.71	48.14	21.37	184.0	12.17	37.59
#1	.0009	.0102	.0012	.0163	.0007	.0006	.0010	.0032	.0002
#2	-.0003	.0008	.0008	.0121	.0003	.0004	-.0032	.0038	.0001
#3	.0004	.0080	-.0001	.0093	.0007	.0004	-.0013	.0030	.0003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**<.0000**	**.0007**	**.0013**	**.0050**	**.0657**	**.0006**	**.0100**	**.0003**	**.0000**
Stddev	.0002	.0003	.0014	.0020	.0493	.0003	.0039	.0002	.0001
%RSD	126.6	49.93	114.6	40.06	75.05	42.24	39.59	75.99	573.8
#1	.0000	.0004	.0023	.0073	.0759	.0008	.0077	.0005	-.0001
#2	-.0003	.0011	-.0004	.0039	.0121	.0008	.0077	.0004	.0000
#3	-.0001	.0006	.0019	.0037	.1091	.0003	.0145	.0000	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0088**	**.0004**	**.0017**	**.0017**	**.0090**	**<.0000**	**.0012**	**.0035**	**.0002**
Stddev	.0101	.0001	.0006	.0008	.0012	.0014	.0012	.0032	.0005
%RSD	114.3	14.86	32.85	47.73	13.47	244.9	101.3	90.58	264.2
#1	.0075	.0005	.0013	.0014	.0092	-.0012	.0024	.0007	.0006
#2	-.0006	.0004	.0024	.0027	.0077	.0010	.0010	.0069	-.0004
#3	.0195	.0004	.0015	.0011	.0101	-.0016	.0001	.0029	.0004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Sample Name: CCB Acquired: 12/5/2014 16:26:45 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005	<.0000	<.0000	<.0000	<.0000	.0014	.0002
Stddev	.0001	.0026	.0005	.0009	.0013	.0043	.0000
%RSD	25.32	563.4	95.86	93.20	308.7	303.0	32.61
#1	.0006	-.0030	.0000	-.0003	.0010	.0008	.0002
#2	.0004	.0021	-.0011	-.0006	-.0015	.0060	.0001
#3	.0004	-.0005	-.0006	-.0020	-.0007	-.0025	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_3710
Units	Cts/S
Avg	4398.3
Stddev	75.2
%RSD	1.7100
#1	4485.1
#2	4351.9
#3	4357.9

Sample Name: 160-9438-F-1-D MSD Acquired: 12/5/2014 16:30:42 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0197	1.033	.0939	.2086	.0890	.0893	.1018	50.72	.0961
Stddev	.0002	.020	.0023	.0020	.0007	.0007	.0018	.74	.0014
%RSD	.9764	1.898	2.460	.9695	.8111	.8022	1.792	1.468	1.427
#1	.0199	1.021	.0956	.2109	.0890	.0898	.1036	51.40	.0971
#2	.0198	1.055	.0949	.2078	.0897	.0897	.1020	50.85	.0967
#3	.0195	1.021	.0913	.2071	.0882	.0885	.0999	49.93	.0946
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1011	.0969	.0963	.9965	1.037	.0997	15.37	.0950	.0509
Stddev	.0018	.0018	.0011	.0100	.031	.0013	.13	.0005	.0009
%RSD	1.761	1.898	1.094	1.002	2.953	1.340	.8503	.5361	1.765
#1	.1023	.0968	.0973	.9979	1.069	.0988	15.49	.0949	.0513
#2	.1019	.0987	.0963	1.006	1.035	.1012	15.37	.0956	.0516
#3	.0991	.0951	.0952	.9858	1.008	.0991	15.23	.0946	.0499
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	26.26	.0993	.1038	.1036	70.47	.0494	.0479	1.387	.1030
Stddev	.22	.0014	.0012	.0009	1.14	.0015	.0011	.014	.0016
%RSD	.8476	1.423	1.152	.8401	1.617	2.990	2.380	1.026	1.591
#1	26.33	.1007	.1051	.1045	71.34	.0477	.0465	1.382	.1047
#2	26.44	.0994	.1034	.1028	70.89	.0500	.0486	1.404	.1028
#3	26.01	.0979	.1028	.1033	69.18	.0504	.0485	1.377	.1014
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9438-F-1-D MSD Acquired: 12/5/2014 16:30:42 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6142	.0950	.0951	.0205	.0925	.0906	.1019
Stddev	.0047	.0034	.0019	.0005	.0048	.0032	.0016
%RSD	.7720	3.535	1.954	2.658	5.230	3.510	1.558
#1	.6150	.0916	.0952	.0208	.0871	.0870	.1031
#2	.6185	.0983	.0969	.0208	.0942	.0921	.1025
#3	.6091	.0951	.0932	.0199	.0963	.0928	.1001
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4238.2
Stddev	45.8
%RSD	1.0813
#1	4189.7
#2	4244.1
#3	4280.8

Sample Name: 160-9438-F-2-B Acquired: 12/5/2014 16:34:25 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.1032	<.0000	.0254	.0015	<.0000	.0003	44.27	.0001
Stddev	.0001	.0092	.0015	.0019	.0004	.0000	.0035	2.81	.0002
%RSD	47.39	8.931	287.9	7.419	24.14	10.94	1088.	6.348	151.2
#1	-.0002	.1078	.0006	.0276	.0015	.0000	.0042	41.50	.0002
#2	-.0004	.1092	.0000	.0247	.0012	.0000	-.0026	44.18	.0002
#3	-.0001	.0926	-.0022	.0240	.0019	.0000	-.0007	47.12	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0015	.0009	.0723	.5972	.0119	18.53	.0128	.0002
Stddev	.0003	.0007	.0006	.0015	.0107	.0004	.14	.0001	.0002
%RSD	875.2	48.72	67.48	2.103	1.788	3.189	.7511	.8540	112.8
#1	.0004	.0022	.0013	.0716	.5956	.0123	18.42	.0127	.0000
#2	-.0002	.0007	.0011	.0740	.6086	.0115	18.49	.0129	.0004
#3	-.0001	.0016	.0002	.0712	.5874	.0118	18.69	.0129	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	28.24	.0004	.0006	.0011	80.82	.0001	.0000	.5293	<.0000
Stddev	.22	.0001	.0004	.0009	5.55	.0009	.0027	.0057	.0002
%RSD	.7807	25.74	75.29	81.10	6.865	650.2	30370.	1.076	36.17
#1	28.06	.0003	.0002	.0019	75.24	.0011	-.0006	.5295	-.0004
#2	28.18	.0005	.0010	.0001	80.87	-.0008	.0030	.5349	-.0008
#3	28.49	.0005	.0005	.0013	86.34	.0001	-.0024	.5235	-.0005
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9438-F-2-B Acquired: 12/5/2014 16:34:25 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6383	.0014	.0020	<.0000	.0093	.0017	.0041
Stddev	.0047	.0007	.0005	.0009	.0080	.0020	.0001
%RSD	.7296	51.23	25.20	67.96	86.12	123.4	2.978
#1	.6344	.0013	.0022	-.0010	.0054	.0002	.0040
#2	.6370	.0008	.0023	-.0022	.0185	.0007	.0040
#3	.6435	.0022	.0014	-.0005	.0040	.0040	.0042
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4350.7
Stddev	17.4
%RSD	.39884
#1	4347.5
#2	4335.1
#3	4369.4

Sample Name: LB 160-157827/1-B Acquired: 12/5/2014 16:38:17 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0101	<.0000	.0014	.0002	.0000	<.0000	.0532	.0000
Stddev	.0006	.0026	.0008	.0033	.0002	.0000	.0034	.0009	.0002
%RSD	255.6	25.56	179.8	235.4	104.6	232.6	161.5	1.749	675.5
#1	-.0002	.0128	-.0008	.0011	.0000	.0000	.0003	.0537	.0002
#2	-.0009	.0077	.0005	-.0018	.0003	.0000	-.0059	.0537	-.0001
#3	.0003	.0097	-.0009	.0048	.0002	.0000	-.0006	.0521	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	.0012	.0062	.0315	.0008	.0087	.0000	.0002
Stddev	.0001	.0005	.0010	.0010	.0385	.0006	.0105	.0002	.0000
%RSD	100.0	154.3	82.58	16.23	122.5	79.38	120.8	1416.	18.73
#1	-.0001	-.0009	.0015	.0054	.0754	.0013	.0109	.0001	.0001
#2	.0000	-.0001	.0001	.0058	.0034	.0009	-.0027	-.0002	.0002
#3	-.0001	.0000	.0021	.0073	.0156	.0001	.0179	.0001	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0151	.0003	.0010	.0006	.0166	<.0000	.0010	.0187	.0004
Stddev	.0129	.0001	.0017	.0007	.0023	.0002	.0019	.0011	.0003
%RSD	85.40	24.64	164.7	114.0	13.99	50.07	194.4	5.669	63.29
#1	.0153	.0004	.0011	.0000	.0190	-.0003	.0017	.0198	.0006
#2	.0278	.0004	.0026	.0013	.0163	-.0006	.0024	.0185	.0001
#3	.0021	.0002	-.0007	.0004	.0144	-.0002	-.0012	.0177	.0004
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LB 160-157827/1-B Acquired: 12/5/2014 16:38:17 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	.0003	<.0000	<.0000	.0131	.0002	.0081
Stddev	.0000	.0005	.0003	.0005	.0059	.0022	.0002
%RSD	19.85	156.0	51.97	870.9	45.29	1069.	2.097
#1	.0002	.0005	-.0006	.0005	.0179	.0006	.0082
#2	.0002	.0008	-.0010	-.0003	.0150	-.0022	.0082
#3	.0002	-.0002	-.0003	-.0004	.0065	.0022	.0079
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4361.1
Stddev	71.0
%RSD	1.6276
#1	4298.2
#2	4347.0
#3	4438.1

Sample Name: LCS 160-160503/2-A Acquired: 12/5/2014 16:42:13 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1965**	**9.145**	**.9551**	**1.828**	**.9303**	**.9336**	**.9932**	**10.65**	**.9608**
Stddev	.0014	.096	.0048	.014	.0071	.0064	.0052	.04	.0027
%RSD	.7004	1.053	.5032	.7704	.7646	.6864	.5202	.3508	.2761
#1	.1970	9.094	.9497	1.818	.9303	.9337	.9873	10.62	.9592
#2	.1949	9.085	.9570	1.821	.9232	.9272	.9957	10.63	.9593
#3	.1975	9.256	.9587	1.844	.9374	.9400	.9967	10.69	.9638
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.051**	**1.004**	**.9929**	**9.588**	**9.218**	**.9316**	**9.231**	**.9509**	**.5072**
Stddev	.002	.006	.0042	.068	.082	.0090	.097	.0100	.0019
%RSD	.1959	.5739	.4245	.7050	.8878	.9673	1.052	1.054	.3655
#1	1.050	1.005	.9916	9.559	9.226	.9288	9.182	.9441	.5060
#2	1.049	.9978	.9894	9.540	9.132	.9242	9.168	.9461	.5062
#3	1.053	1.009	.9976	9.665	9.295	.9416	9.343	.9624	.5093
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.192**	**1.025**	**1.019**	**1.043**	**9.580**	**.4854**	**.4819**	**4.578**	**1.029**
Stddev	.069	.003	.004	.003	.018	.0001	.0007	.042	.004
%RSD	.7523	.3327	.3892	.3073	.1899	.0228	.1485	.9060	.3960
#1	9.208	1.022	1.017	1.042	9.561	.4854	.4820	4.559	1.028
#2	9.116	1.024	1.016	1.040	9.582	.4853	.4811	4.549	1.025
#3	9.251	1.029	1.023	1.046	9.597	.4855	.4825	4.625	1.033
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LCS 160-160503/2-A Acquired: 12/5/2014 16:42:13 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9538	.9833	.9400	.2124	1.039	.9347	.9825
Stddev	.0064	.0080	.0076	.0004	.004	.0078	.0019
%RSD	.6728	.8142	.8118	.1871	.4042	.8370	.1984
#1	.9540	.9819	.9355	.2120	1.044	.9284	.9810
#2	.9473	.9761	.9357	.2122	1.038	.9323	.9817
#3	.9601	.9919	.9488	.2128	1.035	.9435	.9847
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4455.0
Stddev	22.5
%RSD	.50408
#1	4466.5
#2	4469.4
#3	4429.1

Sample Name: 160-9451-B-1-B Acquired: 12/5/2014 16:45:38 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.5067	<.0000	.0083	.0316	.0001	<.0000	5.788	.0002
Stddev	.0007	.0152	.0006	.0046	.0009	.0000	.0009	.083	.0001
%RSD	377.4	2.994	48.10	55.40	2.995	28.45	177.9	1.440	43.75
#1	-.0004	.4926	-.0006	.0100	.0307	.0001	.0002	5.700	.0003
#2	-.0008	.5048	-.0014	.0118	.0314	.0001	-.0015	5.798	.0001
#3	.0006	.5227	-.0019	.0031	.0326	.0001	-.0002	5.866	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	.0014	.0029	.4540	.4866	.0015	.7991	.0174	<.0000
Stddev	.0002	.0012	.0008	.0108	.0154	.0008	.0269	.0005	.0002
%RSD	72.57	81.19	27.50	2.386	3.165	54.36	3.371	2.949	314.7
#1	.0005	.0024	.0034	.4426	.4700	.0019	.7698	.0170	-.0001
#2	.0002	.0018	.0034	.4553	.5005	.0006	.8050	.0172	-.0002
#3	.0001	.0001	.0020	.4642	.4894	.0020	.8227	.0180	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.102	.0013	.0112	.0017	.4099	.0009	<.0000	2.891	.0001
Stddev	.041	.0002	.0012	.0003	.0043	.0016	.0012	.082	.0006
%RSD	1.967	17.60	11.02	16.25	1.047	181.7	131.1	2.834	438.7
#1	2.058	.0015	.0123	.0019	.4050	-.0002	-.0022	2.813	.0007
#2	2.108	.0013	.0114	.0019	.4117	.0001	.0002	2.884	.0002
#3	2.141	.0010	.0099	.0014	.4130	.0028	-.0008	2.976	-.0005
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9451-B-1-B Acquired: 12/5/2014 16:45:38 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0382	.0012	.0059	.0005	.0065	.0013	.0068
Stddev	.0010	.0036	.0004	.0015	.0143	.0010	.0001
%RSD	2.557	300.2	5.974	307.8	217.9	72.77	1.132
#1	.0372	.0005	.0055	.0018	.0001	.0010	.0068
#2	.0384	-.0020	.0061	-.0011	.0229	.0025	.0068
#3	.0391	.0051	.0062	.0008	-.0034	.0006	.0067
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4390.6
Stddev	76.7
%RSD	1.7477
#1	4474.1
#2	4374.6
#3	4323.1

Sample Name: 160-9451-B-1-B SD Acquired: 12/5/2014 16:49:33 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=50

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0003**	**.1001**	**.0007**	**.0028**	**.0063**	**<.0000**	**<.0000**	**1.126**	**<.0000**
Stddev	.0008	.0145	.0005	.0002	.0000	.0001	.0010	.007	.0001
%RSD	238.8	14.46	74.27	5.863	.6331	600.6	29.02	.6229	130.0
#1	.0001	.0929	.0013	.0030	.0063	.0000	-.0046	1.124	.0000
#2	-.0003	.0907	.0004	.0026	.0063	.0000	-.0028	1.120	-.0002
#3	.0012	.1168	.0004	.0027	.0063	-.0001	-.0029	1.134	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000**	**.0004**	**<.0000**	**.0866**	**.1429**	**.0004**	**.1538**	**.0034**	**.0001**
Stddev	.0002	.0007	.0005	.0034	.0365	.0006	.0047	.0002	.0003
%RSD	5103.	186.8	1943.	3.961	25.56	153.5	3.043	6.312	524.9
#1	.0000	-.0004	.0000	.0882	.1007	.0006	.1562	.0034	.0001
#2	-.0002	.0006	.0005	.0826	.1644	-.0003	.1485	.0031	.0003
#3	.0002	.0010	-.0006	.0889	.1635	.0008	.1569	.0035	-.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.4065**	**.0003**	**.0034**	**.0020**	**.0831**	**<.0000**	**<.0000**	**.5607**	**.0002**
Stddev	.0147	.0001	.0007	.0004	.0027	.0014	.0018	.0060	.0005
%RSD	3.627	52.88	20.01	22.49	3.238	272.6	139.3	1.078	298.8
#1	.3956	.0002	.0026	.0024	.0837	.0008	-.0023	.5539	.0005
#2	.4233	.0004	.0037	.0015	.0801	-.0019	-.0024	.5629	-.0004
#3	.4007	.0002	.0038	.0021	.0854	-.0004	.0008	.5654	.0004
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9451-B-1-B SD Acquired: 12/5/2014 16:49:33 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=50

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0074	.0010	.0009	<.0000	.0045	.0024	.0067
Stddev	.0001	.0036	.0007	.0009	.0097	.0016	.0002
%RSD	1.107	356.2	72.09	83.67	214.0	68.00	2.423
#1	.0073	.0050	.0006	-.0014	-.0011	.0017	.0069
#2	.0074	.0000	.0017	-.0001	.0158	.0042	.0066
#3	.0074	-.0020	.0004	-.0017	-.0010	.0012	.0067
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4250.9
Stddev	40.5
%RSD	.95349
#1	4283.2
#2	4264.1
#3	4205.4

Sample Name: 160-9451-B-1-C MS Acquired: 12/5/2014 16:53:28 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0204**	**1.764**	**.0985**	**.1861**	**.1264**	**.0936**	**.1057**	**7.630**	**.1011**
Stddev	.0008	.029	.0010	.0042	.0021	.0014	.0042	.166	.0021
%RSD	4.102	1.641	1.043	2.241	1.664	1.528	3.950	2.175	2.114
#1	.0213	1.770	.0984	.1878	.1265	.0936	.1049	7.502	.0995
#2	.0196	1.733	.0975	.1813	.1243	.0921	.1019	7.570	.1003
#3	.0203	1.790	.0995	.1891	.1285	.0950	.1102	7.817	.1035
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1115**	**.1039**	**.1077**	**1.457**	**1.450**	**.0941**	**1.817**	**.1149**	**.0528**
Stddev	.0024	.0027	.0020	.026	.023	.0022	.024	.0023	.0009
%RSD	2.121	2.589	1.840	1.808	1.574	2.302	1.340	2.024	1.760
#1	.1095	.1033	.1056	1.456	1.462	.0948	1.805	.1148	.0519
#2	.1108	.1015	.1080	1.432	1.424	.0916	1.800	.1125	.0526
#3	.1141	.1068	.1095	1.484	1.464	.0958	1.845	.1172	.0538
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.160**	**.1106**	**.1182**	**.1130**	**1.465**	**.0519**	**.0496**	**4.010**	**.1087**
Stddev	.055	.0021	.0024	.0025	.035	.0014	.0016	.063	.0024
%RSD	1.743	1.873	2.057	2.215	2.370	2.738	3.301	1.571	2.232
#1	3.171	.1094	.1175	.1117	1.434	.0506	.0477	4.035	.1070
#2	3.100	.1094	.1162	.1115	1.457	.0516	.0501	3.938	.1076
#3	3.208	.1130	.1209	.1159	1.502	.0534	.0509	4.056	.1115
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9451-B-1-C MS Acquired: 12/5/2014 16:53:28 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1351	.0991	.0986	.0224	.1059	.0959	.1097
Stddev	.0018	.0024	.0019	.0007	.0123	.0028	.0023
%RSD	1.354	2.379	1.965	3.065	11.67	2.964	2.125
#1	.1353	.0964	.0992	.0230	.0922	.0977	.1077
#2	.1332	.1004	.0965	.0217	.1163	.0926	.1090
#3	.1368	.1006	.1002	.0224	.1090	.0974	.1123
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4342.7
Stddev	60.9
%RSD	1.4023
#1	4367.8
#2	4387.1
#3	4273.3

Sample Name: 160-9451-B-1-D MSD Acquired: 12/5/2014 16:57:11 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0195**	**1.696**	**.0954**	**.1843**	**.1231**	**.0918**	**.1011**	**7.019**	**.0973**
Stddev	.0002	.017	.0018	.0045	.0015	.0014	.0016	.097	.0011
%RSD	.8463	.9902	1.882	2.456	1.203	1.497	1.591	1.388	1.107
#1	.0197	1.685	.0947	.1895	.1232	.0923	.0998	7.044	.0972
#2	.0193	1.716	.0974	.1827	.1245	.0929	.1029	7.101	.0984
#3	.0195	1.689	.0940	.1808	.1215	.0902	.1006	6.911	.0962
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1063**	**.1012**	**.1016**	**1.399**	**1.419**	**.0932**	**1.728**	**.1119**	**.0502**
Stddev	.0013	.0022	.0020	.020	.043	.0022	.034	.0020	.0007
%RSD	1.244	2.217	1.922	1.452	3.061	2.319	1.948	1.767	1.401
#1	.1066	.1013	.1034	1.409	1.438	.0918	1.743	.1121	.0506
#2	.1075	.1033	.1017	1.412	1.450	.0957	1.752	.1137	.0507
#3	.1049	.0988	.0995	1.376	1.369	.0921	1.689	.1098	.0494
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.040**	**.1052**	**.1135**	**.1087**	**1.387**	**.0481**	**.0501**	**3.780**	**.1038**
Stddev	.038	.0011	.0016	.0017	.014	.0021	.0010	.065	.0009
%RSD	1.256	1.086	1.397	1.581	.9923	4.422	1.942	1.720	.8380
#1	3.045	.1055	.1127	.1090	1.382	.0505	.0510	3.796	.1041
#2	3.075	.1062	.1154	.1104	1.403	.0466	.0503	3.835	.1045
#3	2.999	.1040	.1125	.1069	1.377	.0471	.0491	3.708	.1028
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9451-B-1-D MSD Acquired: 12/5/2014 16:57:11 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1316	.1001	.0970	.0219	.1129	.0953	.1043
Stddev	.0019	.0031	.0017	.0009	.0264	.0026	.0010
%RSD	1.455	3.112	1.755	3.958	23.38	2.740	1.005
#1	.1321	.1008	.0967	.0217	.1031	.0982	.1045
#2	.1332	.1028	.0988	.0229	.1428	.0947	.1053
#3	.1295	.0967	.0954	.0212	.0928	.0931	.1032
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4301.6
Stddev	83.4
%RSD	1.9392
#1	4265.7
#2	4242.1
#3	4396.9

Sample Name: 160-9451-B-2-B Acquired: 12/5/2014 17:00:53 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0373	<.0000	.0009	.0172	.0000	<.0000	5.850	.0000
Stddev	.0004	.0056	.0008	.0041	.0002	.0000	.0013	.182	.0001
%RSD	56.41	15.04	234.0	450.9	.9394	247.0	82.68	3.116	344.7
#1	-.0003	.0401	-.0012	.0047	.0170	.0000	-.0003	5.675	-.0001
#2	-.0010	.0308	.0000	.0015	.0172	.0000	-.0028	5.837	.0001
#3	-.0007	.0409	.0002	-.0035	.0173	.0000	-.0015	6.039	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0006	.0006	.0399	.2909	.0007	.6857	.0045	.0001
Stddev	.0002	.0006	.0011	.0006	.0184	.0008	.0177	.0002	.0002
%RSD	135.6	90.58	169.7	1.579	6.312	121.0	2.577	3.905	190.0
#1	-.0001	.0010	.0017	.0392	.2706	.0009	.6711	.0046	.0003
#2	-.0003	.0009	-.0005	.0400	.2957	-.0002	.6806	.0046	.0001
#3	.0000	.0000	.0007	.0404	.3064	.0014	.7054	.0043	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.208	.0006	.0065	.0017	.6351	<.0000	.0005	1.662	.0002
Stddev	.016	.0002	.0010	.0011	.0219	.0009	.0020	.010	.0001
%RSD	.7054	29.87	15.27	65.99	3.448	201.4	368.1	.6127	65.84
#1	2.206	.0004	.0063	.0004	.6145	.0006	.0028	1.651	.0003
#2	2.194	.0006	.0055	.0022	.6326	-.0011	-.0004	1.663	.0003
#3	2.225	.0007	.0075	.0024	.6581	-.0010	-.0008	1.671	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9451-B-2-B Acquired: 12/5/2014 17:00:53 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0362	<.0000	.0012	<.0000	<.0000	<.0000	.0031
Stddev	.0002	.0011	.0006	.0011	.0123	.0016	.0001
%RSD	.6053	979.1	45.74	91.28	127.6	248.1	1.838
#1	.0361	.0003	.0012	-.0022	-.0203	.0006	.0030
#2	.0360	-.0013	.0018	-.0012	-.0123	-.0025	.0031
#3	.0364	.0007	.0007	-.0001	.0038	-.0001	.0031
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4407.4
Stddev	31.8
%RSD	.72199
#1	4444.0
#2	4386.1
#3	4392.1

Sample Name: 160-9451-B-3-B Acquired: 12/5/2014 17:04:48 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0703	.0000	.0122	.0083	.0001	.0001	5.589	<.0000
Stddev	.0004	.0032	.0005	.0017	.0000	.0000	.0013	.169	.0001
%RSD	213.3	4.548	2186.	13.83	.4650	54.65	1088.	3.024	979.5
#1	-.0002	.0668	.0000	.0117	.0083	.0000	.0000	5.441	.0001
#2	.0002	.0713	-.0004	.0108	.0084	.0001	-.0011	5.553	-.0002
#3	-.0007	.0730	.0005	.0141	.0083	.0000	.0015	5.773	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0000	.0018	.0653	.1738	.0021	1.113	.0099	.0004
Stddev	.0002	.0011	.0019	.0019	.0262	.0006	.013	.0002	.0001
%RSD	180.7	202000.	102.8	2.921	15.07	27.74	1.181	2.244	23.09
#1	.0001	.0001	.0036	.0640	.1675	.0016	1.105	.0100	.0004
#2	-.0002	.0010	.0021	.0645	.2025	.0021	1.106	.0101	.0003
#3	-.0002	-.0012	-.0002	.0675	.1513	.0027	1.128	.0097	.0005
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.14	.0007	.0076	.0015	2.479	<.0000	<.0000	1.431	.0004
Stddev	.06	.0002	.0005	.0007	.076	.0011	.0012	.004	.0001
%RSD	.5587	24.66	6.650	49.97	3.072	206.2	131.7	.2737	13.29
#1	11.07	.0005	.0082	.0008	2.421	.0007	-.0011	1.427	.0004
#2	11.15	.0007	.0074	.0023	2.451	-.0009	.0004	1.435	.0005
#3	11.19	.0009	.0073	.0013	2.566	-.0013	-.0020	1.431	.0005
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9451-B-3-B Acquired: 12/5/2014 17:04:48 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0616	<.0000	.0013	.0000	.0012	.0007	.0034
Stddev	.0004	.0005	.0001	.0004	.0149	.0005	.0001
%RSD	.6271	327.0	8.385	912.2	1287.	75.92	1.689
#1	.0612	-.0008	.0014	.0002	.0082	.0013	.0034
#2	.0618	.0003	.0014	.0004	.0111	.0005	.0034
#3	.0619	.0000	.0012	-.0005	-.0159	.0003	.0035
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4235.2
Stddev	1.9
%RSD	.04457
#1	4235.9
#2	4236.6
#3	4233.0

Sample Name: CCV Acquired: 12/5/2014 17:08:42 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.9916**	**49.13**	**5.155**	**4.963**	**4.939**	**5.041**	**5.099**	**52.88**	**5.133**
Stddev	.0138	.75	.154	.075	.073	.033	.153	1.52	.150
%RSD	1.390	1.523	2.977	1.517	1.470	.6579	2.990	2.869	2.927
#1	.9864	49.10	5.080	4.947	4.881	5.034	5.027	52.20	5.068
#2	.9813	48.40	5.054	4.897	4.915	5.012	4.997	51.82	5.025
#3	1.007	49.89	5.332	5.045	5.020	5.077	5.275	54.62	5.304
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.227**	**5.174**	**5.106**	**50.97**	**50.37**	**4.949**	**50.68**	**5.058**	**1.036**
Stddev	.147	.082	.148	.93	.73	.065	1.14	.089	.029
%RSD	2.822	1.580	2.904	1.832	1.456	1.304	2.243	1.762	2.753
#1	5.158	5.156	5.041	50.79	50.34	4.958	50.25	5.035	1.025
#2	5.127	5.102	5.002	50.14	49.64	4.880	49.83	4.984	1.015
#3	5.397	5.263	5.276	51.98	51.11	5.008	51.98	5.157	1.068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**49.60**	**5.260**	**52.96**	**5.279**	**51.03**	**1.017**	**1.027**	**4.941**	**5.267**
Stddev	.76	.147	1.56	.145	1.58	.030	.030	.094	.147
%RSD	1.536	2.802	2.939	2.749	3.095	2.992	2.936	1.898	2.786
#1	49.65	5.195	52.21	5.220	50.34	1.004	1.013	4.934	5.198
#2	48.81	5.156	51.93	5.173	49.91	.9954	1.006	4.851	5.168
#3	50.33	5.429	54.75	5.445	52.84	1.052	1.062	5.039	5.436
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: CCV Acquired: 12/5/2014 17:08:42 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.040**	**5.048**	**5.009**	**1.059**	**5.034**	**5.019**	**5.177**
Stddev	.145	.089	.089	.029	.070	.084	.146
%RSD	2.886	1.762	1.785	2.742	1.389	1.679	2.825
#1	5.115	5.020	4.999	1.046	5.012	4.985	5.112
#2	4.873	4.977	4.925	1.039	4.977	4.956	5.075
#3	5.133	5.148	5.103	1.092	5.112	5.115	5.344
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**4221.1**
Stddev	82.6
%RSD	1.9578
#1	4243.8
#2	4290.1
#3	4129.5

Sample Name: CCB Acquired: 12/5/2014 17:12:31 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0003**	**.0027**	**.0004**	**.0114**	**.0005**	**.0005**	**.0012**	**.0022**	**.0002**
Stddev	.0002	.0080	.0011	.0021	.0001	.0001	.0016	.0003	.0002
%RSD	60.57	301.6	288.4	18.33	24.05	17.02	135.9	15.81	110.6
#1	.0003	-.0051	-.0006	.0138	.0007	.0006	.0015	.0026	.0004
#2	.0001	.0021	.0015	.0100	.0006	.0005	-.0005	.0019	.0001
#3	.0005	.0109	.0002	.0104	.0004	.0004	.0027	.0020	.0000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000**	**.0011**	**<.0000**	**.0026**	**.0523**	**<.0000**	**.0107**	**.0004**	**<.0000**
Stddev	.0000	.0006	.0004	.0019	.0159	.0007	.0033	.0001	.0001
%RSD	120.9	53.75	67.55	73.07	30.46	1338.	30.78	31.99	110.6
#1	.0000	.0011	-.0002	.0047	.0559	-.0008	.0108	.0005	-.0001
#2	.0001	.0016	-.0011	.0015	.0661	.0001	.0140	.0004	-.0002
#3	.0000	.0005	-.0007	.0015	.0349	.0006	.0074	.0003	.0000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0050**	**.0003**	**.0027**	**.0007**	**.0049**	**.0013**	**.0006**	**.0003**	**.0003**
Stddev	.0041	.0003	.0009	.0009	.0029	.0004	.0006	.0018	.0004
%RSD	80.46	119.6	32.42	141.2	59.93	32.73	102.0	667.9	133.8
#1	.0005	.0006	.0029	.0009	.0055	.0009	.0010	.0023	-.0001
#2	.0084	.0000	.0034	-.0004	.0017	.0013	-.0001	-.0002	.0005
#3	.0062	.0002	.0017	.0015	.0075	.0018	.0008	-.0013	.0004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Sample Name: CCB Acquired: 12/5/2014 17:12:31 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	.0001	.0000	<.0000	.0040	.0022	.0002
Stddev	.0001	.0015	.0006	.0009	.0171	.0005	.0000
%RSD	26.07	1174.	1971.	68.63	432.3	22.85	20.15
#1	.0006	-.0015	-.0004	-.0003	-.0048	.0027	.0002
#2	.0004	.0005	-.0002	-.0020	-.0070	.0019	.0002
#3	.0004	.0013	.0007	-.0019	.0237	.0018	.0003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_3710
Units	Cts/S
Avg	4189.6
Stddev	46.6
%RSD	1.1126
#1	4137.4
#2	4204.4
#3	4227.0

Sample Name: 160-9451-B-4-B Acquired: 12/5/2014 17:16:28 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0049	<.0000	.0061	.0005	.0001	.0016	.1104	.0001
Stddev	.0006	.0038	.0002	.0008	.0001	.0001	.0016	.0007	.0000
%RSD	119.5	77.70	74.54	13.27	13.89	90.63	102.3	.6082	30.33
#1	.0002	.0021	-.0001	.0057	.0004	.0001	.0034	.1096	.0001
#2	-.0008	.0034	-.0003	.0071	.0005	.0000	.0012	.1107	.0001
#3	-.0008	.0093	-.0005	.0056	.0005	.0001	.0002	.1109	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0015	.0013	.1202	.0258	<.0000	.0008	.0013	.0002
Stddev	.0000	.0003	.0016	.0014	.0071	.0007	.0144	.0003	.0002
%RSD	77.14	21.35	117.3	1.167	27.59	86.76	1848.	20.81	106.2
#1	.0001	.0018	.0021	.1186	.0191	-.0004	.0001	.0013	.0001
#2	.0000	.0013	.0024	.1208	.0249	-.0017	-.0132	.0016	.0003
#3	.0000	.0013	-.0005	.1212	.0333	-.0005	.0155	.0010	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0182	.0002	.0014	.0009	.0119	.0008	.0011	.0245	.0003
Stddev	.0066	.0002	.0007	.0004	.0010	.0015	.0017	.0044	.0002
%RSD	36.15	95.76	53.14	41.44	8.197	192.9	152.3	18.11	79.52
#1	.0257	.0003	.0022	.0011	.0120	.0016	.0031	.0246	.0005
#2	.0151	.0001	.0011	.0005	.0109	-.0010	.0007	.0200	.0000
#3	.0137	.0001	.0008	.0011	.0129	.0017	-.0003	.0289	.0004
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9451-B-4-B Acquired: 12/5/2014 17:16:28 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	.0023	<.0000	.0006	.0018	.0005	.0062
Stddev	.0000	.0041	.0004	.0006	.0113	.0017	.0002
%RSD	14.35	175.9	135.0	94.99	632.3	375.8	2.544
#1	.0003	-.0007	.0000	.0012	.0131	-.0006	.0060
#2	.0003	.0007	-.0007	.0007	-.0095	-.0005	.0062
#3	.0004	.0070	-.0001	.0000	.0017	.0024	.0063
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4199.6
Stddev	57.4
%RSD	1.3659
#1	4261.6
#2	4188.8
#3	4148.4

Sample Name: MB 160-160195/1-A Acquired: 12/5/2014 17:20:24 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0107	<.0000	.0093	.0003	.0000	<.0000	.1334	.0001
Stddev	.0005	.0077	.0005	.0031	.0001	.0001	.0003	.0003	.0000
%RSD	123.8	72.58	1135.	33.51	28.85	258.4	11.27	.2585	25.69
#1	-.0007	.0126	-.0003	.0123	.0004	.0001	-.0023	.1338	.0001
#2	-.0008	.0172	.0005	.0096	.0002	.0000	-.0028	.1331	.0001
#3	.0002	.0021	-.0003	.0061	.0003	.0000	-.0026	.1332	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0004	.0023	.0511	.0289	.0001	.0309	.0004	<.0000
Stddev	.0001	.0002	.0018	.0019	.0115	.0005	.0030	.0002	.0002
%RSD	52.64	46.41	77.98	3.630	39.81	473.0	9.794	46.70	278.3
#1	-.0001	.0007	.0042	.0500	.0419	-.0004	.0344	.0006	-.0002
#2	-.0002	.0003	.0017	.0533	.0199	.0006	.0290	.0005	-.0002
#3	-.0002	.0004	.0008	.0502	.0250	.0001	.0292	.0002	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0254	.0003	.0017	.0008	.0074	<.0000	<.0000	.0455	.0019
Stddev	.0064	.0003	.0010	.0004	.0019	.0011	.0008	.0026	.0002
%RSD	25.12	83.13	59.38	54.40	25.68	6045.	104.0	5.820	8.915
#1	.0308	.0004	.0007	.0012	.0058	.0012	-.0008	.0467	.0020
#2	.0271	.0005	.0026	.0008	.0069	-.0006	.0000	.0425	.0017
#3	.0184	.0000	.0017	.0003	.0096	-.0007	-.0017	.0473	.0021
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: MB 160-160195/1-A Acquired: 12/5/2014 17:20:24 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	.0007	.0000	.0001	.0095	.0030	.0085
Stddev	.0000	.0004	.0004	.0003	.0045	.0010	.0001
%RSD	18.28	61.24	1406.	308.6	47.27	33.60	1.011
#1	.0002	.0009	.0005	.0000	.0140	.0027	.0085
#2	.0001	.0009	-.0004	-.0001	.0094	.0022	.0085
#3	.0002	.0002	.0001	.0004	.0051	.0041	.0086
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4330.7
Stddev	23.1
%RSD	.53453
#1	4345.6
#2	4304.0
#3	4342.5

Sample Name: LCSSRM 160-160195/2- Acquired: 12/5/2014 17:24:20 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=2

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.3406**	**34.63**	**.4524**	**.4086**	**.9582**	**.2708**	**.0016**	**40.59**	**.7259**
Stddev	.0022	.11	.0014	.0033	.0011	.0003	.0014	.23	.0033
%RSD	.6337	.3071	.2996	.8089	.1097	.0932	90.97	.5774	.4538
#1	.3393	34.67	.4511	.4081	.9575	.2705	.0032	40.60	.7269
#2	.3393	34.50	.4524	.4056	.9576	.2710	.0009	40.35	.7222
#3	.3431	34.70	.4538	.4122	.9594	.2708	.0006	40.82	.7285
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.081**	**.4551**	**1.367**	**58.00**	**11.06**	**.0360**	**12.98**	**2.070**	**.5384**
Stddev	.005	.0051	.008	.03	.02	.0003	.07	.006	.0018
%RSD	.4828	1.124	.5790	.0546	.1713	.7859	.5593	.2686	.3346
#1	1.082	.4525	1.371	57.98	11.04	.0360	12.98	2.073	.5396
#2	1.075	.4517	1.358	57.99	11.06	.0363	12.91	2.064	.5363
#3	1.085	.4609	1.372	58.04	11.08	.0357	13.06	2.074	.5392
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.787**	**1.264**	**2.758**	**.5267**	**1.271**	**.4830**	**.6551**	**1.283**	**.7923**
Stddev	.007	.005	.013	.0028	.003	.0011	.0025	.018	.0034
%RSD	.1454	.3602	.4823	.5321	.1932	.2288	.3809	1.444	.4234
#1	4.780	1.265	2.751	.5252	1.269	.4831	.6542	1.279	.7929
#2	4.786	1.260	2.749	.5249	1.270	.4819	.6531	1.266	.7887
#3	4.794	1.269	2.773	.5299	1.274	.4841	.6579	1.303	.7953
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LCSSRM 160-160195/2- Acquired: 12/5/2014 17:24:20 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=2

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8029	.0456	.7171	.7685	.0612	.7107	.6603
Stddev	.0008	.0004	.0003	.0043	.0074	.0034	.0024
%RSD	.0957	.9545	.0362	.5580	12.17	.4759	.3665
#1	.8021	.0459	.7173	.7676	.0696	.7077	.6597
#2	.8030	.0451	.7171	.7648	.0553	.7101	.6583
#3	.8036	.0459	.7168	.7732	.0587	.7144	.6630
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4779.1
Stddev	4.8
%RSD	.09958
#1	4774.5
#2	4784.0
#3	4778.9

Sample Name: 160-9613-A-1-E Acquired: 12/5/2014 17:27:50 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	38.40	.0028	.0379	.6422	.0040	<.0000	182.5	<.0000
Stddev	.0007	.37	.0009	.0023	.0055	.0001	.0016	1.8	.0000
%RSD	456.6	.9611	33.51	6.167	.8574	1.254	184.6	.9902	10.72
#1	-.0009	38.83	.0029	.0406	.6486	.0041	-.0017	184.3	-.0002
#2	.0006	38.15	.0018	.0369	.6397	.0040	.0010	180.7	-.0002
#3	-.0001	38.23	.0036	.0362	.6385	.0040	-.0018	182.6	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0069	.0024	4.831	2.047	.0357	30.49	1.295	.0001
Stddev	.0003	.0005	.0001	.045	.025	.0002	.28	.011	.0001
%RSD	77.22	6.919	5.197	.9345	1.239	.4553	.9044	.8671	47.44
#1	-.0008	.0064	.0025	4.882	2.072	.0357	30.78	1.307	.0001
#2	-.0002	.0069	.0022	4.812	2.022	.0358	30.23	1.285	.0002
#3	-.0002	.0074	.0024	4.797	2.049	.0355	30.46	1.293	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.018	<.0000	.0207	<.0000	5.873	<.0000	<.0000	.0502	<.0000
Stddev	.006	.0000	.0014	.0004	.092	.0021	.0001	.0046	.0003
%RSD	.6137	84.25	6.566	32.65	1.560	328.4	30.94	9.113	18.18
#1	1.025	-.0001	.0223	-.0008	5.964	-.0021	-.0001	.0544	-.0015
#2	1.017	.0000	.0202	-.0010	5.781	-.0017	-.0002	.0454	-.0020
#3	1.013	.0000	.0197	-.0015	5.875	.0018	-.0003	.0509	-.0014
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9613-A-1-E Acquired: 12/5/2014 17:27:50 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3470	.0132	1.121	<.0000	.0868	.0091	.0051
Stddev	.0028	.0007	.009	.0004	.0061	.0009	.0002
%RSD	.7935	5.651	.7774	13.32	7.054	10.07	3.087
#1	.3502	.0140	1.131	-.0025	.0937	.0101	.0052
#2	.3454	.0131	1.115	-.0031	.0844	.0089	.0049
#3	.3454	.0126	1.117	-.0025	.0822	.0083	.0051
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4570.3
Stddev	43.3
%RSD	.94641
#1	4523.6
#2	4609.0
#3	4578.4

Sample Name: 160-9613-A-1-E SD Acquired: 12/5/2014 17:31:40 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=50

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	8.366	<.0000	.0097	.1417	.0009	<.0000	42.43	<.0000
Stddev	.0001	.053	.0017	.0039	.0007	.0001	.0031	.45	.0001
%RSD	31.62	.6284	1977.	40.54	.5046	6.279	131.9	1.070	3132.
#1	-.0003	8.329	-.0020	.0115	.1413	.0008	.0011	42.19	.0001
#2	-.0004	8.342	.0014	.0124	.1412	.0010	-.0049	42.14	.0000
#3	-.0003	8.426	.0003	.0052	.1425	.0009	-.0033	42.95	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0022	.0019	1.055	.4785	.0070	6.581	.2851	<.0000
Stddev	.0001	.0002	.0016	.006	.0403	.0005	.057	.0020	.0001
%RSD	71.44	6.908	84.51	.5392	8.412	6.780	.8633	.7182	155.6
#1	-.0002	.0024	.0035	1.052	.4790	.0065	6.582	.2848	-.0001
#2	-.0002	.0021	.0018	1.051	.5186	.0073	6.523	.2833	.0000
#3	.0000	.0022	.0003	1.062	.4381	.0073	6.637	.2873	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2310	<.0000	.0029	.0007	1.266	.0008	.0006	.0141	<.0000
Stddev	.0057	.0002	.0004	.0002	.022	.0019	.0023	.0019	.0003
%RSD	2.460	91.57	14.04	28.45	1.716	235.5	360.9	13.76	31.87
#1	.2358	-.0003	.0029	.0005	1.258	.0028	.0016	.0162	-.0006
#2	.2326	-.0002	.0026	.0010	1.250	.0003	.0023	.0123	-.0012
#3	.2248	.0000	.0034	.0007	1.291	-.0008	-.0020	.0140	-.0010
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9613-A-1-E SD Acquired: 12/5/2014 17:31:40 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=50

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0769	.0033	.2449	<.0000	.0067	.0033	.0062
Stddev	.0004	.0030	.0027	.0009	.0098	.0014	.0001
%RSD	.4909	89.36	1.104	70.84	146.1	43.72	1.815
#1	.0769	.0048	.2455	-.0007	.0087	.0047	.0061
#2	.0765	-.0001	.2419	-.0009	-.0039	.0033	.0061
#3	.0773	.0054	.2472	-.0024	.0155	.0019	.0063
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4257.1
Stddev	32.8
%RSD	.76958
#1	4276.6
#2	4275.4
#3	4219.2

Sample Name: 160-9613-A-1-F MS Acquired: 12/5/2014 17:35:32 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0149**	**40.69**	**.0705**	**.1684**	**.7418**	**.0682**	**.0720**	**190.1**	**.0713**
Stddev	.0002	.79	.0022	.0049	.0133	.0012	.0010	3.0	.0011
%RSD	1.324	1.945	3.104	2.929	1.795	1.712	1.417	1.587	1.543
#1	.0148	39.82	.0683	.1628	.7276	.0669	.0710	187.1	.0702
#2	.0147	40.88	.0705	.1703	.7439	.0686	.0722	190.0	.0714
#3	.0151	41.36	.0726	.1721	.7539	.0692	.0730	193.1	.0724
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0680**	**.0732**	**.0671**	**4.638**	**2.916**	**.1024**	**32.35**	**1.455**	**.0338**
Stddev	.0012	.0015	.0012	.090	.062	.0023	.63	.027	.0008
%RSD	1.698	1.986	1.776	1.935	2.138	2.282	1.946	1.881	2.379
#1	.0668	.0723	.0658	4.536	2.846	.1004	31.63	1.424	.0330
#2	.0682	.0724	.0682	4.673	2.935	.1018	32.65	1.463	.0337
#3	.0691	.0749	.0673	4.705	2.966	.1050	32.78	1.477	.0346
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.758**	**.0669**	**.0960**	**.0725**	**6.879**	**.0116**	**.0322**	**.0993**	**.0621**
Stddev	.036	.0013	.0017	.0014	.124	.0010	.0016	.0041	.0008
%RSD	2.028	1.889	1.737	1.890	1.796	8.811	5.054	4.170	1.236
#1	1.732	.0657	.0944	.0716	6.758	.0111	.0323	.0955	.0612
#2	1.744	.0666	.0960	.0741	6.875	.0109	.0338	.1037	.0625
#3	1.799	.0682	.0977	.0718	7.005	.0127	.0305	.0986	.0626
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9613-A-1-F MS Acquired: 12/5/2014 17:35:32 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4299	.0792	1.247	.0135	.1670	.0713	.0742
Stddev	.0078	.0044	.024	.0007	.0103	.0019	.0011
%RSD	1.817	5.546	1.952	4.904	6.165	2.723	1.522
#1	.4216	.0795	1.221	.0139	.1787	.0691	.0731
#2	.4310	.0747	1.250	.0128	.1627	.0727	.0741
#3	.4371	.0835	1.270	.0140	.1594	.0722	.0753
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4620.1
Stddev	73.5
%RSD	1.5907
#1	4702.8
#2	4595.4
#3	4562.2

Sample Name: 160-9613-A-1-G MSD Acquired: 12/5/2014 17:39:14 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0165**	**46.22**	**.0812**	**.1957**	**.8406**	**.0808**	**.0758**	**211.8**	**.0824**
Stddev	.0004	.11	.0009	.0030	.0016	.0004	.0004	2.0	.0005
%RSD	2.325	.2327	1.090	1.537	.1846	.4448	.4836	.9596	.5751
#1	.0161	46.33	.0822	.1937	.8424	.0809	.0756	212.1	.0822
#2	.0167	46.12	.0806	.1942	.8398	.0805	.0757	209.7	.0821
#3	.0167	46.21	.0808	.1992	.8396	.0812	.0763	213.7	.0830
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0807**	**.0859**	**.0820**	**2.637**	**3.431**	**.1193**	**36.52**	**1.639**	**.0387**
Stddev	.0007	.0014	.0015	.008	.009	.0003	.21	.003	.0001
%RSD	.8199	1.591	1.831	.2976	.2505	.2898	.5731	.1973	.3728
#1	.0804	.0863	.0807	2.641	3.421	.1196	36.54	1.640	.0386
#2	.0803	.0844	.0837	2.628	3.435	.1194	36.30	1.635	.0386
#3	.0815	.0870	.0817	2.643	3.436	.1189	36.72	1.641	.0388
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.038**	**.0787**	**.1089**	**.0842**	**7.423**	**.0132**	**.0396**	**.2285**	**.0724**
Stddev	.012	.0003	.0010	.0006	.035	.0015	.0007	.0018	.0006
%RSD	.5843	.4312	.8826	.7345	.4777	11.26	1.708	.7825	.8481
#1	2.052	.0784	.1084	.0836	7.417	.0129	.0391	.2280	.0721
#2	2.032	.0786	.1082	.0841	7.390	.0148	.0393	.2305	.0720
#3	2.030	.0791	.1100	.0848	7.460	.0118	.0404	.2270	.0731
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9613-A-1-G MSD Acquired: 12/5/2014 17:39:14 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4921	.0924	1.487	.0142	.2103	.0860	.0858
Stddev	.0008	.0025	.005	.0003	.0093	.0015	.0004
%RSD	.1620	2.732	.3259	2.080	4.401	1.689	.4825
#1	.4929	.0944	1.491	.0145	.2179	.0857	.0858
#2	.4914	.0895	1.481	.0142	.2130	.0847	.0854
#3	.4920	.0932	1.488	.0139	.2000	.0876	.0862
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4718.2
Stddev	38.0
%RSD	.80628
#1	4713.7
#2	4758.3
#3	4682.6

Sample Name: 160-9613-A-2-C Acquired: 12/5/2014 17:42:55 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	29.93	.0005	.0339	.5127	.0032	<.0000	150.5	<.0000
Stddev	.0004	.43	.0017	.0009	.0069	.0001	.0007	2.8	.0001
%RSD	163.0	1.451	313.1	2.669	1.355	1.825	84.42	1.864	309.6
#1	-.0005	30.11	.0010	.0342	.5147	.0032	-.0004	150.0	.0001
#2	.0002	30.24	.0019	.0347	.5183	.0032	-.0004	153.6	-.0002
#3	-.0004	29.43	-.0013	.0329	.5049	.0031	-.0015	148.0	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0054	.0013	1.907	1.850	.0291	23.73	1.036	.0002
Stddev	.0001	.0010	.0009	.036	.039	.0007	.65	.021	.0002
%RSD	30.17	19.16	71.94	1.907	2.102	2.548	2.749	2.020	134.2
#1	-.0004	.0049	.0005	1.918	1.839	.0284	23.90	1.043	.0000
#2	-.0003	.0066	.0023	1.936	1.893	.0299	24.28	1.052	.0001
#3	-.0006	.0047	.0011	1.866	1.818	.0292	23.01	1.012	.0004
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8971	<.0000	.0146	<.0000	5.196	.0004	.0005	.0356	<.0000
Stddev	.0023	.0001	.0002	.0002	.116	.0010	.0007	.0038	.0003
%RSD	.2532	21.31	1.603	1235.	2.222	222.7	142.8	10.59	15.94
#1	.8997	-.0002	.0143	.0002	5.196	-.0003	.0012	.0356	-.0014
#2	.8955	-.0003	.0146	-.0002	5.312	.0001	.0006	.0393	-.0019
#3	.8961	-.0004	.0148	.0000	5.081	.0016	-.0003	.0318	-.0019
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9613-A-2-C Acquired: 12/5/2014 17:42:55 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2791	.0110	.8418	<.0000	.0711	.0081	.0034
Stddev	.0040	.0040	.0158	.0005	.0079	.0022	.0001
%RSD	1.448	35.84	1.883	15.96	11.11	27.87	3.447
#1	.2803	.0066	.8460	-.0029	.0621	.0107	.0035
#2	.2825	.0142	.8552	-.0036	.0770	.0070	.0034
#3	.2746	.0122	.8243	-.0026	.0742	.0065	.0033
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4685.9
Stddev	132.8
%RSD	2.8332
#1	4634.7
#2	4586.4
#3	4836.6

Sample Name: 160-9613-A-3-C Acquired: 12/5/2014 17:46:45 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	31.59	.0016	.0331	.5302	.0032	<.0000	172.9	<.0000
Stddev	.0004	.42	.0004	.0034	.0076	.0000	.0005	4.9	.0001
%RSD	91.02	1.330	28.76	10.33	1.431	1.026	14.70	2.831	95.55
#1	-.0009	31.46	.0019	.0324	.5267	.0032	-.0040	167.5	-.0001
#2	-.0004	32.06	.0011	.0301	.5389	.0032	-.0030	173.9	.0000
#3	-.0001	31.25	.0017	.0369	.5250	.0032	-.0038	177.2	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0046	.0017	1.909	2.017	.0315	27.03	.9806	.0000
Stddev	.0002	.0010	.0017	.026	.052	.0007	.33	.0125	.0001
%RSD	44.22	21.41	103.3	1.351	2.571	2.237	1.215	1.276	394.7
#1	-.0004	.0045	.0001	1.900	1.970	.0311	26.91	.9782	.0000
#2	-.0003	.0056	.0014	1.938	2.073	.0323	27.40	.9942	.0000
#3	-.0007	.0037	.0035	1.889	2.010	.0310	26.78	.9695	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.312	<.0000	.0147	<.0000	5.344	.0006	<.0000	.0488	<.0000
Stddev	.018	.0002	.0005	.0003	.182	.0013	.0013	.0008	.0002
%RSD	1.372	35.64	3.353	71.47	3.412	196.3	609.9	1.573	9.678
#1	1.300	-.0006	.0150	-.0004	5.139	.0001	-.0016	.0482	-.0017
#2	1.333	-.0003	.0150	-.0006	5.404	-.0002	.0010	.0497	-.0018
#3	1.303	-.0006	.0141	-.0001	5.488	.0021	-.0001	.0486	-.0021
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9613-A-3-C Acquired: 12/5/2014 17:46:45 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2963	.0121	.9853	<.0000	.0846	.0061	.0028
Stddev	.0042	.0029	.0124	.0007	.0010	.0005	.0001
%RSD	1.418	23.54	1.255	42.25	1.212	7.408	2.734
#1	.2940	.0093	.9800	-.0013	.0853	.0057	.0027
#2	.3012	.0150	.9994	-.0023	.0834	.0062	.0028
#3	.2938	.0120	.9764	-.0011	.0850	.0066	.0028
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4496.3
Stddev	48.0
%RSD	1.0668
#1	4490.8
#2	4451.3
#3	4546.8

Sample Name: 160-9613-A-4-C Acquired: 12/5/2014 17:50:35 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	29.78	.0007	.0323	.5040	.0031	<.0000	161.3	<.0000
Stddev	.0002	.58	.0013	.0032	.0119	.0001	.0011	3.2	.0001
%RSD	37.72	1.935	201.4	10.03	2.360	2.320	234.0	1.977	326.0
#1	-.0008	30.33	.0005	.0359	.5145	.0031	.0008	157.9	.0001
#2	-.0006	29.82	-.0006	.0296	.5064	.0031	-.0011	161.7	-.0001
#3	-.0004	29.18	.0021	.0313	.4911	.0030	-.0012	164.2	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0060	<.0000	1.137	1.927	.0285	24.45	1.086	.0001
Stddev	.0002	.0007	.0008	.024	.033	.0011	.41	.018	.0001
%RSD	75.58	11.03	159.4	2.074	1.703	3.812	1.679	1.670	83.82
#1	-.0006	.0067	-.0011	1.159	1.962	.0297	24.82	1.104	.0000
#2	-.0003	.0054	.0004	1.141	1.896	.0275	24.51	1.086	.0003
#3	-.0001	.0059	-.0007	1.112	1.922	.0282	24.01	1.067	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9621	<.0000	.0178	<.0000	5.313	.0004	<.0000	.0455	<.0000
Stddev	.0302	.0000	.0011	.0004	.086	.0010	.0011	.0018	.0003
%RSD	3.140	8.168	5.956	188.7	1.611	242.0	328.1	3.889	12.22
#1	.9902	-.0005	.0167	.0000	5.221	.0008	.0009	.0461	-.0021
#2	.9661	-.0004	.0179	.0000	5.328	.0013	-.0007	.0469	-.0023
#3	.9301	-.0004	.0188	-.0006	5.390	-.0007	-.0012	.0435	-.0018
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9613-A-4-C Acquired: 12/5/2014 17:50:35 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2749	.0095	.9685	<.0000	.0647	.0095	.0030
Stddev	.0065	.0044	.0195	.0011	.0021	.0027	.0001
%RSD	2.354	46.40	2.015	59.77	3.238	28.87	3.655
#1	.2808	.0142	.9872	-.0007	.0647	.0065	.0029
#2	.2760	.0087	.9701	-.0029	.0668	.0120	.0030
#3	.2680	.0055	.9483	-.0019	.0626	.0099	.0031
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4466.2
Stddev	56.9
%RSD	1.2734
#1	4419.0
#2	4450.2
#3	4529.4

Sample Name: CCV Acquired: 12/5/2014 17:54:27 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.059**	**49.78**	**5.417**	**5.041**	**5.032**	**5.091**	**5.401**	F **55.54**	**5.428**
Stddev	.017	.93	.158	.100	.123	.052	.160	1.45	.148
%RSD	1.636	1.865	2.924	1.976	2.437	1.030	2.953	2.610	2.721
#1	1.073	50.21	5.550	5.080	5.129	5.151	5.530	56.77	5.550
#2	1.064	50.41	5.458	5.116	5.073	5.060	5.449	55.91	5.469
#3	1.040	48.71	5.242	4.928	4.894	5.061	5.223	53.94	5.264
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
Value								50.00	
Range								10.00%	

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F **5.504**	**5.491**	**5.414**	**51.61**	**51.06**	**4.991**	**52.36**	**5.168**	**1.094**
Stddev	.148	.096	.154	1.08	.92	.082	1.21	.106	.031
%RSD	2.681	1.752	2.852	2.095	1.805	1.649	2.307	2.059	2.852
#1	5.627	5.577	5.543	52.24	51.50	5.014	53.16	5.238	1.119
#2	5.545	5.508	5.455	52.23	51.68	5.059	52.95	5.220	1.103
#3	5.340	5.387	5.243	50.36	50.00	4.900	50.97	5.045	1.059
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	5.000								
Range	10.00%								

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**50.38**	F **5.530**	F **55.69**	F **5.542**	**53.52**	**1.073**	**1.078**	**5.023**	F **5.534**
Stddev	.93	.146	1.58	.150	1.58	.033	.030	.120	.149
%RSD	1.837	2.644	2.835	2.713	2.944	3.040	2.770	2.390	2.692
#1	50.58	5.651	57.02	5.665	54.80	1.101	1.102	5.095	5.655
#2	51.18	5.572	56.11	5.587	53.99	1.080	1.088	5.091	5.579
#3	49.36	5.368	53.94	5.374	51.76	1.037	1.044	4.885	5.367
Check ?	Chk Pass	Chk Fail	Chk Fail	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
Value		5.000	50.00	5.000					5.000
Range		10.00%	10.00%	10.00%					10.00%

Sample Name: CCV Acquired: 12/5/2014 17:54:27 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.069	5.386	5.080	F 1.117	5.393	5.143	5.460
Stddev	.051	.103	.102	.029	.106	.095	.150
%RSD	.9991	1.922	2.013	2.615	1.974	1.852	2.752
#1	5.127	5.477	5.128	1.141	5.478	5.187	5.585
#2	5.046	5.408	5.150	1.124	5.427	5.208	5.502
#3	5.033	5.274	4.963	1.084	5.274	5.033	5.293
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value				1.000			
Range				10.00%			

Int. Std.	Y_3710
Units	Cts/S
Avg	3957.4
Stddev	95.1
%RSD	2.4030
#1	3878.5
#2	3930.6
#3	4063.0

Sample Name: CCB Acquired: 12/5/2014 17:58:16 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0011	.0001	.0141	.0006	.0004	.0005	.0048	.0002
Stddev	.0006	.0044	.0013	.0039	.0001	.0001	.0020	.0016	.0001
%RSD	187.7	414.5	1233.	27.54	20.39	18.31	417.2	32.71	72.07
#1	-.0002	.0061	.0015	.0098	.0007	.0005	-.0005	.0062	.0003
#2	.0002	-.0009	-.0002	.0152	.0007	.0004	.0027	.0051	.0001
#3	-.0009	-.0020	-.0010	.0174	.0005	.0004	-.0008	.0031	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	.0008	<.0000	.0051	.0486	<.0000	.0114	.0007	<.0000
Stddev	.0000	.0003	.0012	.0010	.0154	.0014	.0056	.0001	.0003
%RSD	23.46	31.50	969.2	18.81	31.76	647.1	49.32	12.95	474.2
#1	.0002	.0008	-.0015	.0060	.0559	-.0009	.0147	.0007	-.0004
#2	.0001	.0011	.0002	.0052	.0590	.0014	.0147	.0006	.0001
#3	.0002	.0006	.0008	.0041	.0309	-.0011	.0049	.0006	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0004	.0021	.0009	.0039	.0011	<.0000	<.0000	.0003
Stddev	.0052	.0001	.0005	.0003	.0020	.0008	.0009	.0051	.0002
%RSD	236.4	23.45	23.44	32.75	50.21	74.20	5875.	553.7	89.11
#1	-.0023	.0005	.0026	.0009	.0041	.0021	.0008	.0031	.0000
#2	-.0074	.0003	.0016	.0006	.0019	.0007	-.0011	.0008	.0003
#3	.0030	.0005	.0022	.0011	.0058	.0006	.0002	-.0067	.0005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Sample Name: CCB Acquired: 12/5/2014 17:58:16 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	.0004	.0002	.0001	<.0000	.0022	.0002
Stddev	.0002	.0027	.0003	.0006	.0082	.0027	.0000
%RSD	39.87	732.9	211.2	455.1	258.6	122.2	23.19
#1	.0006	.0033	.0001	.0008	.0026	.0017	.0002
#2	.0004	-.0002	-.0001	-.0005	-.0126	.0051	.0002
#3	.0003	-.0020	.0005	.0001	.0005	-.0002	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_3710
Units	Cts/S
Avg	4106.2
Stddev	47.6
%RSD	1.1582
#1	4152.4
#2	4108.9
#3	4057.4

Sample Name: 160-9613-A-5-C Acquired: 12/5/2014 18:02:14 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	30.89	.0006	.0317	.5172	.0032	<.0000	167.1	<.0000
Stddev	.0007	.39	.0007	.0016	.0068	.0001	.0012	9.0	.0000
%RSD	400.9	1.256	104.6	4.947	1.313	1.946	45.79	5.367	181.9
#1	.0001	30.53	.0014	.0305	.5112	.0031	-.0021	157.8	.0000
#2	-.0005	31.30	.0002	.0310	.5246	.0032	-.0016	167.9	.0000
#3	.0009	30.84	.0003	.0334	.5157	.0032	-.0038	175.7	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0076	.0027	2.766	1.891	.0300	25.14	1.231	.0001
Stddev	.0006	.0009	.0017	.037	.060	.0011	.41	.015	.0002
%RSD	229.1	12.11	62.50	1.338	3.198	3.582	1.628	1.189	193.8
#1	-.0009	.0066	.0008	2.730	1.880	.0292	24.73	1.216	-.0001
#2	.0001	.0084	.0035	2.804	1.956	.0297	25.54	1.245	.0003
#3	.0001	.0077	.0038	2.765	1.837	.0313	25.15	1.234	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9551	<.0000	.0214	<.0000	5.199	.0001	<.0000	.0505	<.0000
Stddev	.0135	.0001	.0010	.0008	.274	.0004	.0011	.0022	.0007
%RSD	1.417	77.02	4.870	255.5	5.270	580.2	2214.	4.331	39.22
#1	.9482	-.0001	.0206	-.0004	4.914	.0003	-.0001	.0510	-.0011
#2	.9707	-.0001	.0226	-.0011	5.223	-.0004	-.0011	.0524	-.0016
#3	.9465	-.0003	.0210	.0005	5.461	.0002	.0010	.0481	-.0024
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9613-A-5-C Acquired: 12/5/2014 18:02:14 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2780	.0095	1.016	<.0000	.0875	.0086	.0029
Stddev	.0039	.0034	.014	.0005	.0079	.0024	.0002
%RSD	1.420	36.35	1.377	17.84	9.053	28.17	5.600
#1	.2747	.0055	1.003	-.0025	.0868	.0062	.0027
#2	.2823	.0113	1.031	-.0033	.0799	.0085	.0029
#3	.2768	.0116	1.014	-.0035	.0957	.0111	.0030
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4558.9
Stddev	35.2
%RSD	.77202
#1	4589.1
#2	4520.2
#3	4567.3

Sample Name: 160-9613-A-6-C Acquired: 12/5/2014 18:06:04 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	31.50	.0009	.0316	.5033	.0032	<.0000	171.2	<.0000
Stddev	.0004	.39	.0005	.0016	.0063	.0000	.0009	6.3	.0000
%RSD	728.7	1.253	52.03	5.212	1.245	.9508	34.92	3.652	68.66
#1	.0004	31.11	.0009	.0331	.4979	.0032	-.0019	164.5	.0000
#2	-.0004	31.50	.0014	.0298	.5020	.0032	-.0023	172.1	.0000
#3	.0002	31.90	.0004	.0318	.5102	.0032	-.0036	176.9	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0068	.0019	4.579	1.900	.0302	26.62	1.117	<.0000
Stddev	.0003	.0005	.0010	.030	.048	.0008	.23	.008	.0002
%RSD	141.8	7.957	53.44	.6640	2.521	2.749	.8590	.7362	924.1
#1	-.0006	.0074	.0030	4.550	1.845	.0304	26.39	1.109	-.0001
#2	.0000	.0067	.0011	4.577	1.927	.0309	26.61	1.117	.0002
#3	-.0001	.0064	.0016	4.610	1.928	.0293	26.85	1.126	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9237	.0000	.0255	<.0000	5.135	.0001	<.0000	.0670	<.0000
Stddev	.0089	.0002	.0015	.0009	.209	.0011	.0003	.0105	.0001
%RSD	.9610	1817.	5.738	4335.	4.075	838.7	27.28	15.67	6.118
#1	.9243	.0000	.0247	.0011	4.922	-.0007	-.0014	.0561	-.0021
#2	.9145	.0002	.0246	-.0005	5.144	.0013	-.0008	.0771	-.0018
#3	.9322	-.0002	.0272	-.0007	5.340	-.0002	-.0010	.0677	-.0019
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9613-A-6-C Acquired: 12/5/2014 18:06:04 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2999	.0109	1.006	<.0000	.0717	.0125	.0025
Stddev	.0029	.0006	.013	.0019	.0054	.0018	.0001
%RSD	.9675	5.840	1.253	75.29	7.525	14.76	2.344
#1	.2973	.0105	.9942	-.0043	.0694	.0133	.0025
#2	.2995	.0106	1.005	-.0005	.0678	.0104	.0024
#3	.3030	.0117	1.019	-.0029	.0779	.0137	.0026
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4677.4
Stddev	26.9
%RSD	.57453
#1	4653.8
#2	4671.6
#3	4706.7

Sample Name: 160-9613-A-7-C Acquired: 12/5/2014 18:09:56 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	33.19	.0013	.0359	.5555	.0033	<.0000	179.7	.0000
Stddev	.0004	.30	.0012	.0038	.0050	.0001	.0013	9.0	.0001
%RSD	290.8	.9154	92.42	10.59	.8924	1.970	72.33	5.026	505.1
#1	-.0006	32.92	.0027	.0326	.5511	.0033	-.0005	170.9	-.0001
#2	.0002	33.12	.0009	.0401	.5546	.0034	-.0031	179.1	.0001
#3	.0000	33.52	.0004	.0352	.5609	.0034	-.0017	189.0	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0064	.0024	1.236	2.048	.0319	27.81	1.150	.0000
Stddev	.0001	.0008	.0011	.014	.031	.0006	.32	.013	.0001
%RSD	41.23	12.75	43.99	1.153	1.506	1.834	1.158	1.129	493.7
#1	-.0005	.0069	.0029	1.222	2.036	.0325	27.49	1.138	.0000
#2	-.0003	.0069	.0012	1.235	2.025	.0313	27.80	1.147	-.0001
#3	-.0003	.0055	.0031	1.251	2.083	.0319	28.13	1.164	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.212	<.0000	.0189	<.0000	5.389	<.0000	<.0000	.0602	<.0000
Stddev	.009	.0003	.0008	.0013	.297	.0011	.0007	.0030	.0006
%RSD	.7653	51.26	4.010	180.0	5.504	358.2	51.97	4.958	30.48
#1	1.205	-.0003	.0186	.0000	5.100	-.0012	-.0017	.0606	-.0013
#2	1.210	-.0004	.0182	.0001	5.375	.0009	-.0019	.0571	-.0025
#3	1.223	-.0008	.0197	-.0022	5.693	-.0006	-.0006	.0631	-.0019
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9613-A-7-C Acquired: 12/5/2014 18:09:56 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3086	.0136	1.090	<.0000	.0762	.0110	.0030
Stddev	.0027	.0015	.015	.0009	.0057	.0019	.0001
%RSD	.8671	10.87	1.331	32.02	7.523	17.05	3.800
#1	.3064	.0119	1.079	-.0037	.0820	.0089	.0031
#2	.3079	.0143	1.085	-.0020	.0705	.0117	.0031
#3	.3116	.0146	1.106	-.0026	.0762	.0125	.0029
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4473.0
Stddev	31.7
%RSD	.70930
#1	4500.0
#2	4481.0
#3	4438.1

Sample Name: 160-9613-A-8-C Acquired: 12/5/2014 18:13:46 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	36.84	.0014	.0381	.6256	.0037	<.0000	187.5	<.0000
Stddev	.0002	.22	.0002	.0032	.0024	.0000	.0012	4.5	.0001
%RSD	67.19	.5837	16.81	8.268	.3768	.9204	143.3	2.389	48.16
#1	-.0005	36.81	.0015	.0346	.6235	.0037	-.0019	184.3	-.0002
#2	-.0001	36.64	.0015	.0408	.6251	.0036	-.0011	185.6	-.0002
#3	-.0003	37.07	.0011	.0390	.6281	.0037	.0005	192.6	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0073	.0011	1.550	2.398	.0368	31.30	1.280	.0001
Stddev	.0002	.0007	.0008	.011	.024	.0007	.23	.010	.0002
%RSD	44.21	10.14	72.62	.7182	.9941	1.856	.7493	.7609	273.1
#1	-.0005	.0076	.0007	1.538	2.406	.0365	31.21	1.278	-.0001
#2	-.0002	.0064	.0006	1.549	2.417	.0363	31.12	1.272	.0001
#3	-.0005	.0078	.0020	1.561	2.371	.0376	31.56	1.291	.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.458	<.0000	.0219	.0001	5.826	.0001	<.0000	.0613	<.0000
Stddev	.004	.0002	.0007	.0006	.160	.0029	.0008	.0063	.0003
%RSD	.3100	33.08	3.388	620.0	2.738	3143.	82.60	10.25	13.80
#1	1.455	-.0006	.0220	.0006	5.709	.0032	-.0011	.0551	-.0022
#2	1.463	-.0004	.0212	-.0006	5.762	-.0003	-.0001	.0676	-.0017
#3	1.455	-.0008	.0227	.0002	6.008	-.0026	-.0015	.0612	-.0022
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9613-A-8-C Acquired: 12/5/2014 18:13:46 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3507	.0140	1.217	<.0000	.1081	.0097	.0033
Stddev	.0012	.0033	.008	.0007	.0141	.0013	.0001
%RSD	.3421	23.65	.6298	19.93	13.04	12.98	2.835
#1	.3494	.0104	1.212	-.0032	.1186	.0095	.0034
#2	.3508	.0168	1.212	-.0028	.0921	.0111	.0032
#3	.3518	.0149	1.226	-.0041	.1137	.0086	.0032
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4544.8
Stddev	34.7
%RSD	.76342
#1	4544.5
#2	4579.7
#3	4510.3

Sample Name: 160-9613-A-9-C Acquired: 12/5/2014 18:17:38 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	40.06	.0015	.0408	.6782	.0041	<.0000	206.3	<.0000
Stddev	.0003	.25	.0015	.0043	.0057	.0000	.0006	4.9	.0000
%RSD	36.42	.6347	101.9	10.48	.8399	.5717	20.32	2.360	35.07
#1	-.0007	39.82	-.0002	.0423	.6725	.0040	-.0033	202.9	-.0001
#2	-.0006	40.02	.0027	.0360	.6780	.0041	-.0023	204.2	-.0001
#3	-.0012	40.33	.0019	.0441	.6839	.0041	-.0026	211.9	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0060	.0028	1.262	2.606	.0399	34.69	1.304	<.0000
Stddev	.0002	.0009	.0006	.009	.017	.0007	.26	.007	.0000
%RSD	33.12	15.12	19.92	.6706	.6687	1.774	.7598	.5186	38.59
#1	-.0008	.0064	.0033	1.255	2.595	.0392	34.54	1.298	-.0001
#2	-.0008	.0066	.0027	1.260	2.598	.0406	34.54	1.301	-.0001
#3	-.0004	.0049	.0023	1.272	2.626	.0400	35.00	1.311	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.608	<.0000	.0219	<.0000	6.314	<.0000	.0003	.0773	<.0000
Stddev	.013	.0003	.0009	.0011	.141	.0003	.0025	.0016	.0007
%RSD	.8251	93.19	4.305	129.3	2.229	45.49	931.4	2.060	32.39
#1	1.597	-.0001	.0226	.0003	6.218	-.0008	.0003	.0755	-.0030
#2	1.603	-.0008	.0209	-.0008	6.248	-.0007	-.0023	.0786	-.0018
#3	1.623	-.0003	.0224	-.0019	6.476	-.0003	.0028	.0778	-.0018
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9613-A-9-C Acquired: 12/5/2014 18:17:38 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3835	.0135	1.261	<.0000	.0846	.0111	.0029
Stddev	.0041	.0010	.009	.0006	.0167	.0025	.0001
%RSD	1.082	7.524	.7150	19.98	19.74	22.57	2.186
#1	.3794	.0144	1.253	-.0034	.0935	.0131	.0028
#2	.3835	.0124	1.260	-.0034	.0950	.0119	.0029
#3	.3877	.0137	1.271	-.0024	.0654	.0083	.0029
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4444.4
Stddev	31.0
%RSD	.69697
#1	4437.7
#2	4478.2
#3	4417.3

Sample Name: 160-9613-A-10-C Acquired: 12/5/2014 18:21:28 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	38.64	.0011	.0383	.6520	.0038	<.0000	188.0	<.0000
Stddev	.0004	.23	.0007	.0008	.0037	.0000	.0025	1.7	.0001
%RSD	319.5	.5994	64.53	2.217	.5607	.5137	120.0	.9254	183.0
#1	.0006	38.42	.0003	.0383	.6483	.0038	-.0009	187.3	.0000
#2	.0000	38.60	.0018	.0391	.6520	.0039	-.0050	186.8	-.0001
#3	-.0002	38.88	.0012	.0374	.6557	.0038	-.0004	190.0	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0070	.0028	1.810	2.382	.0375	31.19	1.358	<.0000
Stddev	.0003	.0006	.0003	.006	.029	.0003	.15	.004	.0002
%RSD	32.62	8.685	9.115	.3436	1.204	.8643	.4749	.3062	512.8
#1	-.0010	.0075	.0027	1.810	2.351	.0372	31.29	1.356	-.0003
#2	-.0009	.0071	.0031	1.803	2.388	.0374	31.02	1.355	.0002
#3	-.0005	.0063	.0027	1.816	2.407	.0378	31.26	1.363	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.412	<.0000	.0209	<.0000	5.813	.0005	<.0000	.0576	<.0000
Stddev	.004	.0001	.0005	.0006	.028	.0015	.0015	.0059	.0003
%RSD	.2735	39.66	2.227	426.6	.4827	290.2	1459.	10.25	17.50
#1	1.412	-.0002	.0204	.0003	5.833	.0003	.0016	.0517	-.0017
#2	1.408	-.0005	.0211	-.0008	5.781	-.0009	-.0007	.0635	-.0022
#3	1.415	-.0003	.0212	.0001	5.824	.0022	-.0013	.0575	-.0015
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9613-A-10-C Acquired: 12/5/2014 18:21:28 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3565	.0101	1.216	<.0000	.0975	.0094	.0036
Stddev	.0017	.0001	.008	.0006	.0065	.0027	.0001
%RSD	.4723	1.056	.6321	18.67	6.699	28.21	3.434
#1	.3551	.0101	1.210	-.0026	.1050	.0072	.0037
#2	.3561	.0101	1.213	-.0037	.0943	.0087	.0035
#3	.3583	.0103	1.224	-.0030	.0931	.0124	.0036
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4737.3
Stddev	38.1
%RSD	.80487
#1	4693.6
#2	4763.9
#3	4754.5

Sample Name: MB 160-159177/1-A Acquired: 12/5/2014 18:25:19 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0101	<.0000	<.0000	.0003	<.0000	.0001	.0521	<.0000
Stddev	.0006	.0018	.0003	.0005	.0001	.0000	.0014	.0023	.0001
%RSD	142.5	17.97	58.86	142.6	34.91	466.1	2678.	4.487	2169.
#1	.0001	.0105	-.0002	.0002	.0004	.0000	.0013	.0545	-.0001
#2	-.0011	.0081	-.0007	-.0007	.0003	.0000	-.0015	.0518	-.0001
#3	-.0003	.0117	-.0007	-.0004	.0002	.0000	.0004	.0499	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0007	.0016	.0083	.0763	<.0000	.0035	.0005	<.0000
Stddev	.0003	.0002	.0010	.0007	.0029	.0011	.0097	.0003	.0002
%RSD	99.67	29.20	62.05	8.217	3.754	525.6	279.7	67.48	104.5
#1	-.0006	.0009	.0028	.0075	.0794	.0010	.0050	.0007	-.0001
#2	.0000	.0007	.0010	.0088	.0757	-.0009	-.0069	.0001	-.0003
#3	-.0003	.0005	.0011	.0085	.0737	-.0007	.0123	.0006	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0059	.0003	.0012	.0008	.0032	<.0000	.0010	.0147	.0006
Stddev	.0033	.0002	.0009	.0010	.0001	.0011	.0003	.0053	.0001
%RSD	56.73	51.27	70.27	125.2	2.744	93.97	24.80	36.13	19.02
#1	.0050	.0002	.0017	.0004	.0032	-.0018	.0013	.0196	.0005
#2	.0096	.0003	.0002	.0001	.0031	-.0018	.0008	.0153	.0007
#3	.0031	.0005	.0018	.0019	.0033	.0001	.0010	.0091	.0006
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: MB 160-159177/1-A Acquired: 12/5/2014 18:25:19 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	<.0000	.0001	.0004	<.0000	.0001	.0095
Stddev	.0000	.0011	.0003	.0007	.0090	.0029	.0001
%RSD	65.35	2481.	246.0	150.2	89.12	2410.	1.331
#1	.0000	.0010	-.0002	.0004	-.0092	-.0006	.0095
#2	.0001	.0001	.0004	.0011	-.0195	.0034	.0097
#3	.0000	-.0012	.0002	-.0002	-.0016	-.0024	.0094
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4021.9
Stddev	19.0
%RSD	.47226
#1	4004.3
#2	4019.3
#3	4042.0

Sample Name: LCS 160-159177/2-A Acquired: 12/5/2014 18:29:14 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2241	10.76	1.129	2.128	1.101	1.106	1.146	12.74	1.137
Stddev	.0019	.02	.016	.018	.003	.004	.017	.17	.017
%RSD	.8359	.1575	1.395	.8688	.2740	.4104	1.487	1.302	1.473
#1	.2222	10.77	1.116	2.123	1.103	1.106	1.135	12.62	1.125
#2	.2241	10.74	1.124	2.112	1.097	1.102	1.139	12.67	1.129
#3	.2260	10.78	1.147	2.148	1.101	1.111	1.166	12.93	1.156
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.251	1.193	1.186	11.20	10.91	1.102	10.76	1.110	.5989
Stddev	.017	.014	.016	.04	.05	.004	.09	.004	.0091
%RSD	1.388	1.162	1.324	.3768	.4689	.3793	.7968	.4060	1.512
#1	1.239	1.180	1.175	11.18	10.92	1.106	10.71	1.110	.5924
#2	1.244	1.191	1.179	11.17	10.85	1.097	10.71	1.106	.5950
#3	1.271	1.208	1.204	11.24	10.95	1.103	10.86	1.115	.6092
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.88	1.218	1.211	1.231	11.08	.5666	.5685	.0400	1.205
Stddev	.05	.016	.018	.018	.19	.0096	.0098	.0071	.016
%RSD	.4418	1.325	1.507	1.456	1.752	1.700	1.717	17.71	1.310
#1	10.90	1.206	1.198	1.218	10.94	.5587	.5624	.0322	1.192
#2	10.82	1.212	1.204	1.225	11.01	.5637	.5634	.0419	1.199
#3	10.91	1.236	1.232	1.252	11.30	.5774	.5798	.0460	1.223
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LCS 160-159177/2-A Acquired: 12/5/2014 18:29:14 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.128	1.165	1.093	.2493	1.229	1.090	1.171
Stddev	.004	.010	.005	.0018	.021	.005	.018
%RSD	.3337	.8543	.4262	.7248	1.667	.4951	1.494
#1	1.130	1.156	1.092	.2486	1.207	1.084	1.157
#2	1.124	1.162	1.089	.2479	1.248	1.093	1.165
#3	1.131	1.176	1.098	.2513	1.232	1.093	1.190
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4064.3
Stddev	39.5
%RSD	.97298
#1	4098.7
#2	4073.1
#3	4021.1

Sample Name: 160-9422-B-1-A Acquired: 12/5/2014 18:32:40 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0037	.6070	<.0000	.1291	.0019	.0001	.0136	5.939	.4523
Stddev	.0008	.0132	.0001	.0049	.0001	.0000	.0028	.381	.0277
%RSD	21.06	2.177	.6660	3.791	4.775	30.30	20.29	6.421	6.129
#1	.0030	.5965	-.0189	.1313	.0018	.0001	.0106	5.589	.4269
#2	.0035	.6026	-.0192	.1234	.0020	.0001	.0161	5.884	.4482
#3	.0046	.6218	-.0190	.1324	.0019	.0001	.0142	6.345	.4819
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0198	8.640	.0677	2.374	7.683	.0020	.5052	.1910	.0027
Stddev	.0014	.198	.0044	.040	.122	.0009	.0137	.0031	.0002
%RSD	7.101	2.288	6.502	1.665	1.582	46.96	2.721	1.597	8.222
#1	.0186	8.476	.0635	2.337	7.563	.0014	.4918	.1884	.0025
#2	.0194	8.583	.0673	2.369	7.678	.0030	.5193	.1904	.0026
#3	.0213	8.859	.0723	2.415	7.806	.0014	.5045	.1943	.0029
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.097	.0229	49.88	1.890	1.369	.0794	<.0000	.9339	.0006
Stddev	.058	.0015	3.08	.115	.084	.0093	.0018	.0106	.0003
%RSD	1.864	6.564	6.167	6.099	6.126	11.72	1471.	1.133	58.55
#1	3.039	.0216	47.03	1.782	1.292	.0714	.0020	.9259	.0007
#2	3.098	.0226	49.47	1.875	1.358	.0771	-.0015	.9299	.0008
#3	3.154	.0246	53.14	2.011	1.458	.0896	-.0008	.9459	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-1-A Acquired: 12/5/2014 18:32:40 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0044	.0290	.0198	.0011	.0086	.0052	5.185
Stddev	.0001	.0008	.0007	.0004	.0102	.0022	.320
%RSD	2.452	2.777	3.317	37.62	118.6	41.12	6.177
#1	.0043	.0281	.0196	.0016	.0104	.0062	4.887
#2	.0044	.0297	.0205	.0009	-.0024	.0028	5.146
#3	.0045	.0292	.0192	.0009	.0177	.0068	5.524
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4282.2
Stddev	24.0
%RSD	.55963
#1	4302.7
#2	4287.9
#3	4255.8

Sample Name: 160-9422-B-2-A Acquired: 12/5/2014 18:36:23 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**<.0000**	**<.0000**	**.1249**	**.0002**	**.0000**	**.0075**	**.9701**	**.0123**
Stddev	.0004	.0050	.0005	.0030	.0001	.0000	.0008	.0900	.0011
%RSD	403.9	151.4	3.201	2.427	63.50	74.91	10.44	9.277	9.120
#1	.0003	.0020	-.0139	.1214	.0001	.0000	.0082	.8819	.0111
#2	-.0004	-.0078	-.0146	.1268	.0002	.0000	.0067	.9668	.0123
#3	.0004	-.0041	-.0147	.1266	.0003	.0000	.0076	1.062	.0134
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0142**	**5.817**	**.0246**	**.0098**	**6.689**	**.0011**	**.2260**	**.0112**	**.0022**
Stddev	.0014	.195	.0016	.0014	.144	.0006	.0054	.0001	.0005
%RSD	9.551	3.344	6.339	13.83	2.161	56.88	2.392	1.229	20.79
#1	.0129	5.614	.0239	.0084	6.527	.0018	.2212	.0110	.0018
#2	.0142	5.835	.0235	.0098	6.734	.0007	.2319	.0113	.0021
#3	.0156	6.002	.0264	.0111	6.806	.0007	.2250	.0112	.0027
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.028**	**.0068**	**45.13**	**.0020**	**1.421**	**.0634**	**.0020**	**.8495**	**<.0000**
Stddev	.048	.0006	3.91	.0016	.122	.0076	.0008	.0214	.0008
%RSD	1.568	9.266	8.670	83.99	8.583	12.02	37.72	2.523	252.5
#1	2.974	.0062	41.24	.0001	1.297	.0553	.0026	.8248	.0004
#2	3.045	.0066	45.07	.0028	1.427	.0647	.0022	.8613	-.0002
#3	3.065	.0075	49.07	.0030	1.541	.0703	.0012	.8625	-.0011
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-2-A Acquired: 12/5/2014 18:36:23 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0176	.0019	.0010	<.0000	.0039	.0957
Stddev	.0001	.0015	.0002	.0006	.0025	.0037	.0085
%RSD	60.79	8.556	9.661	60.07	40.22	93.72	8.888
#1	.0002	.0167	.0018	.0008	-.0088	-.0002	.0874
#2	.0001	.0168	.0021	.0016	-.0037	.0050	.0952
#3	.0001	.0194	.0018	.0005	-.0064	.0069	.1044
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4345.8
Stddev	64.7
%RSD	1.4880
#1	4418.4
#2	4324.6
#3	4294.4

Sample Name: CCV Acquired: 12/5/2014 18:40:12 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.9928**	**47.73**	**5.090**	**4.845**	**4.786**	**4.906**	**5.041**	**52.84**	**5.091**
Stddev	.0040	.19	.018	.030	.060	.008	.015	.27	.020
%RSD	.4007	.3917	.3493	.6302	1.253	.1602	.2974	.5055	.3886
#1	.9928	47.80	5.101	4.847	4.835	4.901	5.049	52.99	5.103
#2	.9888	47.51	5.099	4.814	4.719	4.915	5.050	52.99	5.101
#3	.9967	47.86	5.069	4.875	4.803	4.902	5.023	52.53	5.068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.195**	**5.137**	**5.058**	**48.99**	**49.14**	**4.829**	**49.75**	**4.928**	**1.021**
Stddev	.022	.015	.017	.14	.16	.026	.09	.013	.002
%RSD	.4276	.2910	.3352	.2871	.3212	.5324	.1825	.2569	.1834
#1	5.207	5.129	5.069	48.97	49.22	4.840	49.70	4.925	1.022
#2	5.209	5.128	5.066	48.86	48.96	4.799	49.69	4.917	1.022
#3	5.169	5.154	5.038	49.14	49.24	4.847	49.85	4.942	1.019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**48.79**	**5.216**	**52.69**	**5.222**	**50.02**	**1.004**	**1.009**	**4.820**	**5.221**
Stddev	.20	.022	.22	.022	.17	.004	.002	.013	.027
%RSD	.4176	.4292	.4183	.4215	.3490	.4071	.2043	.2641	.5142
#1	48.81	5.228	52.80	5.236	50.14	1.007	1.012	4.806	5.235
#2	48.58	5.229	52.84	5.233	50.11	1.007	1.009	4.823	5.238
#3	48.99	5.190	52.44	5.196	49.82	.9996	1.007	4.830	5.190
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: CCV Acquired: 12/5/2014 18:40:12 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.887**	**5.053**	**4.857**	**1.053**	**5.033**	**4.917**	**5.136**
Stddev	.022	.031	.015	.004	.029	.014	.020
%RSD	.4536	.6074	.3108	.4252	.5825	.2811	.3826
#1	4.866	5.022	4.857	1.055	5.015	4.918	5.143
#2	4.910	5.053	4.842	1.055	5.017	4.902	5.151
#3	4.886	5.083	4.872	1.048	5.067	4.929	5.114
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**4162.3**
Stddev	10.2
%RSD	.24408
#1	4172.8
#2	4152.5
#3	4161.8

Sample Name: CCB Acquired: 12/5/2014 18:44:00 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	.0001	.0128	.0006	.0004	.0002	.0015	.0002
Stddev	.0007	.0100	.0004	.0013	.0000	.0001	.0019	.0003	.0001
%RSD	200.4	293.0	292.9	9.937	4.043	19.20	909.0	17.75	66.05
#1	.0001	.0071	.0005	.0128	.0006	.0005	.0022	.0018	.0002
#2	.0000	-.0046	.0001	.0140	.0006	.0004	-.0016	.0016	.0003
#3	-.0011	-.0127	-.0002	.0115	.0006	.0004	.0001	.0012	.0000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0013	.0023	.0040	.0376	<.0000	.0063	.0003	.0001
Stddev	.0003	.0011	.0002	.0012	.0194	.0016	.0098	.0001	.0001
%RSD	681.3	84.89	7.900	28.74	51.55	246.9	155.8	35.39	123.1
#1	.0001	.0007	.0022	.0050	.0307	-.0006	.0132	.0005	.0001
#2	.0001	.0025	.0024	.0043	.0595	-.0023	.0105	.0003	.0000
#3	-.0004	.0006	.0021	.0028	.0226	.0009	-.0049	.0002	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0002	.0029	.0004	.0056	<.0000	.0028	.0039	.0005
Stddev	.0102	.0003	.0012	.0008	.0031	.0010	.0014	.0068	.0006
%RSD	1805.	144.3	41.43	187.8	54.77	94.01	51.66	175.9	112.2
#1	-.0012	.0005	.0039	-.0003	.0080	-.0014	.0016	-.0031	.0011
#2	-.0104	.0001	.0033	.0003	.0066	-.0019	.0024	.0042	-.0001
#3	.0099	.0000	.0016	.0012	.0022	.0001	.0044	.0105	.0005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Sample Name: CCB Acquired: 12/5/2014 18:44:00 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	.0021	.0003	<.0000	<.0000	.0018	.0002
Stddev	.0001	.0010	.0005	.0016	.0038	.0043	.0001
%RSD	21.05	46.18	152.0	475.9	92.15	242.6	24.76
#1	.0006	.0032	.0004	.0013	-.0083	.0051	.0003
#2	.0004	.0013	.0008	-.0019	-.0011	-.0031	.0002
#3	.0004	.0018	-.0002	-.0004	-.0029	.0032	.0002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_3710
Units	Cts/S
Avg	4124.0
Stddev	17.3
%RSD	.42030
#1	4139.1
#2	4105.0
#3	4127.8

Sample Name: 160-9422-B-3-A Acquired: 12/5/2014 18:47:57 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0029	<.0000	.2761	.0011	.0001	.0023	62.21	.0089
Stddev	.0004	.0065	.0004	.0032	.0002	.0000	.0017	.89	.0001
%RSD	86.61	225.0	10.11	1.164	15.52	33.10	71.89	1.432	1.047
#1	-.0004	.0042	-.0043	.2727	.0012	.0001	.0038	61.44	.0088
#2	-.0001	.0087	-.0043	.2765	.0009	.0001	.0027	62.01	.0090
#3	-.0009	-.0042	-.0036	.2791	.0013	.0000	.0005	63.19	.0089
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0048	2.349	.0062	.0504	9.026	.1043	54.72	.0135	.0029
Stddev	.0002	.004	.0018	.0006	.021	.0010	.34	.0003	.0003
%RSD	3.385	.1894	28.97	1.243	.2311	.9364	.6213	2.048	8.985
#1	.0050	2.344	.0041	.0497	9.040	.1054	54.38	.0135	.0027
#2	.0046	2.352	.0071	.0508	9.002	.1039	54.70	.0138	.0027
#3	.0049	2.351	.0074	.0507	9.035	.1037	55.06	.0132	.0032
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	146.1	.0152	6.789	.0062	129.4	.0195	.0012	8.791	<.0000
Stddev	1.3	.0001	.087	.0004	1.9	.0012	.0015	.011	.0005
%RSD	.9045	.3631	1.285	6.706	1.465	5.931	124.1	.1281	74.20
#1	145.4	.0152	6.713	.0066	127.7	.0182	-.0005	8.778	-.0007
#2	147.7	.0152	6.770	.0063	129.2	.0197	.0016	8.799	-.0002
#3	145.4	.0153	6.884	.0058	131.5	.0205	.0025	8.797	-.0012
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-3-A Acquired: 12/5/2014 18:47:57 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2140	.0109	.0017	.0003	.0072	.0004	.0326
Stddev	.0003	.0028	.0001	.0003	.0045	.0031	.0005
%RSD	.1592	25.72	8.518	96.91	61.87	753.8	1.633
#1	.2141	.0139	.0017	.0001	.0047	.0003	.0322
#2	.2144	.0104	.0019	.0002	.0124	-.0026	.0324
#3	.2137	.0083	.0016	.0006	.0046	.0036	.0332
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3949.1
Stddev	38.5
%RSD	.97466
#1	3989.9
#2	3944.1
#3	3913.4

Sample Name: 160-9422-B-3-A SD Acquired: 12/5/2014 18:51:52 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=5

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	<.0000	.0543	.0001	.0000	.0028	13.18	.0018
Stddev	.0003	.0186	.0003	.0029	.0001	.0000	.0020	.10	.0001
%RSD	61.48	1216.	33.23	5.309	81.55	11.39	73.66	.7717	4.482
#1	-.0007	-.0059	-.0006	.0574	.0002	.0000	.0046	13.28	.0017
#2	-.0001	.0189	-.0011	.0540	.0001	.0000	.0031	13.18	.0019
#3	-.0006	-.0176	-.0013	.0516	.0000	.0001	.0006	13.08	.0018
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0009	.4792	.0027	.0102	1.764	.0212	10.85	.0025	.0005
Stddev	.0001	.0050	.0002	.0004	.030	.0005	.20	.0005	.0003
%RSD	10.10	1.042	8.147	3.906	1.702	2.546	1.815	18.47	61.87
#1	.0010	.4848	.0025	.0103	1.795	.0211	11.08	.0021	.0008
#2	.0008	.4778	.0029	.0097	1.763	.0206	10.74	.0030	.0002
#3	.0008	.4751	.0027	.0105	1.735	.0217	10.73	.0024	.0006
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	28.49	.0034	1.376	.0020	25.99	.0041	.0004	1.689	.0001
Stddev	.59	.0002	.016	.0012	.33	.0011	.0005	.034	.0001
%RSD	2.072	4.983	1.151	57.82	1.282	27.14	107.6	1.987	179.7
#1	29.15	.0034	1.390	.0021	26.29	.0049	.0009	1.724	-.0001
#2	28.31	.0036	1.379	.0008	26.05	.0028	.0005	1.686	.0002
#3	28.01	.0032	1.359	.0032	25.63	.0047	.0000	1.657	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-3-A SD Acquired: 12/5/2014 18:51:52 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=5

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0414	.0031	.0004	.0007	<.0000	.0027	.0159
Stddev	.0010	.0037	.0003	.0010	.0058	.0007	.0001
%RSD	2.411	117.2	74.36	146.0	40.08	24.27	.7433
#1	.0425	.0064	.0001	.0007	-.0200	.0029	.0158
#2	.0411	.0038	.0005	-.0003	-.0085	.0020	.0160
#3	.0405	-.0008	.0006	.0017	-.0147	.0032	.0158
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4094.1
Stddev	42.2
%RSD	1.0302
#1	4048.9
#2	4101.0
#3	4132.5

Sample Name: 160-9422-B-3-B MS Acquired: 12/5/2014 18:55:40 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2188	10.68	1.121	2.385	1.061	1.095	1.084	74.79	1.110
Stddev	.0003	.10	.013	.009	.006	.004	.009	.64	.011
%RSD	.1441	.9396	1.186	.3686	.5691	.4134	.8094	.8616	.9475
#1	.2192	10.57	1.136	2.378	1.054	1.091	1.094	75.54	1.123
#2	.2185	10.70	1.115	2.395	1.066	1.100	1.077	74.44	1.103
#3	.2188	10.77	1.111	2.382	1.063	1.095	1.081	74.40	1.106
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.202	3.393	1.141	11.08	19.65	1.172	66.55	1.111	.5758
Stddev	.010	.014	.012	.04	.09	.009	.24	.007	.0055
%RSD	.8586	.4011	1.028	.3473	.4431	.7591	.3576	.6081	.9575
#1	1.214	3.409	1.154	11.03	19.55	1.161	66.36	1.104	.5820
#2	1.195	3.389	1.133	11.10	19.71	1.176	66.48	1.112	.5716
#3	1.196	3.383	1.135	11.09	19.68	1.178	66.82	1.118	.5738
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	157.4	1.178	7.807	1.158	138.8	.5779	.5597	8.699	1.157
Stddev	3.5	.010	.090	.011	1.6	.0053	.0063	.020	.010
%RSD	2.235	.8795	1.148	.9161	1.126	.9125	1.128	.2351	.8500
#1	160.5	1.190	7.910	1.170	140.6	.5839	.5667	8.679	1.169
#2	153.6	1.172	7.763	1.150	137.7	.5753	.5578	8.697	1.152
#3	158.2	1.171	7.748	1.154	138.2	.5744	.5545	8.720	1.152
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-3-B MS Acquired: 12/5/2014 18:55:40 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.301	1.143	1.083	.2292	1.149	1.091	1.168
Stddev	.007	.012	.006	.0033	.012	.008	.012
%RSD	.5418	1.056	.5835	1.432	1.043	.7202	1.039
#1	1.293	1.155	1.075	.2326	1.150	1.084	1.182
#2	1.307	1.145	1.087	.2261	1.160	1.089	1.160
#3	1.303	1.131	1.086	.2289	1.136	1.099	1.162
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3917.1
Stddev	15.1
%RSD	.38453
#1	3900.2
#2	3922.0
#3	3929.2

Sample Name: 160-9422-B-3-C MSD Acquired: 12/5/2014 18:59:14 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2070**	**9.946**	**1.072**	**2.248**	**.9964**	**1.029**	**1.044**	**71.18**	**1.064**
Stddev	.0034	.030	.006	.008	.0027	.002	.010	.34	.006
%RSD	1.629	.2972	.5427	.3400	.2703	.1556	.9294	.4794	.5774
#1	.2044	9.979	1.074	2.249	.9995	1.028	1.042	70.96	1.063
#2	.2058	9.923	1.065	2.239	.9948	1.028	1.036	71.00	1.059
#3	.2108	9.937	1.076	2.255	.9948	1.031	1.055	71.57	1.071
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.144**	**3.204**	**1.092**	**10.39**	**18.55**	**1.098**	**62.46**	**1.039**	**.5512**
Stddev	.007	.051	.006	.04	.01	.005	.41	.003	.0036
%RSD	.5904	1.592	.5453	.4113	.0793	.4727	.6489	.3297	.6618
#1	1.141	3.172	1.093	10.36	18.56	1.104	62.26	1.041	.5500
#2	1.139	3.177	1.086	10.37	18.53	1.096	62.20	1.035	.5483
#3	1.151	3.263	1.098	10.44	18.55	1.093	62.93	1.042	.5553
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**145.6**	**1.123**	**7.467**	**1.110**	**134.1**	**.5540**	**.5364**	**8.185**	**1.106**
Stddev	.3	.006	.034	.008	.8	.0036	.0030	.021	.008
%RSD	.2020	.5119	.4541	.7327	.6323	.6536	.5550	.2585	.6834
#1	145.8	1.120	7.458	1.106	133.9	.5499	.5361	8.199	1.102
#2	145.7	1.119	7.438	1.105	133.3	.5567	.5336	8.160	1.101
#3	145.3	1.129	7.505	1.119	135.0	.5555	.5395	8.194	1.115
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-3-C MSD Acquired: 12/5/2014 18:59:14 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.222	1.070	1.015	.2201	1.083	1.025	1.114
Stddev	.003	.024	.001	.0009	.023	.003	.006
%RSD	.2018	2.252	.1098	.4094	2.159	.2537	.5769
#1	1.225	1.055	1.016	.2209	1.064	1.027	1.112
#2	1.221	1.057	1.014	.2191	1.076	1.022	1.109
#3	1.221	1.098	1.016	.2201	1.109	1.027	1.121
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4016.9
Stddev	31.4
%RSD	.78057
#1	4041.0
#2	4028.3
#3	3981.5

Sample Name: 160-9422-B-3-A PDS Acquired: 12/5/2014 19:02:48 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0966**	**1.913**	**.0947**	**.7492**	**.4717**	**.0499**	**1.744**	**70.57**	**.0586**
Stddev	.0007	.013	.0020	.0055	.0007	.0002	.004	.18	.0002
%RSD	.7311	.6714	2.104	.7329	.1461	.3268	.2401	.2572	.2704
#1	.0972	1.919	.0939	.7459	.4717	.0499	1.746	70.37	.0584
#2	.0958	1.922	.0933	.7556	.4725	.0501	1.746	70.61	.0587
#3	.0966	1.898	.0970	.7462	.4711	.0497	1.739	70.73	.0586
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.5371**	**2.311**	**.2613**	**1.047**	**57.00**	**.5739**	**62.69**	**.1586**	**.4301**
Stddev	.0010	.002	.0013	.004	.09	.0010	.10	.0004	.0012
%RSD	.1778	.1029	.5007	.3417	.1529	.1821	.1642	.2821	.2872
#1	.5364	2.310	.2601	1.045	56.98	.5732	62.63	.1583	.4293
#2	.5368	2.310	.2610	1.052	57.10	.5751	62.81	.1591	.4295
#3	.5382	2.314	.2627	1.046	56.93	.5733	62.64	.1586	.4315
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**146.8**	**.4384**	**8.959**	**.1090**	**175.3**	**.1109**	**.1501**	**12.41**	**1.064**
Stddev	2.0	.0009	.007	.0012	.3	.0011	.0033	.05	.002
%RSD	1.392	.1942	.0839	1.147	.1841	.9876	2.171	.4220	.2070
#1	146.7	.4375	8.954	.1103	174.9	.1103	.1500	12.37	1.062
#2	149.0	.4386	8.968	.1078	175.4	.1102	.1469	12.47	1.063
#3	144.9	.4391	8.955	.1088	175.6	.1122	.1534	12.38	1.066
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-3-A PDS Acquired: 12/5/2014 19:02:48 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2487	1.248	.1985	.2034	4.982	.4802	.2506
Stddev	.0009	.002	.0016	.0017	.011	.0035	.0002
%RSD	.3437	.1689	.7923	.8603	.2159	.7339	.0739
#1	.2487	1.249	.1969	.2015	4.984	.4763	.2505
#2	.2496	1.249	.2000	.2037	4.970	.4832	.2509
#3	.2479	1.245	.1985	.2049	4.991	.4812	.2506
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3966.3
Stddev	5.6
%RSD	.14024
#1	3971.2
#2	3967.4
#3	3960.2

Sample Name: 160-9422-B-4-A Acquired: 12/5/2014 19:06:29 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0096	<.0000	.2445	.0008	.0000	.0033	56.35	.0084
Stddev	.0006	.0054	.0004	.0038	.0001	.0000	.0017	.36	.0001
%RSD	1558.	56.41	9.745	1.561	9.451	165.1	52.42	.6323	.8707
#1	-.0005	.0142	-.0044	.2489	.0008	.0001	.0050	56.74	.0085
#2	-.0003	.0036	-.0037	.2428	.0009	.0000	.0016	56.03	.0084
#3	.0006	.0112	-.0038	.2418	.0007	.0000	.0033	56.29	.0083
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0045	2.068	.0057	.0040	8.125	.0929	48.40	.0149	.0027
Stddev	.0000	.016	.0011	.0010	.083	.0010	.46	.0003	.0002
%RSD	.7677	.7602	18.76	26.25	1.020	1.105	.9526	1.909	8.633
#1	.0045	2.080	.0065	.0051	8.221	.0938	48.92	.0150	.0028
#2	.0044	2.050	.0045	.0037	8.079	.0918	48.19	.0146	.0025
#3	.0045	2.072	.0062	.0031	8.076	.0930	48.08	.0151	.0029
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	130.1	.0134	6.098	.0026	119.2	.0183	<.0000	7.746	<.0000
Stddev	1.3	.0000	.036	.0007	.8	.0008	.0011	.054	.0001
%RSD	1.006	.3133	.5959	25.96	.6343	4.114	192.7	.7020	14.12
#1	131.5	.0135	6.139	.0019	120.0	.0174	.0007	7.809	-.0006
#2	129.9	.0134	6.068	.0033	118.7	.0189	-.0015	7.714	-.0004
#3	128.8	.0134	6.087	.0027	118.8	.0184	-.0009	7.716	-.0005
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-4-A Acquired: 12/5/2014 19:06:29 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1899	.0115	.0020	<.0000	.0047	.0038	.0209
Stddev	.0016	.0010	.0002	.0001	.0073	.0007	.0002
%RSD	.8240	8.809	11.48	20.58	154.3	19.47	.8027
#1	.1916	.0122	.0022	-.0005	.0015	.0043	.0211
#2	.1886	.0119	.0019	-.0007	-.0004	.0030	.0209
#3	.1896	.0103	.0018	-.0008	.0130	.0042	.0208
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4282.2
Stddev	40.1
%RSD	.93747
#1	4235.9
#2	4305.1
#3	4305.7

Sample Name: 160-9422-B-4-B MS Acquired: 12/5/2014 19:10:26 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2088	10.28	1.082	2.307	1.026	1.056	1.053	72.67	1.073
Stddev	.0004	.05	.011	.015	.007	.007	.013	.72	.013
%RSD	.1898	.4880	1.033	.6334	.6731	.6693	1.192	.9953	1.251
#1	.2083	10.27	1.070	2.301	1.025	1.054	1.039	71.84	1.057
#2	.2090	10.33	1.090	2.324	1.032	1.064	1.060	73.12	1.080
#3	.2090	10.23	1.087	2.296	1.019	1.050	1.061	73.07	1.081
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.155	3.286	1.102	10.66	19.28	1.136	64.89	1.068	.5508
Stddev	.013	.012	.014	.05	.14	.008	.19	.003	.0055
%RSD	1.108	.3528	1.271	.4910	.7243	.7134	.2959	.3184	.9943
#1	1.140	3.291	1.085	10.67	19.27	1.140	64.91	1.070	.5445
#2	1.161	3.294	1.109	10.71	19.43	1.142	65.07	1.069	.5543
#3	1.162	3.272	1.110	10.60	19.15	1.127	64.69	1.064	.5536
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	153.7	1.131	7.710	1.114	137.0	.5568	.5460	8.542	1.110
Stddev	.3	.012	.094	.009	1.8	.0101	.0066	.041	.010
%RSD	.1712	1.021	1.222	.8169	1.282	1.819	1.210	.4753	.9261
#1	153.7	1.118	7.601	1.104	135.0	.5452	.5386	8.544	1.098
#2	153.9	1.137	7.761	1.118	137.9	.5619	.5481	8.581	1.116
#3	153.4	1.139	7.768	1.121	138.1	.5634	.5513	8.500	1.116
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-4-B MS Acquired: 12/5/2014 19:10:26 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.259	1.085	1.038	.2223	1.101	1.051	1.130
Stddev	.009	.008	.008	.0019	.017	.006	.012
%RSD	.7093	.7343	.7389	.8547	1.533	.5874	1.093
#1	1.257	1.094	1.038	.2201	1.119	1.057	1.116
#2	1.268	1.082	1.046	.2234	1.099	1.051	1.138
#3	1.251	1.080	1.031	.2234	1.086	1.045	1.137
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4122.5
Stddev	14.0
%RSD	.33912
#1	4134.9
#2	4107.3
#3	4125.3

Sample Name: 160-9422-B-4-C MSD Acquired: 12/5/2014 19:14:00 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2180	10.70	1.129	2.419	1.073	1.096	1.062	72.89	1.118
Stddev	.0056	.09	.037	.017	.008	.012	.038	2.21	.037
%RSD	2.558	.8249	3.314	.7152	.7851	1.111	3.582	3.036	3.290
#1	.2210	10.78	1.157	2.431	1.082	1.107	1.091	74.36	1.146
#2	.2214	10.71	1.143	2.427	1.072	1.099	1.076	73.97	1.132
#3	.2115	10.60	1.087	2.399	1.065	1.083	1.019	70.35	1.077
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.199	3.393	1.145	11.01	19.75	1.191	64.40	1.104	.5562
Stddev	.037	.074	.039	.14	.17	.008	.82	.012	.0178
%RSD	3.091	2.179	3.384	1.226	.8668	.6566	1.269	1.056	3.208
#1	1.227	3.422	1.174	11.13	19.92	1.199	64.93	1.113	.5694
#2	1.212	3.449	1.159	11.05	19.76	1.190	64.81	1.108	.5632
#3	1.157	3.309	1.101	10.86	19.58	1.184	63.46	1.091	.5359
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	154.2	1.174	7.743	1.159	137.4	.5615	.5660	8.537	1.114
Stddev	.7	.037	.262	.037	4.8	.0214	.0224	.098	.035
%RSD	.4413	3.159	3.387	3.183	3.476	3.809	3.962	1.142	3.179
#1	154.8	1.201	7.948	1.188	141.3	.5779	.5843	8.627	1.140
#2	154.5	1.189	7.835	1.172	138.9	.5693	.5727	8.550	1.128
#3	153.5	1.131	7.447	1.118	132.1	.5373	.5410	8.433	1.074
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-4-C MSD Acquired: 12/5/2014 19:14:00 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.308	1.157	1.046	.2307	1.190	1.089	1.175
Stddev	.012	.029	.010	.0064	.027	.010	.038
%RSD	.8784	2.479	.9545	2.794	2.260	.8826	3.223
#1	1.319	1.169	1.055	.2345	1.184	1.094	1.203
#2	1.308	1.177	1.047	.2345	1.219	1.095	1.190
#3	1.296	1.124	1.035	.2233	1.167	1.077	1.132
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4127.9
Stddev	99.3
%RSD	2.4059
#1	4076.5
#2	4064.8
#3	4242.4

Sample Name: 160-9422-B-5-A Acquired: 12/5/2014 19:17:35 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0038	<.0000	.2699	.0010	.0001	.0023	60.38	.0023
Stddev	.0007	.0048	.0008	.0127	.0002	.0001	.0029	.78	.0002
%RSD	282.8	124.9	23.18	4.705	24.11	106.8	126.0	1.285	8.970
#1	.0000	-.0010	-.0040	.2609	.0012	.0001	.0038	59.65	.0020
#2	.0003	.0086	-.0041	.2643	.0010	.0000	-.0011	60.29	.0023
#3	-.0011	.0039	-.0026	.2844	.0008	.0000	.0042	61.19	.0024
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0045	2.212	.0064	.0382	8.665	.0999	53.00	.0151	.0029
Stddev	.0001	.028	.0006	.0016	.253	.0040	1.17	.0005	.0001
%RSD	1.740	1.285	9.076	4.276	2.924	4.030	2.218	3.138	5.020
#1	.0045	2.181	.0069	.0365	8.393	.0965	51.72	.0147	.0029
#2	.0046	2.220	.0058	.0383	8.709	.0989	53.25	.0150	.0027
#3	.0046	2.236	.0066	.0398	8.894	.1043	54.03	.0156	.0030
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	141.5	.0146	6.460	.0055	124.1	.0200	.0005	8.389	<.0000
Stddev	3.9	.0002	.088	.0012	1.9	.0005	.0004	.199	.0001
%RSD	2.762	1.136	1.356	22.36	1.534	2.397	78.53	2.368	13.07
#1	137.2	.0145	6.377	.0053	122.2	.0204	.0010	8.173	-.0007
#2	142.5	.0145	6.451	.0044	124.0	.0201	.0003	8.428	-.0007
#3	144.8	.0148	6.552	.0069	126.0	.0195	.0003	8.564	-.0006
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-5-A Acquired: 12/5/2014 19:17:35 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2035	.0073	.0025	<.0000	<.0000	.0035	.0261
Stddev	.0054	.0020	.0003	.0009	.0149	.0017	.0004
%RSD	2.638	27.43	13.96	49.33	933.9	49.08	1.449
#1	.1980	.0083	.0025	-.0008	.0091	.0017	.0257
#2	.2038	.0050	.0028	-.0025	.0048	.0051	.0261
#3	.2087	.0085	.0021	-.0024	-.0186	.0037	.0264
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4097.8
Stddev	53.9
%RSD	1.3164
#1	4158.3
#2	4080.2
#3	4054.8

Sample Name: 160-9422-B-6-A Acquired: 12/5/2014 19:21:30 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0039	<.0000	.2598	.0010	.0000	.0033	61.00	.0021
Stddev	.0004	.0060	.0011	.0053	.0002	.0000	.0020	.64	.0000
%RSD	4487.	153.4	23.07	2.027	15.97	115.3	62.56	1.057	1.765
#1	-.0004	.0086	-.0037	.2580	.0008	.0001	.0054	60.27	.0021
#2	.0003	.0061	-.0059	.2556	.0010	.0000	.0030	61.48	.0021
#3	.0001	-.0029	-.0047	.2657	.0012	.0000	.0013	61.26	.0021
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0058	2.273	.0052	.0080	8.489	.0957	52.01	.0114	.0029
Stddev	.0002	.014	.0003	.0010	.038	.0010	.06	.0004	.0001
%RSD	3.527	.6346	5.658	12.55	.4513	1.067	.1139	3.149	3.514
#1	.0055	2.257	.0050	.0087	8.459	.0947	52.03	.0111	.0030
#2	.0058	2.275	.0055	.0086	8.475	.0967	51.94	.0113	.0029
#3	.0059	2.286	.0050	.0069	8.532	.0956	52.06	.0118	.0028
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	135.2	.0147	6.655	.0033	125.8	.0200	.0015	8.180	<.0000
Stddev	2.1	.0000	.049	.0006	1.0	.0011	.0007	.033	.0002
%RSD	1.527	.2378	.7419	17.61	.7564	5.316	46.11	.4017	67.96
#1	134.8	.0147	6.602	.0027	124.8	.0213	.0011	8.175	-.0002
#2	137.5	.0146	6.700	.0038	126.7	.0196	.0010	8.151	-.0005
#3	133.4	.0147	6.663	.0034	125.9	.0193	.0023	8.216	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-6-A Acquired: 12/5/2014 19:21:30 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1979	.0098	.0025	.0005	<.0000	.0015	.0331
Stddev	.0012	.0039	.0010	.0002	.0108	.0026	.0002
%RSD	.6156	39.56	39.98	34.83	1341.	173.1	.4948
#1	.1975	.0120	.0029	.0006	-.0092	.0001	.0329
#2	.1970	.0119	.0031	.0003	-.0045	.0044	.0332
#3	.1993	.0053	.0013	.0007	.0113	-.0001	.0332
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4015.0
Stddev	14.7
%RSD	.36617
#1	4028.5
#2	3999.3
#3	4017.1

Sample Name: CCV Acquired: 12/5/2014 19:25:25 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.006**	**46.61**	**5.151**	**4.714**	**4.681**	**4.811**	**5.086**	**53.88**	**5.134**
Stddev	.007	.80	.122	.063	.134	.086	.137	.96	.116
%RSD	.6757	1.720	2.375	1.337	2.854	1.797	2.691	1.789	2.254
#1	1.000	47.53	5.293	4.775	4.825	4.902	5.244	54.99	5.268
#2	1.006	46.05	5.085	4.649	4.561	4.730	5.014	53.23	5.069
#3	1.014	46.24	5.077	4.719	4.656	4.801	5.001	53.41	5.066
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.261**	**5.232**	**5.089**	**48.30**	**48.20**	**4.693**	**49.65**	**4.844**	**1.030**
Stddev	.114	.015	.118	.77	.74	.075	.67	.080	.025
%RSD	2.166	.2895	2.326	1.595	1.531	1.608	1.358	1.644	2.432
#1	5.392	5.231	5.226	49.16	49.03	4.779	50.39	4.935	1.059
#2	5.191	5.217	5.018	47.68	47.61	4.635	49.06	4.788	1.017
#3	5.199	5.247	5.024	48.05	47.95	4.666	49.51	4.809	1.014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**47.72**	**5.283**	**53.43**	**5.287**	**50.66**	**1.018**	**1.021**	**4.736**	**5.288**
Stddev	.68	.117	1.17	.121	1.32	.023	.025	.064	.119
%RSD	1.425	2.206	2.191	2.290	2.609	2.268	2.406	1.346	2.249
#1	48.46	5.417	54.79	5.426	52.18	1.044	1.049	4.805	5.425
#2	47.13	5.215	52.75	5.220	50.01	1.005	1.007	4.680	5.221
#3	47.56	5.216	52.77	5.213	49.79	1.004	1.007	4.722	5.217
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: CCV Acquired: 12/5/2014 19:25:25 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.774**	**5.144**	**4.754**	**1.066**	**5.094**	**4.815**	**5.186**
Stddev	.075	.030	.073	.023	.018	.070	.121
%RSD	1.574	.5765	1.539	2.159	.3494	1.461	2.339
#1	4.859	5.139	4.834	1.093	5.081	4.895	5.326
#2	4.747	5.118	4.692	1.051	5.088	4.764	5.118
#3	4.716	5.176	4.735	1.055	5.115	4.787	5.114
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**4164.6**
Stddev	55.6
%RSD	1.3347
#1	4101.4
#2	4206.0
#3	4186.5

Sample Name: CCB Acquired: 12/5/2014 19:29:14 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	<.0000	.0144	.0006	.0005	<.0000	.0022	.0001
Stddev	.0005	.0151	.0008	.0048	.0003	.0001	.0023	.0008	.0000
%RSD	107.8	1397.	400.5	33.13	46.42	24.64	6678.	34.46	17.74
#1	.0001	-.0046	.0001	.0172	.0009	.0006	.0019	.0031	.0001
#2	-.0006	.0155	-.0011	.0089	.0007	.0005	-.0026	.0017	.0001
#3	-.0009	-.0141	.0004	.0170	.0003	.0004	.0006	.0019	.0002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0005	.0020	.0049	.0828	<.0000	<.0000	.0005	<.0000
Stddev	.0002	.0003	.0017	.0020	.0137	.0007	.0058	.0005	.0002
%RSD	655.3	61.02	87.31	41.65	16.53	61.24	845.6	93.59	30500.
#1	.0002	.0005	.0027	.0071	.0680	-.0016	-.0059	.0010	-.0002
#2	.0000	.0002	.0032	.0044	.0853	-.0014	.0055	.0003	.0001
#3	-.0002	.0008	.0000	.0031	.0950	-.0003	-.0016	.0001	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0042	.0003	.0020	.0005	.0143	<.0000	.0005	.0051	.0005
Stddev	.0099	.0003	.0012	.0005	.0014	.0008	.0001	.0034	.0004
%RSD	232.8	76.18	62.51	108.2	10.10	545.0	29.86	65.92	75.14
#1	.0110	.0006	.0031	-.0001	.0156	.0001	.0003	.0090	.0009
#2	-.0071	.0001	.0021	.0005	.0147	.0005	.0005	.0026	.0005
#3	.0089	.0004	.0007	.0010	.0127	-.0010	.0006	.0038	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Sample Name: CCB Acquired: 12/5/2014 19:29:14 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005	<.0000	<.0000	<.0000	<.0000	.0004	.0002
Stddev	.0001	.0043	.0001	.0002	.0169	.0028	.0001
%RSD	31.25	472.5	1060.	359.0	412.6	740.5	59.58
#1	.0006	.0013	.0000	.0000	-.0181	.0032	.0002
#2	.0004	-.0059	.0001	-.0002	.0147	.0004	.0003
#3	.0003	.0019	-.0001	.0001	-.0089	-.0024	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_3710
Units	Cts/S
Avg	4053.5
Stddev	85.4
%RSD	2.1076
#1	4038.7
#2	3976.4
#3	4145.4

Sample Name: 160-9422-B-7-A Acquired: 12/5/2014 19:33:11 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0072	.0000	.2016	.0016	.0000	<.0000	47.17	.0780
Stddev	.0003	.0060	.0008	.0115	.0001	.0000	.0018	1.74	.0028
%RSD	110.1	83.55	2534.	5.717	8.964	53.56	147.5	3.693	3.644
#1	-.0004	.0074	-.0009	.2071	.0017	.0001	.0005	49.02	.0811
#2	.0001	.0132	.0005	.1884	.0014	.0000	-.0030	45.56	.0755
#3	-.0005	.0011	.0006	.2094	.0016	.0000	-.0012	46.94	.0775
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0076	.5604	.0031	.0350	4.380	.0197	13.77	.1036	.0023
Stddev	.0002	.0196	.0009	.0021	.172	.0002	.55	.0047	.0001
%RSD	2.063	3.492	28.18	5.951	3.920	1.088	3.992	4.518	5.553
#1	.0078	.5803	.0036	.0363	4.503	.0197	14.26	.1071	.0024
#2	.0075	.5412	.0021	.0326	4.184	.0194	13.18	.0983	.0022
#3	.0076	.5596	.0037	.0360	4.453	.0198	13.88	.1055	.0023
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	14.41	.0160	4.379	.0049	15.54	.0064	.0002	9.642	.0001
Stddev	.54	.0007	.166	.0007	.62	.0009	.0020	.371	.0005
%RSD	3.728	4.616	3.792	15.10	4.001	14.51	952.3	3.852	470.2
#1	14.77	.0167	4.562	.0053	16.22	.0067	.0012	9.906	.0004
#2	13.79	.0152	4.238	.0053	15.00	.0054	-.0020	9.217	.0004
#3	14.68	.0160	4.336	.0040	15.39	.0072	.0015	9.802	-.0005
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-7-A Acquired: 12/5/2014 19:33:11 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0585	.0018	.0015	<.0000	.0008	.0001	.4939
Stddev	.0021	.0024	.0006	.0005	.0259	.0021	.0191
%RSD	3.571	132.7	40.04	21.46	3132.	2562.	3.860
#1	.0597	.0020	.0015	-.0017	-.0234	-.0022	.5148
#2	.0561	.0040	.0009	-.0027	-.0023	.0019	.4774
#3	.0596	-.0007	.0021	-.0025	.0281	.0006	.4896
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4054.4
Stddev	153.9
%RSD	3.7968
#1	3899.6
#2	4207.5
#3	4056.0

Sample Name: 160-9422-B-8-A Acquired: 12/5/2014 19:36:56 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**.0028**	**<.0000**	**.1963**	**.0012**	**.0001**	**.0012**	**46.61**	**.0763**
Stddev	.0003	.0220	.0007	.0030	.0001	.0000	.0028	.31	.0005
%RSD	569.7	791.5	90.24	1.534	4.589	91.48	235.9	.6573	.6374
#1	.0000	-.0139	.0000	.1950	.0013	.0000	.0044	46.71	.0765
#2	-.0003	-.0054	-.0009	.1941	.0012	.0000	-.0004	46.26	.0758
#3	.0004	.0277	-.0014	.1997	.0012	.0001	-.0005	46.85	.0767
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0091**	**.6280**	**.0017**	**.0069**	**4.114**	**.0192**	**13.62**	**.1122**	**.0024**
Stddev	.0003	.0049	.0014	.0018	.027	.0003	.13	.0011	.0002
%RSD	2.994	.7745	83.39	25.47	.6463	1.802	.9442	.9491	6.352
#1	.0091	.6315	.0033	.0084	4.131	.0190	13.76	.1132	.0025
#2	.0088	.6224	.0007	.0074	4.083	.0189	13.51	.1111	.0024
#3	.0094	.6299	.0011	.0050	4.126	.0196	13.58	.1124	.0022
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**14.02**	**.0151**	**4.571**	**.0027**	**15.41**	**.0081**	**.0012**	**9.792**	**.0003**
Stddev	.05	.0001	.028	.0005	.08	.0002	.0016	.036	.0001
%RSD	.3725	.9023	.6043	18.16	.5454	2.554	140.8	.3699	42.21
#1	14.07	.0152	4.587	.0022	15.41	.0082	.0001	9.832	.0004
#2	13.97	.0150	4.539	.0028	15.32	.0082	.0031	9.761	.0002
#3	14.04	.0152	4.588	.0032	15.49	.0079	.0003	9.785	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-8-A Acquired: 12/5/2014 19:36:56 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0579	.0023	.0016	.0003	.0037	.0029	.5999
Stddev	.0005	.0013	.0005	.0008	.0174	.0008	.0040
%RSD	.8885	57.69	29.91	296.8	468.9	27.34	.6719
#1	.0582	.0018	.0020	.0002	.0101	.0022	.6019
#2	.0573	.0013	.0011	-.0005	.0169	.0037	.5953
#3	.0582	.0039	.0018	.0012	-.0159	.0028	.6025
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4017.2
Stddev	44.9
%RSD	1.1174
#1	3970.8
#2	4060.4
#3	4020.3

Sample Name: 160-9422-B-9-A Acquired: 12/5/2014 19:40:40 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.1441	<.0000	.0990	.0237	.0000	.0013	58.04	.0711
Stddev	.0006	.0047	.0011	.0029	.0005	.0000	.0006	.72	.0007
%RSD	648.7	3.286	204.8	2.947	2.279	82.09	45.40	1.233	1.016
#1	.0001	.1415	-.0017	.0957	.0231	.0001	.0019	57.22	.0703
#2	.0004	.1496	.0000	.1001	.0238	.0000	.0007	58.49	.0718
#3	-.0007	.1412	.0002	.1013	.0241	.0000	.0014	58.42	.0711
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0019	.2277	.0087	1.754	3.261	.0204	14.80	.0775	.0016
Stddev	.0003	.0046	.0012	.034	.051	.0009	.25	.0017	.0002
%RSD	17.37	2.005	13.32	1.920	1.556	4.281	1.708	2.231	14.41
#1	.0020	.2226	.0091	1.715	3.203	.0196	14.51	.0756	.0015
#2	.0015	.2313	.0095	1.769	3.290	.0213	14.95	.0782	.0014
#3	.0022	.2292	.0074	1.777	3.291	.0203	14.94	.0788	.0018
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	15.40	.0091	1.344	.1323	13.92	.0061	<.0000	11.91	.0020
Stddev	.27	.0002	.016	.0005	.11	.0005	.0022	.23	.0003
%RSD	1.747	1.938	1.186	.3672	.8139	7.645	2129.	1.911	17.16
#1	15.09	.0089	1.326	.1324	13.81	.0056	.0024	11.65	.0018
#2	15.58	.0092	1.355	.1327	14.03	.0063	-.0014	12.04	.0024
#3	15.53	.0090	1.351	.1318	13.91	.0064	-.0013	12.05	.0018
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-9-A Acquired: 12/5/2014 19:40:40 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0870	<.0000	.0031	<.0000	<.0000	.0006	.5252
Stddev	.0015	.0028	.0008	.0006	.0152	.0027	.0048
%RSD	1.684	469.4	26.02	184.5	265.9	481.7	.9221
#1	.0853	-.0037	.0034	-.0008	-.0175	.0037	.5198
#2	.0878	.0017	.0037	.0003	.0114	-.0007	.5291
#3	.0879	.0002	.0022	-.0003	-.0110	-.0013	.5268
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3984.5
Stddev	33.8
%RSD	.84844
#1	4023.5
#2	3967.3
#3	3962.8

Sample Name: 160-9422-B-10-A Acquired: 12/5/2014 19:44:23 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0004**	**.0070**	**.0000**	**.0985**	**.0149**	**.0000**	**.0008**	**57.68**	**.0180**
Stddev	.0005	.0052	.0010	.0061	.0001	.0001	.0027	.53	.0003
%RSD	124.9	73.50	3155.	6.161	.3680	432.1	351.1	.9236	1.838
#1	-.0001	.0090	.0012	.0961	.0150	.0001	-.0022	57.57	.0178
#2	.0005	.0012	-.0003	.0939	.0150	-.0001	.0014	58.27	.0184
#3	.0009	.0109	-.0008	.1053	.0149	.0000	.0031	57.22	.0179
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0023**	**.1684**	**.0008**	**.0199**	**3.379**	**.0216**	**14.81**	**.0160**	**.0018**
Stddev	.0001	.0009	.0021	.0023	.019	.0006	.09	.0003	.0002
%RSD	6.274	.5401	259.3	11.37	.5549	2.785	.5886	2.093	9.606
#1	.0022	.1680	-.0005	.0182	3.367	.0209	14.72	.0156	.0017
#2	.0024	.1695	.0032	.0190	3.400	.0221	14.90	.0161	.0016
#3	.0023	.1678	-.0003	.0224	3.369	.0218	14.81	.0162	.0020
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**16.02**	**.0080**	**1.186**	**.0047**	**13.91**	**.0038**	**.0003**	**11.81**	**<.0000**
Stddev	.04	.0002	.011	.0005	.14	.0007	.0027	.07	.0002
%RSD	.2353	2.528	.9151	10.51	1.035	17.09	1019.	.6184	153.6
#1	16.00	.0081	1.183	.0045	13.89	.0033	.0033	11.73	-.0003
#2	16.07	.0081	1.197	.0043	14.07	.0046	-.0018	11.87	.0000
#3	16.01	.0078	1.176	.0052	13.78	.0036	-.0007	11.84	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-10-A Acquired: 12/5/2014 19:44:23 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0880	.0025	.0010	<.0000	.0008	.0022	.1748
Stddev	.0003	.0018	.0003	.0005	.0092	.0035	.0016
%RSD	.2994	72.23	33.72	94.15	1211.	157.7	.9034
#1	.0879	.0043	.0013	-.0010	.0065	-.0010	.1747
#2	.0883	.0025	.0007	-.0005	.0056	.0059	.1765
#3	.0878	.0007	.0009	.0000	-.0098	.0017	.1733
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4065.9
Stddev	19.7
%RSD	.48435
#1	4080.2
#2	4043.4
#3	4074.0

Sample Name: 160-9422-B-11-A Acquired: 12/5/2014 19:48:09 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0054	<.0000	.1677	.0022	.0000	.0024	67.04	.0151
Stddev	.0007	.0081	.0006	.0005	.0001	.0000	.0015	.29	.0002
%RSD	127.7	149.7	8.710	.3194	4.416	675.3	63.13	.4316	1.202
#1	-.0010	.0137	-.0067	.1672	.0022	.0000	.0037	67.25	.0153
#2	-.0009	-.0024	-.0074	.1683	.0021	.0000	.0007	66.71	.0149
#3	.0003	.0048	-.0062	.1676	.0023	.0000	.0028	67.16	.0151
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0015	3.130	.0065	.0901	5.843	.0962	44.12	.0975	.0204
Stddev	.0003	.020	.0003	.0027	.106	.0038	.47	.0016	.0003
%RSD	18.74	.6428	5.206	2.952	1.808	3.931	1.056	1.653	1.386
#1	.0017	3.145	.0063	.0899	5.803	.0953	43.99	.0970	.0207
#2	.0014	3.107	.0069	.0876	5.762	.0929	43.73	.0962	.0203
#3	.0012	3.137	.0063	.0929	5.962	.1003	44.64	.0993	.0201
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	123.8	.0092	4.074	.0029	105.6	.0286	.0003	12.14	<.0000
Stddev	2.4	.0003	.021	.0007	.7	.0005	.0006	.22	.0003
%RSD	1.941	3.027	.5281	22.53	.7041	1.828	211.1	1.809	119.0
#1	122.8	.0093	4.094	.0030	106.1	.0281	.0009	12.06	.0001
#2	122.1	.0089	4.051	.0022	104.7	.0291	.0002	11.98	-.0004
#3	126.6	.0095	4.075	.0035	105.9	.0288	-.0002	12.39	-.0004
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-11-A Acquired: 12/5/2014 19:48:09 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2690	.0117	.0022	.0000	.0101	.0016	.6298
Stddev	.0056	.0007	.0003	.0003	.0173	.0049	.0045
%RSD	2.093	6.297	11.35	1426.	171.9	297.8	.7136
#1	.2656	.0117	.0020	-.0004	-.0099	.0032	.6329
#2	.2660	.0124	.0022	.0002	.0194	.0055	.6246
#3	.2755	.0109	.0025	.0003	.0207	-.0038	.6317
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3977.0
Stddev	19.0
%RSD	.47700
#1	3980.7
#2	3993.9
#3	3956.5

Sample Name: 160-9422-B-12-A Acquired: 12/5/2014 19:52:04 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0255	<.0000	.1574	.0021	<.0000	.0040	61.17	.0143
Stddev	.0005	.0026	.0004	.0046	.0002	.0000	.0003	1.35	.0003
%RSD	209.7	10.25	8.227	2.902	8.680	142.2	7.894	2.207	2.226
#1	-.0007	.0238	-.0049	.1601	.0022	.0000	.0043	62.71	.0147
#2	-.0001	.0285	-.0052	.1600	.0020	.0000	.0037	60.61	.0141
#3	.0002	.0243	-.0057	.1521	.0019	-.0001	.0039	60.19	.0142
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0025	2.968	.0042	.0065	5.482	.0900	40.60	.0997	.0191
Stddev	.0001	.055	.0003	.0014	.109	.0012	.92	.0021	.0004
%RSD	3.626	1.862	5.955	21.77	1.993	1.311	2.270	2.149	2.087
#1	.0026	3.032	.0040	.0068	5.608	.0913	41.63	.1022	.0194
#2	.0024	2.934	.0045	.0050	5.423	.0894	40.30	.0989	.0191
#3	.0024	2.939	.0041	.0078	5.414	.0892	39.87	.0981	.0187
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	117.3	.0086	3.818	.0033	96.37	.0234	.0007	11.45	<.0000
Stddev	3.1	.0004	.091	.0002	2.25	.0013	.0008	.26	.0003
%RSD	2.624	4.084	2.379	4.694	2.335	5.586	103.2	2.275	45.17
#1	120.8	.0090	3.920	.0035	98.92	.0249	.0003	11.75	-.0004
#2	115.1	.0084	3.791	.0032	95.55	.0230	.0016	11.32	-.0008
#3	115.9	.0083	3.744	.0033	94.65	.0223	.0003	11.29	-.0010
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-12-A Acquired: 12/5/2014 19:52:04 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2542	.0130	.0020	.0002	.0125	.0025	.6061
Stddev	.0052	.0030	.0006	.0001	.0116	.0023	.0133
%RSD	2.045	22.83	31.15	43.57	92.42	92.20	2.191
#1	.2602	.0106	.0020	.0002	.0240	.0036	.6211
#2	.2514	.0120	.0026	.0003	.0128	.0040	.6012
#3	.2511	.0163	.0014	.0001	.0008	-.0002	.5960
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4194.2
Stddev	75.6
%RSD	1.8015
#1	4108.6
#2	4222.5
#3	4251.5

Sample Name: 160-9422-B-13-A Acquired: 12/5/2014 19:55:58 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0757	<.0000	.1540	.0122	<.0000	.0063	60.22	.1388
Stddev	.0006	.0006	.0016	.0022	.0003	.0000	.0008	.89	.0016
%RSD	211.3	.7792	26.57	1.414	2.440	1282.	13.21	1.477	1.145
#1	-.0009	.0764	-.0069	.1541	.0124	.0000	.0072	59.29	.1371
#2	.0003	.0755	-.0072	.1518	.0125	.0000	.0063	61.07	.1403
#3	-.0003	.0753	-.0042	.1562	.0119	.0000	.0056	60.30	.1390
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0019	3.999	.0085	3.985	5.378	.0942	41.15	.1813	.0175
Stddev	.0001	.077	.0009	.060	.106	.0012	.63	.0028	.0001
%RSD	7.437	1.921	10.56	1.500	1.979	1.327	1.533	1.540	.6889
#1	.0020	3.940	.0075	4.021	5.456	.0949	41.39	.1828	.0174
#2	.0019	4.086	.0092	4.018	5.420	.0949	41.62	.1829	.0176
#3	.0017	3.971	.0087	3.916	5.256	.0927	40.43	.1780	.0176
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	120.1	.0101	3.924	.1092	96.92	.0322	.0007	11.82	.0006
Stddev	4.6	.0001	.060	.0029	1.47	.0016	.0018	.18	.0005
%RSD	3.831	.6793	1.518	2.695	1.517	5.108	263.2	1.542	78.73
#1	122.0	.0101	3.862	.1063	95.43	.0339	.0019	11.94	.0011
#2	123.4	.0102	3.981	.1122	98.37	.0306	.0015	11.92	.0002
#3	114.9	.0101	3.927	.1090	96.96	.0321	-.0014	11.61	.0005
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-13-A Acquired: 12/5/2014 19:55:58 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2797	.0189	.0035	<.0000	.0091	.0029	4.128
Stddev	.0049	.0011	.0001	.0002	.0119	.0012	.064
%RSD	1.734	5.556	3.185	29.56	131.4	41.05	1.542
#1	.2832	.0194	.0034	-.0010	-.0029	.0020	4.066
#2	.2818	.0177	.0034	-.0006	.0210	.0024	4.193
#3	.2742	.0197	.0036	-.0008	.0091	.0042	4.126
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4003.7
Stddev	56.0
%RSD	1.3992
#1	4040.2
#2	3939.2
#3	4031.7

Sample Name: 160-9422-B-14-A Acquired: 12/5/2014 19:59:49 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0002	<.0000	.1496	.0044	<.0000	.0041	57.56	.0308
Stddev	.0010	.0108	.0006	.0016	.0002	.0000	.0008	.15	.0002
%RSD	244.0	5874.	12.51	1.038	4.945	317.0	19.24	.2592	.7265
#1	.0005	-.0079	-.0044	.1485	.0043	.0000	.0049	57.71	.0310
#2	-.0014	-.0040	-.0053	.1490	.0047	.0000	.0039	57.41	.0307
#3	-.0002	.0124	-.0042	.1514	.0044	.0000	.0034	57.56	.0306
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0021	2.934	.0044	.0073	5.146	.0900	40.17	.1144	.0176
Stddev	.0002	.022	.0001	.0017	.032	.0005	.20	.0002	.0002
%RSD	8.366	.7530	1.972	22.79	.6163	.5987	.4955	.1967	1.038
#1	.0023	2.960	.0044	.0055	5.161	.0900	40.23	.1143	.0174
#2	.0020	2.919	.0045	.0087	5.109	.0905	39.95	.1144	.0175
#3	.0020	2.925	.0043	.0079	5.166	.0895	40.33	.1147	.0178
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	115.5	.0083	2.106	.0031	92.66	.0245	.0005	11.38	<.0000
Stddev	1.4	.0003	.010	.0008	.42	.0025	.0035	.02	.0001
%RSD	1.217	3.160	.4613	26.07	.4580	10.05	754.6	.2172	28.40
#1	113.8	.0086	2.117	.0039	93.15	.0217	.0012	11.37	-.0004
#2	116.3	.0082	2.099	.0024	92.43	.0258	-.0034	11.37	-.0003
#3	116.2	.0081	2.102	.0028	92.40	.0260	.0035	11.41	-.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-14-A Acquired: 12/5/2014 19:59:49 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2586	.0129	.0023	<.0000	.0020	.0016	.9130
Stddev	.0010	.0018	.0004	.0014	.0073	.0020	.0033
%RSD	.4022	14.15	18.12	109.5	370.8	125.5	.3612
#1	.2584	.0112	.0028	-.0012	-.0049	.0038	.9165
#2	.2577	.0128	.0022	.0001	.0097	-.0002	.9099
#3	.2598	.0148	.0020	-.0026	.0011	.0013	.9127
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4077.2
Stddev	16.6
%RSD	.40791
#1	4067.0
#2	4096.4
#3	4068.3

Sample Name: 160-9422-B-15-A Acquired: 12/5/2014 20:03:39 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0921	<.0000	1.350	.0009	<.0000	.0161	17.86	.1869
Stddev	.0008	.0032	.0008	.014	.0002	.0000	.0032	.21	.0027
%RSD	2921.	3.461	4.353	1.065	21.29	27.64	19.85	1.191	1.435
#1	-.0010	.0928	-.0184	1.351	.0007	.0000	.0197	18.01	.1887
#2	.0007	.0949	-.0177	1.336	.0008	.0000	.0139	17.62	.1838
#3	.0001	.0886	-.0193	1.364	.0011	.0000	.0145	17.96	.1881
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0201	10.33	.0241	2.467	20.61	.0106	3.859	.2158	.0024
Stddev	.0002	.07	.0015	.032	.25	.0009	.041	.0028	.0002
%RSD	1.151	.6777	6.154	1.280	1.234	8.878	1.049	1.297	8.387
#1	.0204	10.27	.0255	2.478	20.76	.0108	3.856	.2180	.0021
#2	.0199	10.33	.0225	2.431	20.32	.0095	3.820	.2126	.0025
#3	.0201	10.41	.0243	2.492	20.77	.0114	3.901	.2168	.0025
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.769	.0574	47.42	.0447	4.781	.0848	<.0000	6.055	<.0000
Stddev	.095	.0007	.59	.0010	.051	.0029	.0018	.079	.0001
%RSD	1.399	1.139	1.252	2.250	1.067	3.372	2886.	1.301	159.1
#1	6.833	.0580	47.89	.0451	4.822	.0875	.0019	6.097	.0000
#2	6.660	.0567	46.75	.0435	4.724	.0818	-.0006	5.964	.0000
#3	6.814	.0575	47.61	.0454	4.798	.0851	-.0015	6.104	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-15-A Acquired: 12/5/2014 20:03:39 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0096	.0336	.0086	.0007	<.0000	.0102	3.459
Stddev	.0001	.0049	.0001	.0011	.0097	.0028	.038
%RSD	.7313	14.58	1.633	141.3	208.1	27.49	1.111
#1	.0097	.0350	.0086	.0013	.0063	.0120	3.491
#2	.0095	.0282	.0088	.0014	-.0080	.0117	3.417
#3	.0096	.0377	.0085	-.0005	-.0122	.0070	3.471
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4305.0
Stddev	25.9
%RSD	.60258
#1	4300.3
#2	4333.0
#3	4281.7

Sample Name: 160-9422-B-16-A Acquired: 12/5/2014 20:07:20 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	<.0000	<.0000	.3494	.0000	.0000	.0055	1.719	.0395
Stddev	.0012	.0087	.0012	.0065	.0001	.0000	.0022	.063	.0014
%RSD	335.9	212.0	23.05	1.847	357.0	17140.	39.85	3.666	3.571
#1	.0016	-.0097	-.0038	.3568	.0001	.0000	.0070	1.663	.0382
#2	.0000	-.0085	-.0060	.3449	.0000	.0000	.0030	1.707	.0393
#3	-.0006	.0059	-.0052	.3465	.0000	.0000	.0064	1.787	.0410
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0075	2.713	.0093	.0037	3.327	.0000	.4966	.0234	.0006
Stddev	.0003	.006	.0005	.0012	.051	.0005	.0209	.0005	.0001
%RSD	4.342	.2271	4.947	31.49	1.540	3351.	4.213	2.316	11.00
#1	.0072	2.720	.0095	.0050	3.372	.0005	.5200	.0240	.0005
#2	.0075	2.709	.0088	.0029	3.338	-.0004	.4902	.0230	.0007
#3	.0079	2.709	.0096	.0032	3.271	.0000	.4796	.0231	.0006
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.004	.0165	14.57	.0010	.9517	.0263	.0014	.6862	<.0000
Stddev	.032	.0006	.50	.0007	.0286	.0014	.0008	.0087	.0002
%RSD	3.151	3.620	3.398	65.99	3.005	5.194	54.09	1.274	156.6
#1	1.037	.0159	14.15	.0017	.9271	.0250	.0017	.6939	-.0004
#2	1.003	.0164	14.45	.0010	.9448	.0262	.0006	.6767	.0001
#3	.9734	.0171	15.11	.0004	.9831	.0277	.0020	.6879	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-16-A Acquired: 12/5/2014 20:07:20 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	.0081	.0002	.0010	<.0000	.0031	.1907
Stddev	.0001	.0027	.0010	.0011	.0140	.0042	.0067
%RSD	13.91	32.96	468.3	112.3	122.2	135.5	3.503
#1	.0005	.0112	.0008	.0019	-.0014	-.0016	.1851
#2	.0004	.0060	-.0009	-.0002	-.0275	.0064	.1889
#3	.0004	.0072	.0008	.0012	-.0055	.0045	.1981
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4271.0
Stddev	54.3
%RSD	1.2721
#1	4208.8
#2	4295.3
#3	4309.0

Sample Name: CCV Acquired: 12/5/2014 20:11:08 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.041**	**49.57**	**5.271**	**5.001**	**5.036**	**5.056**	**5.232**	**54.68**	**5.296**
Stddev	.020	1.31	.180	.120	.098	.177	.183	1.64	.174
%RSD	1.898	2.635	3.419	2.398	1.943	3.511	3.499	2.993	3.283
#1	1.058	50.56	5.433	5.089	5.062	5.199	5.397	56.18	5.455
#2	1.045	50.07	5.305	5.049	5.118	5.112	5.264	54.93	5.323
#3	1.019	48.09	5.077	4.864	4.928	4.857	5.035	52.94	5.110
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.390**	**5.420**	**5.266**	**51.18**	**51.37**	**5.027**	**51.55**	**5.102**	**1.072**
Stddev	.176	.091	.175	1.27	1.31	.129	1.35	.129	.036
%RSD	3.263	1.683	3.320	2.483	2.553	2.563	2.619	2.519	3.328
#1	5.550	5.509	5.426	52.17	52.34	5.123	52.59	5.198	1.104
#2	5.417	5.424	5.292	51.61	51.89	5.077	52.03	5.152	1.079
#3	5.202	5.327	5.079	49.74	49.88	4.881	50.02	4.956	1.034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**50.76**	**5.419**	**54.29**	**5.432**	**51.83**	**1.042**	**1.041**	**4.983**	**5.436**
Stddev	1.42	.172	1.82	.173	1.79	.035	.037	.130	.180
%RSD	2.808	3.173	3.351	3.189	3.454	3.399	3.592	2.611	3.315
#1	51.88	5.576	55.98	5.590	53.43	1.074	1.076	5.082	5.597
#2	51.24	5.447	54.53	5.460	52.16	1.046	1.046	5.031	5.469
#3	49.15	5.235	52.36	5.247	49.89	1.004	1.002	4.835	5.241
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Sample Name: CCV Acquired: 12/5/2014 20:11:08 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.031**	**5.294**	**5.057**	**1.092**	**5.322**	**5.078**	**5.326**
Stddev	.153	.096	.131	.035	.097	.136	.178
%RSD	3.049	1.807	2.595	3.185	1.825	2.681	3.351
#1	5.172	5.373	5.159	1.124	5.426	5.176	5.489
#2	5.053	5.322	5.102	1.098	5.307	5.136	5.353
#3	4.868	5.188	4.909	1.055	5.234	4.923	5.135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	**4002.9**
Stddev	84.5
%RSD	2.1098
#1	3938.3
#2	3972.0
#3	4098.5

Sample Name: CCB Acquired: 12/5/2014 20:14:56 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0002	.0003	.0137	.0007	.0004	<.0000	.0014	.0001
Stddev	.0003	.0020	.0028	.0033	.0001	.0001	.0015	.0002	.0002
%RSD	46.91	859.7	803.6	23.72	11.69	25.88	264.3	11.30	143.5
#1	-.0003	-.0016	.0035	.0100	.0007	.0004	.0002	.0015	.0000
#2	-.0008	.0000	-.0018	.0149	.0007	.0004	.0004	.0012	.0001
#3	-.0007	.0023	-.0007	.0162	.0006	.0003	-.0023	.0014	.0003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0015	.0006	.0028	.0538	.0002	.0050	.0002	<.0000
Stddev	.0002	.0003	.0015	.0009	.0147	.0009	.0055	.0002	.0002
%RSD	159.8	22.77	266.1	30.03	27.26	544.1	110.5	100.5	631.4
#1	-.0001	.0013	-.0007	.0034	.0403	.0012	.0113	.0000	.0001
#2	.0003	.0012	.0022	.0019	.0516	-.0005	.0009	.0004	.0000
#3	.0002	.0018	.0001	.0033	.0694	-.0002	.0028	.0002	-.0002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0005	.0017	.0011	.0079	.0005	.0004	.0039	.0002
Stddev	.0105	.0001	.0006	.0011	.0014	.0016	.0008	.0055	.0002
%RSD	11570.	24.55	36.33	102.6	17.89	326.9	201.9	141.8	95.97
#1	.0055	.0005	.0017	.0002	.0095	.0015	-.0003	-.0024	.0000
#2	.0065	.0006	.0023	.0007	.0070	-.0013	.0012	.0076	.0004
#3	-.0122	.0004	.0011	.0023	.0071	.0013	.0003	.0064	.0002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Sample Name: CCB Acquired: 12/5/2014 20:14:56 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	.0017	.0010	<.0000	<.0000	.0000	.0001
Stddev	.0001	.0004	.0003	.0008	.0043	.0039	.0000
%RSD	36.81	24.18	31.45	49.94	139.3	9129.	52.05
#1	.0004	.0017	.0007	-.0008	-.0079	-.0010	.0001
#2	.0003	.0021	.0010	-.0017	-.0013	.0043	.0001
#3	.0002	.0013	.0013	-.0024	.0000	-.0032	.0000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_3710
Units	Cts/S
Avg	4024.2
Stddev	16.0
%RSD	.39869
#1	4011.1
#2	4042.1
#3	4019.5

Sample Name: 160-9422-B-17-A Acquired: 12/5/2014 20:18:53 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**.0796**	**<.0000**	**.1099**	**.0007**	**.0000**	**.0071**	**4.640**	**.2740**
Stddev	.0002	.0054	.0015	.0027	.0001	.0001	.0005	.059	.0038
%RSD	212.1	6.777	20.72	2.417	14.69	165.5	7.173	1.278	1.375
#1	.0002	.0830	-.0083	.1100	.0006	.0001	.0069	4.628	.2728
#2	.0002	.0734	-.0081	.1072	.0007	.0000	.0067	4.588	.2710
#3	-.0001	.0825	-.0056	.1125	.0008	.0000	.0077	4.705	.2782
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0067**	**3.739**	**.0123**	**1.858**	**2.793**	**.0031**	**1.746**	**.0653**	**.0006**
Stddev	.0002	.046	.0019	.039	.079	.0000	.029	.0010	.0003
%RSD	3.013	1.234	15.22	2.087	2.834	.8885	1.645	1.513	44.48
#1	.0069	3.735	.0139	1.867	2.832	.0031	1.740	.0654	.0009
#2	.0066	3.696	.0103	1.816	2.702	.0031	1.722	.0643	.0005
#3	.0065	3.788	.0128	1.892	2.846	.0031	1.778	.0662	.0004
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.348**	**.0070**	**16.76**	**.0302**	**2.033**	**.0281**	**<.0000**	**.7972**	**<.0000**
Stddev	.074	.0001	.18	.0006	.024	.0014	.0015	.0292	.0003
%RSD	2.212	1.314	1.100	2.129	1.158	4.943	743.3	3.658	250.6
#1	3.359	.0071	16.75	.0299	2.044	.0275	.0009	.8128	.0000
#2	3.270	.0069	16.57	.0298	2.006	.0271	.0004	.7636	-.0005
#3	3.417	.0071	16.94	.0309	2.049	.0297	-.0019	.8153	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-17-A Acquired: 12/5/2014 20:18:53 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0065	.0139	.0019	<.0000	<.0000	.0005	2.456
Stddev	.0001	.0034	.0005	.0006	.0042	.0028	.032
%RSD	1.875	24.21	28.29	56.62	130.4	600.1	1.289
#1	.0066	.0170	.0020	-.0012	-.0080	-.0025	2.450
#2	.0064	.0144	.0023	-.0003	-.0003	.0007	2.427
#3	.0066	.0103	.0013	-.0014	-.0014	.0032	2.490
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4163.5
Stddev	48.2
%RSD	1.1566
#1	4146.8
#2	4217.8
#3	4126.0

Sample Name: 160-9422-B-18-A Acquired: 12/5/2014 20:22:38 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0004**	**.0139**	**<.0000**	**.5739**	**.0005**	**.0000**	**.0148**	**25.80**	**.1387**
Stddev	.0002	.0001	.0008	.0053	.0000	.0000	.0005	.25	.0015
%RSD	38.10	.9651	4.229	.9174	2.971	345.3	3.511	.9722	1.056
#1	.0003	.0139	-.0181	.5742	.0004	.0000	.0151	26.09	.1404
#2	.0004	.0137	-.0196	.5684	.0005	.0000	.0142	25.64	.1376
#3	.0006	.0140	-.0183	.5789	.0004	.0000	.0151	25.67	.1382
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0283**	**10.02**	**.0273**	**.2668**	**16.16**	**.0219**	**12.22**	**.1358**	**.0030**
Stddev	.0006	.16	.0008	.0031	.20	.0014	.07	.0016	.0002
%RSD	2.009	1.583	2.749	1.180	1.208	6.272	.5819	1.164	5.463
#1	.0289	10.20	.0278	.2664	16.12	.0227	12.26	.1346	.0032
#2	.0282	9.946	.0277	.2639	15.99	.0203	12.14	.1353	.0029
#3	.0278	9.916	.0265	.2701	16.37	.0227	12.26	.1376	.0031
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**23.68**	**.0245**	**56.82**	**.0039**	**16.20**	**.0810**	**<.0000**	**7.508**	**<.0000**
Stddev	.22	.0004	.55	.0005	.15	.0008	.0006	.046	.0001
%RSD	.9416	1.572	.9707	13.19	.9551	.9804	33.62	.6151	18.92
#1	23.62	.0250	57.45	.0043	16.38	.0811	-.0019	7.489	-.0006
#2	23.50	.0242	56.44	.0033	16.09	.0817	-.0025	7.474	-.0004
#3	23.93	.0245	56.56	.0039	16.13	.0801	-.0012	7.561	-.0006
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-18-A Acquired: 12/5/2014 20:22:38 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0186	.0297	.0030	<.0000	.0016	.0042	1.148
Stddev	.0001	.0036	.0001	.0006	.0045	.0021	.011
%RSD	.7321	12.06	4.907	418.5	283.9	49.26	.9652
#1	.0186	.0307	.0030	-.0006	-.0024	.0038	1.160
#2	.0184	.0327	.0028	.0005	.0064	.0065	1.140
#3	.0187	.0257	.0031	-.0003	.0008	.0024	1.143
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4052.6
Stddev	40.4
%RSD	.99800
#1	4005.9
#2	4076.6
#3	4075.3

Sample Name: MB 160-160135/1-A Acquired: 12/5/2014 20:26:22 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	.0000	.0049	.0003	<.0000	.0005	.1702	.0001
Stddev	.0005	.0158	.0008	.0071	.0001	.0001	.0021	.0005	.0000
%RSD	131.7	1124.	44170.	143.6	26.71	577.2	473.0	.2947	58.88
#1	-.0010	-.0143	-.0003	.0092	.0004	-.0001	.0013	.1707	.0001
#2	-.0002	.0162	.0009	.0089	.0003	.0001	.0020	.1702	.0000
#3	.0000	-.0061	-.0006	-.0033	.0002	.0000	-.0020	.1697	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0020	<.0000	.0106	.0751	<.0000	.0063	.0003	.0009
Stddev	.0002	.0007	.0008	.0033	.0185	.0001	.0071	.0001	.0001
%RSD	206.1	37.13	196.9	31.12	24.70	13.35	112.0	40.99	17.02
#1	.0000	.0013	.0004	.0143	.0607	-.0009	.0017	.0002	.0010
#2	-.0004	.0020	-.0011	.0084	.0685	-.0008	.0145	.0003	.0007
#3	.0000	.0028	-.0005	.0089	.0960	-.0007	.0028	.0005	.0008
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0204	.0006	.0038	.0003	.0990	<.0000	.0009	.0530	.0008
Stddev	.0043	.0001	.0010	.0006	.0021	.0004	.0017	.0061	.0005
%RSD	21.21	11.97	26.72	186.8	2.166	45.26	185.0	11.50	57.08
#1	.0154	.0006	.0048	.0008	.0997	-.0004	.0008	.0484	.0012
#2	.0230	.0007	.0039	.0006	.0965	-.0010	-.0007	.0599	.0003
#3	.0228	.0006	.0027	-.0004	.1006	-.0011	.0027	.0507	.0009
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: MB 160-160135/1-A Acquired: 12/5/2014 20:26:22 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0013	<.0000	<.0000	<.0000	.0020	.0417
Stddev	.0001	.0014	.0006	.0004	.0113	.0028	.0004
%RSD	47.41	104.1	370.8	17.80	71.38	143.2	.8766
#1	.0001	.0013	-.0003	-.0019	-.0115	.0038	.0421
#2	.0002	.0028	-.0007	-.0017	-.0285	.0034	.0415
#3	.0001	.0000	.0005	-.0024	-.0072	-.0013	.0414
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3959.8
Stddev	14.0
%RSD	.35415
#1	3947.4
#2	3975.0
#3	3957.0

Sample Name: LCS 160-160135/2-A Acquired: 12/5/2014 20:30:16 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2083**	**10.21**	**1.099**	**2.013**	**1.041**	**1.048**	**1.064**	**12.37**	**1.104**
Stddev	.0021	.05	.012	.018	.005	.008	.012	.14	.011
%RSD	1.014	.4832	1.054	.8688	.4965	.7211	1.118	1.150	1.004
#1	.2059	10.19	1.091	2.002	1.039	1.044	1.055	12.24	1.094
#2	.2093	10.16	1.094	2.005	1.036	1.043	1.059	12.34	1.101
#3	.2098	10.26	1.112	2.034	1.046	1.056	1.077	12.52	1.116
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.219**	**1.158**	**1.145**	**10.69**	**10.42**	**1.044**	**10.34**	**1.058**	**.5536**
Stddev	.015	.009	.014	.06	.02	.004	.08	.004	.0056
%RSD	1.266	.8015	1.191	.5525	.1912	.3594	.7901	.3603	1.017
#1	1.205	1.147	1.133	10.65	10.42	1.044	10.28	1.057	.5491
#2	1.216	1.163	1.141	10.65	10.40	1.040	10.31	1.054	.5517
#3	1.236	1.164	1.160	10.75	10.43	1.047	10.44	1.062	.5599
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.34**	**1.186**	**1.186**	**1.201**	**10.35**	**.5268**	**.5543**	**.0315**	**1.123**
Stddev	.06	.013	.013	.014	.10	.0041	.0063	.0078	.013
%RSD	.6267	1.098	1.086	1.161	.9646	.7818	1.139	24.86	1.112
#1	10.34	1.175	1.178	1.188	10.27	.5229	.5528	.0279	1.112
#2	10.28	1.183	1.180	1.200	10.33	.5263	.5488	.0261	1.121
#3	10.41	1.201	1.201	1.216	10.46	.5311	.5612	.0405	1.137
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LCS 160-160135/2-A Acquired: 12/5/2014 20:30:16 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.068	1.122	.9893	.2441	1.188	1.037	1.137
Stddev	.007	.011	.0042	.0031	.011	.004	.013
%RSD	.6247	.9543	.4272	1.287	.9270	.3379	1.130
#1	1.065	1.110	.9869	.2420	1.183	1.041	1.127
#2	1.063	1.130	.9870	.2427	1.181	1.036	1.133
#3	1.075	1.125	.9942	.2477	1.201	1.034	1.152
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4041.4
Stddev	36.1
%RSD	.89391
#1	4070.2
#2	4053.3
#3	4000.9

Sample Name: LCSD 160-160135/3-A Acquired: 12/5/2014 20:33:41 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2009**	**9.437**	**1.030**	**1.907**	**.9564**	**.9700**	**1.014**	**11.65**	**1.035**
Stddev	.0047	.095	.016	.027	.0092	.0098	.012	.17	.013
%RSD	2.345	1.008	1.529	1.403	.9613	1.015	1.204	1.471	1.272
#1	.2061	9.461	1.045	1.920	.9571	.9753	1.027	11.82	1.048
#2	.1994	9.517	1.031	1.924	.9652	.9760	1.013	11.65	1.035
#3	.1971	9.332	1.014	1.876	.9468	.9586	1.003	11.48	1.022
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.134**	**1.056**	**1.061**	**9.868**	**9.636**	**.9656**	**9.778**	**.9839**	**.5119**
Stddev	.015	.027	.014	.108	.140	.0116	.152	.0112	.0075
%RSD	1.314	2.555	1.338	1.097	1.449	1.202	1.558	1.141	1.460
#1	1.150	1.087	1.074	9.953	9.675	.9606	9.912	.9916	.5194
#2	1.132	1.045	1.062	9.904	9.752	.9789	9.809	.9890	.5119
#3	1.120	1.037	1.046	9.746	9.481	.9573	9.612	.9710	.5045
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.682**	**1.101**	**1.115**	**1.125**	**9.853**	**.4935**	**.5178**	**.0333**	**1.054**
Stddev	.084	.016	.014	.015	.119	.0046	.0057	.0048	.015
%RSD	.8719	1.430	1.228	1.339	1.211	.9384	1.093	14.34	1.381
#1	9.674	1.117	1.128	1.141	9.977	.4975	.5236	.0357	1.069
#2	9.771	1.100	1.116	1.123	9.845	.4946	.5175	.0365	1.052
#3	9.603	1.085	1.101	1.111	9.738	.4884	.5123	.0278	1.040
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LCSD 160-160135/3-A Acquired: 12/5/2014 20:33:41 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9843	1.046	.9226	.2327	1.075	.9691	1.061
Stddev	.0097	.027	.0102	.0014	.038	.0088	.013
%RSD	.9873	2.607	1.106	.6113	3.510	.9091	1.175
#1	.9860	1.078	.9252	.2341	1.114	.9735	1.074
#2	.9931	1.034	.9312	.2328	1.074	.9749	1.060
#3	.9739	1.027	.9113	.2313	1.039	.9590	1.049
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4115.6
Stddev	76.9
%RSD	1.8680
#1	4031.9
#2	4131.9
#3	4183.1

Sample Name: 160-9422-B-16-H Acquired: 12/5/2014 20:37:07 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	<.0000	.4566	.0005	.0001	.0040	2.047	.0471
Stddev	.0002	.0029	.0007	.0023	.0002	.0000	.0003	.022	.0004
%RSD	34.15	271.0	11.27	.5024	40.46	49.34	6.578	1.087	.8798
#1	-.0004	-.0037	-.0057	.4589	.0004	.0001	.0037	2.023	.0467
#2	-.0003	.0021	-.0066	.4567	.0007	.0001	.0041	2.067	.0475
#3	-.0006	-.0017	-.0071	.4543	.0003	.0000	.0042	2.051	.0471
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0088	3.453	.0093	.0065	4.140	.0017	.6439	.0302	.0006
Stddev	.0001	.066	.0020	.0001	.088	.0011	.0265	.0003	.0001
%RSD	.9901	1.921	21.63	1.263	2.128	65.52	4.122	1.078	18.10
#1	.0089	3.382	.0106	.0066	4.053	.0020	.6245	.0299	.0007
#2	.0087	3.513	.0103	.0064	4.229	.0005	.6741	.0305	.0005
#3	.0088	3.464	.0070	.0064	4.139	.0027	.6330	.0303	.0007
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.246	.0196	17.34	.0010	1.128	.0276	.0011	.8856	.0001
Stddev	.011	.0004	.18	.0017	.009	.0014	.0007	.0092	.0003
%RSD	.8674	2.227	1.051	161.8	.8331	5.246	61.91	1.035	242.3
#1	1.240	.0192	17.14	.0016	1.118	.0260	.0017	.8755	.0003
#2	1.259	.0200	17.50	.0023	1.136	.0281	.0004	.8880	-.0003
#3	1.240	.0196	17.38	-.0009	1.129	.0288	.0012	.8933	.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-16-H Acquired: 12/5/2014 20:37:07 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0007	.0109	.0002	<.0000	<.0000	.0004	.2288
Stddev	.0000	.0024	.0005	.0013	.0107	.0015	.0021
%RSD	5.849	22.36	320.3	232.7	280.7	350.7	.9115
#1	.0006	.0093	.0008	-.0017	-.0116	-.0011	.2265
#2	.0007	.0098	-.0001	-.0008	-.0083	.0006	.2304
#3	.0007	.0138	-.0002	.0008	.0084	.0018	.2296
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3955.8
Stddev	63.8
%RSD	1.6123
#1	4027.3
#2	3904.6
#3	3935.5

Sample Name: 160-9422-B-16-H SD Acquired: 12/5/2014 20:40:53 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=50

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0009	<.0000	.0861	.0002	.0000	.0000	.3687	.0086
Stddev	.0005	.0096	.0007	.0040	.0001	.0000	.0012	.0020	.0001
%RSD	1557.	1120.	35.03	4.697	80.78	460.9	4827.	.5324	1.283
#1	.0005	.0049	-.0020	.0819	.0003	.0000	.0001	.3700	.0087
#2	-.0005	-.0101	-.0025	.0900	.0001	.0000	-.0012	.3696	.0085
#3	-.0001	.0078	-.0012	.0865	.0000	.0000	.0011	.3664	.0085
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0014	.6265	.0010	.0008	.8021	<.0000	.1141	.0054	.0001
Stddev	.0001	.0030	.0028	.0004	.0226	.0002	.0101	.0001	.0002
%RSD	5.252	.4845	283.0	50.08	2.816	46.57	8.809	1.898	150.0
#1	.0015	.6299	.0041	.0009	.7979	-.0002	.1057	.0054	.0003
#2	.0014	.6254	-.0012	.0010	.7818	-.0005	.1252	.0054	-.0001
#3	.0015	.6242	.0000	.0003	.8264	-.0007	.1114	.0056	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2330	.0036	3.140	.0015	.2055	.0050	.0020	.1574	.0001
Stddev	.0028	.0002	.014	.0010	.0027	.0011	.0006	.0071	.0003
%RSD	1.208	5.718	.4550	63.26	1.335	22.72	30.89	4.517	254.4
#1	.2298	.0038	3.156	.0004	.2069	.0060	.0023	.1635	.0005
#2	.2340	.0038	3.135	.0019	.2072	.0052	.0025	.1591	-.0001
#3	.2351	.0034	3.129	.0023	.2023	.0038	.0013	.1496	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-16-H SD Acquired: 12/5/2014 20:40:53 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=50

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0012	.0004	<.0000	<.0000	.0027	.0464
Stddev	.0000	.0026	.0009	.0009	.0139	.0006	.0003
%RSD	40.02	213.2	244.2	60.25	114.9	23.25	.7330
#1	.0001	.0042	.0014	-.0017	.0030	.0021	.0468
#2	.0001	-.0008	-.0002	-.0023	-.0151	.0025	.0465
#3	.0002	.0003	-.0001	-.0005	-.0242	.0034	.0461
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4160.3
Stddev	5.8
%RSD	.14031
#1	4154.7
#2	4159.8
#3	4166.4

Sample Name: 160-9422-B-16-H PDS Acquired: 12/5/2014 20:44:42 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1048**	**1.991**	**.0966**	**.9385**	**.4968**	**.0523**	**1.901**	**13.92**	**.0993**
Stddev	.0005	.008	.0004	.0073	.0035	.0005	.018	.11	.0007
%RSD	.5202	.4182	.4344	.7819	.7012	.8966	.9217	.7952	.7161
#1	.1042	1.982	.0965	.9306	.4929	.0518	1.885	13.83	.0985
#2	.1048	1.994	.0962	.9451	.4979	.0527	1.919	14.04	.0999
#3	.1053	1.998	.0971	.9398	.4996	.0525	1.898	13.89	.0994
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.5931**	**3.365**	**.2894**	**1.060**	**54.83**	**.5017**	**10.95**	**.1844**	**.4533**
Stddev	.0051	.032	.0038	.007	.33	.0039	.09	.0007	.0041
%RSD	.8589	.9355	1.312	.6198	.6058	.7803	.8207	.3814	.9068
#1	.5879	3.341	.2863	1.053	54.45	.4973	10.84	.1836	.4488
#2	.5981	3.401	.2936	1.065	54.97	.5030	10.99	.1845	.4568
#3	.5932	3.353	.2883	1.063	55.07	.5047	11.01	.1850	.4542
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**11.16**	**.4861**	**19.64**	**.1149**	**54.72**	**.1209**	**.1563**	**4.823**	**1.149**
Stddev	.08	.0042	.17	.0015	.57	.0019	.0024	.044	.012
%RSD	.7490	.8545	.8448	1.317	1.035	1.562	1.541	.9142	1.053
#1	11.07	.4818	19.49	.1139	54.13	.1193	.1536	4.773	1.138
#2	11.22	.4901	19.82	.1167	55.26	.1230	.1575	4.839	1.162
#3	11.21	.4863	19.62	.1143	54.76	.1204	.1579	4.857	1.149
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-16-H PDS Acquired: 12/5/2014 20:44:42 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0513	1.335	.2051	.2326	5.462	.4998	.4475
Stddev	.0004	.014	.0014	.0015	.065	.0044	.0035
%RSD	.6838	1.040	.6953	.6589	1.181	.8903	.7853
#1	.0509	1.324	.2039	.2316	5.424	.4947	.4444
#2	.0515	1.351	.2049	.2343	5.536	.5015	.4513
#3	.0515	1.331	.2067	.2318	5.425	.5031	.4468
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3944.0
Stddev	22.1
%RSD	.55940
#1	3967.3
#2	3923.4
#3	3941.4

Sample Name: 160-9422-B-19-E Acquired: 12/5/2014 20:48:13 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0197	<.0000	.0481	.0004	.0000	.0028	3.045	.1085
Stddev	.0002	.0076	.0013	.0045	.0002	.0001	.0024	.125	.0042
%RSD	40.35	38.37	31.36	9.248	41.06	1455.	85.75	4.115	3.827
#1	-.0002	.0253	-.0035	.0523	.0004	.0000	.0011	2.929	.1049
#2	-.0006	.0111	-.0035	.0434	.0002	.0001	.0055	3.027	.1075
#3	-.0004	.0227	-.0058	.0487	.0005	.0000	.0017	3.178	.1131
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0026	1.496	.0061	.8328	1.435	.0013	1.058	.0287	.0003
Stddev	.0003	.014	.0008	.0100	.031	.0005	.020	.0006	.0001
%RSD	12.83	.9227	12.71	1.203	2.172	40.23	1.921	2.049	45.00
#1	.0024	1.483	.0060	.8273	1.418	.0015	1.057	.0289	.0001
#2	.0024	1.495	.0070	.8268	1.416	.0007	1.039	.0280	.0004
#3	.0030	1.510	.0054	.8444	1.471	.0017	1.079	.0291	.0004
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.867	.0039	6.747	.0128	1.423	.0124	.0010	.6020	.0001
Stddev	.030	.0003	.278	.0003	.055	.0012	.0008	.0069	.0004
%RSD	1.604	8.538	4.117	2.025	3.834	9.695	85.95	1.154	383.9
#1	1.841	.0039	6.505	.0125	1.376	.0114	.0009	.5947	.0003
#2	1.862	.0036	6.687	.0131	1.410	.0121	.0002	.6085	.0003
#3	1.900	.0043	7.051	.0128	1.483	.0138	.0018	.6027	-.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-19-E Acquired: 12/5/2014 20:48:13 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0034	.0048	.0010	<.0000	<.0000	<.0000	.9979
Stddev	.0001	.0033	.0008	.0007	.0123	.0023	.0388
%RSD	3.164	68.68	81.05	355.7	148.1	887.8	3.891
#1	.0033	.0019	.0011	.0005	.0031	.0006	.9651
#2	.0034	.0042	.0001	-.0010	-.0214	.0015	.9877
#3	.0035	.0084	.0018	-.0002	-.0066	-.0029	1.041
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3976.6
Stddev	42.5
%RSD	1.0676
#1	3998.5
#2	4003.6
#3	3927.6

Sample Name: 160-9422-B-20-C Acquired: 12/5/2014 20:51:58 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	<.0000	.0233	.0003	<.0000	.0021	1.956	.0004
Stddev	.0009	.0044	.0003	.0014	.0000	.0000	.0029	.052	.0003
%RSD	275.7	40.72	44.85	6.045	12.41	315.9	136.7	2.687	68.53
#1	-.0003	-.0139	-.0003	.0239	.0003	.0000	.0055	1.909	.0001
#2	.0006	-.0058	-.0007	.0217	.0004	.0000	.0008	1.946	.0006
#3	-.0012	-.0129	-.0009	.0243	.0004	.0000	.0001	2.013	.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	.0536	.0003	.0030	.7678	.0006	.7131	.0050	<.0000
Stddev	.0003	.0003	.0026	.0019	.0321	.0005	.0257	.0002	.0002
%RSD	89.11	.4759	878.8	61.78	4.183	84.28	3.609	3.776	252.7
#1	.0004	.0533	.0027	.0048	.7324	.0002	.7233	.0050	.0002
#2	.0006	.0536	-.0025	.0032	.7760	.0004	.6838	.0048	-.0001
#3	.0000	.0539	.0006	.0011	.7951	.0011	.7322	.0052	-.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.218	.0011	.2690	.0002	.9879	.0012	.0024	.5108	<.0000
Stddev	.020	.0002	.0056	.0012	.0248	.0014	.0016	.0087	.0006
%RSD	1.622	13.92	2.067	569.4	2.511	120.9	67.81	1.707	1553.
#1	1.240	.0011	.2642	.0013	.9664	.0012	.0031	.5086	-.0001
#2	1.201	.0010	.2677	-.0010	.9822	-.0002	.0005	.5034	-.0006
#3	1.213	.0013	.2751	.0003	1.015	.0026	.0035	.5204	.0005
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-20-C Acquired: 12/5/2014 20:51:58 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0014	<.0000	.0000	<.0000	<.0000	.0005	.0402
Stddev	.0001	.0025	.0006	.0007	.0032	.0006	.0011
%RSD	4.527	170.0	2547.	35.04	23.70	112.0	2.628
#1	.0015	-.0041	.0004	-.0014	-.0122	.0011	.0392
#2	.0013	.0009	-.0007	-.0018	-.0170	.0003	.0401
#3	.0014	-.0012	.0004	-.0027	-.0110	.0001	.0413
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3946.0
Stddev	25.3
%RSD	.64149
#1	3930.2
#2	3975.2
#3	3932.5

Sample Name: CCV Acquired: 12/5/2014 20:55:52 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.063**	**49.41**	**5.355**	**5.032**	**4.880**	**5.011**	**5.294**	F **56.96**	**5.385**
Stddev	.005	.60	.052	.060	.092	.105	.049	.49	.048
%RSD	.5055	1.217	.9653	1.188	1.891	2.092	.9237	.8526	.8925
#1	1.064	49.01	5.388	4.983	4.775	4.903	5.324	57.16	5.417
#2	1.057	49.13	5.295	5.013	4.917	5.018	5.238	56.40	5.330
#3	1.068	50.10	5.381	5.099	4.948	5.112	5.321	57.30	5.409
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
Value								50.00	
Range								10.00%	

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F **5.519**	**5.454**	**5.325**	**50.66**	**50.91**	**4.995**	**52.16**	**5.100**	**1.074**
Stddev	.050	.029	.060	.64	.54	.056	.82	.072	.010
%RSD	.9136	.5330	1.126	1.261	1.057	1.126	1.566	1.409	.9696
#1	5.546	5.469	5.356	50.17	50.50	4.952	51.66	5.055	1.081
#2	5.461	5.421	5.256	50.43	50.71	4.974	51.73	5.062	1.062
#3	5.550	5.473	5.363	51.38	51.52	5.059	53.11	5.183	1.079
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	5.000								
Range	10.00%								

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**51.05**	F **5.533**	F **55.87**	F **5.512**	**52.33**	**1.056**	**1.057**	**5.002**	F **5.538**
Stddev	.45	.049	.51	.045	.50	.011	.013	.071	.049
%RSD	.8903	.8855	.9057	.8193	.9506	.9970	1.251	1.413	.8865
#1	50.65	5.560	56.17	5.534	52.70	1.065	1.067	4.952	5.561
#2	50.95	5.476	55.29	5.460	51.76	1.045	1.042	4.971	5.482
#3	51.54	5.562	56.16	5.542	52.52	1.059	1.062	5.083	5.572
Check ?	Chk Pass	Chk Fail	Chk Fail	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
Value		5.000	50.00	5.000					5.000
Range		10.00%	10.00%	10.00%					10.00%

Sample Name: CCV Acquired: 12/5/2014 20:55:52 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.035	5.430	5.018	F 1.118	5.310	5.105	5.426
Stddev	.076	.041	.060	.010	.043	.072	.046
%RSD	1.515	.7590	1.201	.8807	.8000	1.420	.8449
#1	5.022	5.470	4.968	1.123	5.334	5.066	5.452
#2	4.967	5.388	5.001	1.107	5.261	5.060	5.373
#3	5.117	5.433	5.085	1.125	5.335	5.189	5.452
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value				1.000			
Range				10.00%			

Int. Std.	Y_3710
Units	Cts/S
Avg	3932.6
Stddev	44.3
%RSD	1.1261
#1	3941.9
#2	3971.5
#3	3884.4

Sample Name: CCB Acquired: 12/5/2014 20:59:40 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	.0012	.0180	.0008	.0003	.0011	.0010	.0002
Stddev	.0008	.0024	.0005	.0019	.0002	.0000	.0018	.0005	.0002
%RSD	268.4	41.50	41.23	10.55	25.53	10.25	165.5	54.96	80.14
#1	.0006	-.0030	.0017	.0194	.0007	.0004	.0020	.0012	.0000
#2	-.0006	-.0072	.0007	.0188	.0008	.0003	.0023	.0014	.0003
#3	-.0010	-.0071	.0014	.0158	.0011	.0003	-.0010	.0004	.0002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0011	.0003	.0027	.0752	<.0000	.0057	.0002	.0001
Stddev	.0001	.0013	.0016	.0029	.0161	.0005	.0100	.0002	.0002
%RSD	80.78	118.8	463.4	106.0	21.42	191.9	176.4	86.65	259.1
#1	.0001	.0025	.0015	.0053	.0590	-.0005	.0162	.0000	.0001
#2	.0002	.0004	-.0015	.0031	.0912	-.0006	.0044	.0003	.0003
#3	.0000	.0003	.0010	-.0003	.0753	.0003	-.0037	.0004	-.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0003	.0024	.0008	.0052	<.0000	.0011	.0016	.0003
Stddev	.0058	.0002	.0011	.0002	.0029	.0009	.0006	.0078	.0004
%RSD	127.5	54.23	46.59	27.81	56.76	128.1	58.55	485.9	134.7
#1	.0008	.0005	.0012	.0009	.0084	-.0013	.0015	.0018	.0007
#2	-.0038	.0003	.0027	.0009	.0027	.0003	.0015	.0093	.0000
#3	-.0106	.0002	.0034	.0005	.0044	-.0011	.0004	-.0063	.0002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Sample Name: CCB Acquired: 12/5/2014 20:59:40 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	<.0000	.0003	<.0000	<.0000	.0015	.0002
Stddev	.0001	.0015	.0010	.0006	.0079	.0032	.0001
%RSD	19.80	93.73	296.9	32.84	50.70	214.9	65.45
#1	.0004	-.0026	.0014	-.0016	-.0247	.0027	.0004
#2	.0004	-.0023	.0001	-.0015	-.0103	-.0021	.0002
#3	.0003	.0001	-.0005	-.0026	-.0118	.0039	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_3710
Units	Cts/S
Avg	3979.9
Stddev	27.9
%RSD	.70148
#1	3950.9
#2	3982.1
#3	4006.6

Sample Name: 160-9422-B-21-C Acquired: 12/5/2014 21:03:38 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000**	**<.0000**	**<.0000**	**.1056**	**.0003**	**.0000**	**.0093**	**.5719**	**.0020**
Stddev	.0011	.0054	.0015	.0054	.0001	.0000	.0017	.0282	.0001
%RSD	4997.	86.83	10.43	5.080	14.94	81.06	18.63	4.939	4.060
#1	.0001	-.0046	-.0131	.1015	.0003	.0000	.0088	.5441	.0021
#2	.0011	-.0019	-.0145	.1116	.0004	.0000	.0112	.5710	.0019
#3	-.0011	-.0124	-.0162	.1036	.0004	.0001	.0078	.6005	.0019
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0099**	**7.077**	**.0174**	**.0140**	**13.81**	**.0150**	**.1149**	**.0018**	**.0027**
Stddev	.0005	.047	.0014	.0018	.05	.0007	.0079	.0002	.0002
%RSD	4.782	.6628	8.203	13.15	.3729	4.955	6.859	12.24	7.290
#1	.0094	7.028	.0166	.0161	13.75	.0142	.1169	.0018	.0025
#2	.0098	7.121	.0167	.0133	13.85	.0155	.1062	.0016	.0028
#3	.0104	7.083	.0191	.0126	13.83	.0155	.1215	.0021	.0029
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**60.44**	**.0024**	**33.32**	**.0027**	**9.432**	**.0692**	**<.0000**	**.2849**	**<.0000**
Stddev	.43	.0002	1.85	.0007	.527	.0071	.0012	.0043	.0002
%RSD	.7141	8.287	5.536	25.39	5.589	10.19	225.4	1.497	23.09
#1	60.03	.0022	31.54	.0034	8.910	.0619	-.0008	.2800	-.0006
#2	60.42	.0024	33.21	.0020	9.422	.0697	-.0017	.2878	-.0008
#3	60.89	.0026	35.22	.0028	9.964	.0760	.0008	.2869	-.0009
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-21-C Acquired: 12/5/2014 21:03:38 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	.0234	.0017	.0003	<.0000	.0004	.0304
Stddev	.0001	.0025	.0008	.0003	.0126	.0020	.0016
%RSD	15.22	10.88	45.77	95.30	460.7	497.6	5.128
#1	.0004	.0224	.0025	.0007	.0081	.0024	.0288
#2	.0004	.0263	.0009	.0001	.0002	-.0016	.0304
#3	.0005	.0216	.0017	.0003	-.0165	.0004	.0320
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3908.3
Stddev	27.9
%RSD	.71360
#1	3894.8
#2	3889.6
#3	3940.3

Sample Name: 160-9422-B-22-C Acquired: 12/5/2014 21:07:26 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	<.0000	<.0000	.1240	.0002	.0000	.0129	.4860	.0017
Stddev	.0005	.0078	.0009	.0049	.0001	.0000	.0006	.0087	.0001
%RSD	585.1	73.38	5.543	3.974	33.55	32.45	4.927	1.784	6.663
#1	.0000	-.0039	-.0168	.1296	.0001	.0001	.0126	.4760	.0017
#2	-.0004	-.0193	-.0153	.1218	.0002	.0000	.0125	.4916	.0015
#3	.0005	-.0088	-.0152	.1205	.0003	.0000	.0136	.4905	.0018
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0113	8.446	.0161	.0029	16.75	.0191	.1100	.0017	.0031
Stddev	.0001	.130	.0015	.0025	.28	.0010	.0027	.0003	.0001
%RSD	.5756	1.536	9.124	85.69	1.663	5.298	2.422	15.68	4.466
#1	.0113	8.422	.0167	.0045	16.61	.0202	.1088	.0014	.0031
#2	.0113	8.586	.0144	.0000	17.07	.0185	.1081	.0019	.0030
#3	.0114	8.330	.0172	.0041	16.57	.0184	.1130	.0019	.0033
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	74.71	.0024	37.62	.0024	10.47	.0766	<.0000	.3377	<.0000
Stddev	.99	.0001	.59	.0013	.17	.0013	.0012	.0081	.0005
%RSD	1.326	4.462	1.565	56.52	1.583	1.680	83.71	2.405	261.0
#1	74.19	.0024	36.94	.0035	10.29	.0758	-.0015	.3471	-.0007
#2	75.85	.0023	38.05	.0009	10.60	.0761	-.0002	.3339	-.0001
#3	74.09	.0025	37.86	.0027	10.52	.0781	-.0025	.3323	.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 160-9422-B-22-C Acquired: 12/5/2014 21:07:26 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment: DF=10

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	.0241	.0016	.0008	<.0000	.0016	.0246
Stddev	.0000	.0011	.0002	.0003	.0040	.0023	.0004
%RSD	11.65	4.429	11.85	33.88	9.694	145.5	1.639
#1	.0003	.0231	.0014	.0006	-.0458	.0036	.0241
#2	.0002	.0240	.0018	.0012	-.0405	.0020	.0249
#3	.0003	.0252	.0016	.0007	-.0379	-.0009	.0248
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3957.0
Stddev	69.8
%RSD	1.7638
#1	3964.5
#2	3883.8
#3	4022.7

Sample Name: MB Acquired: 12/5/2014 21:11:13 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	.0002	.0021	.0002	<.0000	.0009	<.0000	<.0000
Stddev	.0003	.0040	.0005	.0016	.0001	.0000	.0024	.0008	.0001
%RSD	81.95	62.71	248.1	74.82	36.54	45.93	264.7	63.61	277.8
#1	-.0003	-.0023	.0004	.0030	.0003	.0000	.0031	-.0004	-.0002
#2	-.0006	-.0103	.0005	.0003	.0002	.0000	.0012	-.0013	.0000
#3	-.0001	-.0067	-.0003	.0031	.0001	.0000	-.0016	-.0019	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0023	<.0000	.0003	.0764	<.0000	<.0000	.0000	<.0000
Stddev	.0002	.0003	.0012	.0020	.0121	.0005	.0064	.0005	.0002
%RSD	62.32	14.00	257.6	676.7	15.83	77.87	32.38	858600.	177.6
#1	-.0002	.0027	-.0013	.0025	.0696	-.0006	-.0143	-.0005	-.0002
#2	-.0005	.0020	.0009	-.0002	.0904	-.0011	-.0269	.0001	.0001
#3	-.0002	.0023	-.0010	-.0014	.0693	-.0002	-.0184	.0004	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0106	.0002	.0017	3.321	.0045	<.0000	.0001	.0015	.0005
Stddev	.0044	.0002	.0016	.009	.0016	.0003	.0015	.0040	.0005
%RSD	41.51	101.8	97.45	.2699	34.91	27.76	1963.	265.1	103.7
#1	.0131	.0000	.0021	3.314	.0032	-.0006	-.0015	.0060	.0008
#2	.0131	.0003	.0030	3.331	.0040	-.0011	.0014	-.0013	-.0001
#3	.0055	.0002	-.0001	3.317	.0063	-.0010	.0003	-.0002	.0008
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: MB Acquired: 12/5/2014 21:11:13 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	.0000	.0001	<.0000	.0013	.0027
Stddev	.0001	.0040	.0009	.0003	.0074	.0033	.0000
%RSD	404.7	488.5	2641.	220.0	29.43	265.0	1.483
#1	-.0001	.0032	-.0003	.0002	-.0322	.0051	.0027
#2	.0000	-.0008	-.0006	-.0002	-.0263	-.0010	.0027
#3	.0000	-.0049	.0010	.0003	-.0174	-.0003	.0027
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3985.9
Stddev	10.0
%RSD	.25104
#1	3986.4
#2	3975.7
#3	3995.7

Sample Name: LCS Acquired: 12/5/2014 21:15:06 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	.0000	.0058	.0002	<.0000	.0023	<.0000	<.0000
Stddev	.0002	.0060	.0016	.0029	.0000	.0001	.0022	.0007	.0001
%RSD	348.8	52.35	5990.	49.47	10.91	1201.	92.29	53.11	55.15
#1	-.0001	-.0181	.0008	.0054	.0003	.0001	.0034	-.0022	-.0002
#2	-.0002	-.0095	.0010	.0031	.0002	.0000	-.0001	-.0009	-.0002
#3	.0002	-.0066	-.0018	.0088	.0002	-.0001	.0038	-.0009	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0006	.0029	.0031	.0750	<.0000	.0018	.0001	<.0000
Stddev	.0001	.0011	.0004	.0007	.0113	.0007	.0143	.0002	.0002
%RSD	701.3	174.5	13.09	22.92	15.00	56.09	781.1	234.9	413.4
#1	.0001	-.0003	.0029	.0038	.0770	-.0021	-.0147	.0004	.0001
#2	-.0001	.0003	.0025	.0031	.0629	-.0009	.0102	-.0001	.0000
#3	-.0001	.0019	.0033	.0024	.0851	-.0008	.0100	.0000	-.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0040	.0001	.0006	3.297	.0019	<.0000	<.0000	.0017	.0002
Stddev	.0109	.0002	.0002	.010	.0021	.0010	.0005	.0050	.0004
%RSD	272.1	195.3	35.20	.3050	110.2	63.91	139.2	300.8	177.1
#1	.0166	.0004	.0007	3.305	.0038	-.0019	-.0001	.0040	-.0002
#2	-.0020	.0001	.0007	3.300	.0021	-.0023	-.0009	-.0041	.0007
#3	-.0026	-.0001	.0003	3.286	-.0003	-.0004	.0000	.0051	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LCS Acquired: 12/5/2014 21:15:06 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	<.0000	<.0000	<.0000	<.0000	.0021	.0024
Stddev	.0000	.0012	.0004	.0014	.0179	.0023	.0000
%RSD	85.65	50.17	101.9	94.42	136.1	107.9	1.744
#1	.0000	-.0036	-.0001	-.0027	.0066	.0032	.0024
#2	.0000	-.0021	-.0002	.0000	-.0282	.0036	.0023
#3	.0000	-.0013	-.0009	-.0018	-.0177	-.0005	.0024
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3993.4
Stddev	11.0
%RSD	.27435
#1	3990.1
#2	3984.5
#3	4005.6

Sample Name: LCSD Acquired: 12/5/2014 21:18:58 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	<.0000	<.0000	.0000	.0000	<.0000	<.0000	<.0000
Stddev	.0003	.0035	.0007	.0004	.0002	.0000	.0004	.0002	.0000
%RSD	70.72	53.42	203.5	81.28	1328.	1301.	34.81	16.84	65.40
#1	-.0002	-.0065	.0003	-.0002	.0000	.0000	-.0015	-.0016	-.0001
#2	-.0004	-.0099	-.0011	-.0008	-.0001	.0001	-.0007	-.0016	.0000
#3	-.0008	-.0030	-.0002	-.0003	.0002	.0000	-.0014	-.0012	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0006	.0016	.0025	.0469	.0001	<.0000	<.0000	<.0000
Stddev	.0001	.0008	.0011	.0020	.0163	.0002	.0047	.0002	.0002
%RSD	41.37	123.9	70.79	77.48	34.75	386.8	54.27	131.9	135.2
#1	-.0002	-.0001	.0006	.0021	.0281	-.0002	-.0137	-.0004	.0001
#2	-.0004	.0014	.0028	.0047	.0548	.0001	-.0045	-.0001	-.0002
#3	-.0002	.0006	.0014	.0008	.0576	.0003	-.0075	.0000	-.0004
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0031	<.0000	<.0000	3.141	.0014	.0004	<.0000	.0028	.0001
Stddev	.0079	.0002	.0003	.024	.0021	.0007	.0021	.0048	.0005
%RSD	249.6	698.4	444.0	.7769	155.3	152.4	262.3	170.3	405.2
#1	-.0038	.0001	.0002	3.162	.0024	.0009	-.0032	.0067	-.0002
#2	.0117	-.0003	.0000	3.147	.0028	.0007	.0006	-.0025	-.0001
#3	.0016	.0000	-.0004	3.114	-.0011	-.0003	.0002	.0042	.0006
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LCSD Acquired: 12/5/2014 21:18:58 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	.0001	.0002	<.0000	.0025	.0024
Stddev	.0001	.0026	.0006	.0006	.0085	.0042	.0001
%RSD	148.3	242.3	451.6	382.1	50.72	164.6	3.843
#1	-.0001	.0011	.0006	.0003	-.0263	-.0002	.0025
#2	-.0001	-.0003	-.0006	.0007	-.0143	.0005	.0023
#3	.0000	-.0039	.0004	-.0005	-.0098	.0073	.0024
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4120.2
Stddev	26.6
%RSD	.64580
#1	4097.0
#2	4114.4
#3	4149.3

Sample Name: 9216-A-1 Acquired: 12/5/2014 21:22:53 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	<.0000	.0021	.0001	<.0000	.0018	.0019	.0001
Stddev	.0005	.0065	.0007	.0016	.0001	.0000	.0002	.0005	.0001
%RSD	144.5	63.25	305.3	77.98	125.4	66.37	8.687	28.66	111.2
#1	-.0008	-.0116	-.0006	.0035	.0002	.0000	.0019	.0014	.0001
#2	.0002	-.0161	.0006	.0003	-.0001	.0000	.0016	.0018	.0000
#3	-.0004	-.0032	-.0007	.0024	.0002	.0000	.0019	.0024	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0008	.0028	<.0000	.0675	<.0000	.0105	<.0000	<.0000
Stddev	.0002	.0006	.0014	.0021	.0257	.0015	.0018	.0003	.0000
%RSD	235.6	70.68	51.85	314.2	38.08	158.5	17.08	114.0	32.80
#1	.0000	.0014	.0043	-.0003	.0614	-.0027	.0084	.0000	-.0001
#2	.0001	.0007	.0015	.0012	.0454	-.0004	.0115	-.0006	-.0001
#3	-.0003	.0003	.0026	-.0029	.0957	.0002	.0115	-.0002	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0036	.0002	<.0000	2.921	.0028	<.0000	<.0000	.0085	.0004
Stddev	.0126	.0000	.0003	.063	.0010	.0003	.0014	.0051	.0004
%RSD	349.7	29.94	78.02	2.144	34.95	35.74	125.3	60.37	86.06
#1	-.0094	.0002	-.0002	2.993	.0018	-.0007	-.0014	.0031	.0000
#2	.0045	.0001	-.0003	2.890	.0030	-.0011	.0004	.0134	.0006
#3	.0158	.0001	-.0008	2.879	.0037	-.0006	-.0023	.0090	.0006
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 9216-A-1 Acquired: 12/5/2014 21:22:53 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	<.0000	<.0000	<.0000	<.0000	.0020	.0023
Stddev	.0000	.0003	.0004	.0007	.0162	.0014	.0001
%RSD	12.55	27.15	78.90	269.1	231.1	71.26	5.901
#1	.0003	-.0012	.0000	.0005	-.0074	.0017	.0025
#2	.0004	-.0007	-.0006	-.0007	-.0230	.0007	.0023
#3	.0003	-.0009	-.0007	-.0005	.0093	.0035	.0022
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4109.3
Stddev	80.2
%RSD	1.9505
#1	4017.6
#2	4166.1
#3	4144.2

Sample Name: 9216-A-2 Acquired: 12/5/2014 21:26:48 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	<.0000	.0008	.0002	<.0000	<.0000	.0014	.0000
Stddev	.0009	.0055	.0005	.0042	.0001	.0000	.0025	.0002	.0001
%RSD	167.5	90.59	57.97	515.7	81.30	184.1	14050.	12.78	323.8
#1	.0005	.0003	-.0003	-.0040	.0000	.0000	.0010	.0016	.0000
#2	-.0010	-.0088	-.0013	.0037	.0001	.0000	-.0029	.0015	.0001
#3	-.0011	-.0096	-.0009	.0027	.0003	-.0001	.0018	.0012	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0010	.0025	.0018	.0661	<.0000	<.0000	<.0000	<.0000
Stddev	.0002	.0006	.0013	.0011	.0211	.0007	.0113	.0003	.0001
%RSD	111.8	63.72	53.70	59.01	31.98	36.87	492.2	268.9	60.65
#1	-.0004	.0017	.0037	.0025	.0891	-.0015	-.0141	.0001	-.0001
#2	.0000	.0004	.0027	.0024	.0617	-.0015	-.0012	.0001	-.0001
#3	-.0002	.0009	.0011	.0006	.0475	-.0027	.0084	-.0005	-.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0084	.0001	.0004	3.322	.0038	<.0000	.0002	.0359	.0002
Stddev	.0060	.0001	.0004	.025	.0035	.0013	.0016	.0102	.0004
%RSD	71.57	84.24	107.0	.7616	91.50	158.0	743.0	28.49	179.2
#1	.0100	.0001	.0008	3.299	.0076	-.0001	.0019	.0261	.0003
#2	.0018	.0000	.0000	3.349	.0031	.0000	-.0012	.0350	-.0002
#3	.0135	.0001	.0003	3.317	.0007	-.0023	-.0001	.0465	.0005
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 9216-A-2 Acquired: 12/5/2014 21:26:48 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0001	.0001	<.0000	<.0000	<.0000	.0024
Stddev	.0001	.0024	.0002	.0008	.0141	.0041	.0001
%RSD	43.80	3075.	424.9	65.98	86.32	380.3	5.178
#1	.0002	.0028	.0003	-.0021	-.0084	.0030	.0023
#2	.0001	-.0008	-.0001	-.0007	-.0327	-.0053	.0024
#3	.0001	-.0018	.0000	-.0007	-.0080	-.0010	.0025
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3947.8
Stddev	18.0
%RSD	.45504
#1	3965.7
#2	3929.7
#3	3948.0

Sample Name: 9216-A-3 Acquired: 12/5/2014 21:30:43 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0007	.0004	.0006	.0001	<.0000	.0019	<.0000	<.0000
Stddev	.0005	.0064	.0005	.0019	.0001	.0000	.0007	.0004	.0000
%RSD	97.44	934.5	135.1	315.3	171.3	1420.	35.05	73.11	67.92
#1	.0000	.0071	.0009	.0026	.0001	.0000	.0023	-.0009	.0000
#2	-.0009	-.0058	-.0002	.0004	.0000	.0000	.0023	-.0003	-.0001
#3	-.0006	.0007	.0005	-.0012	.0002	.0000	.0011	-.0003	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0001	.0023	.0000	.0546	<.0000	<.0000	<.0000	.0000
Stddev	.0002	.0007	.0008	.0011	.0032	.0003	.0100	.0001	.0002
%RSD	123.8	774.0	33.14	5467.	5.790	21.55	155.1	202.1	394.1
#1	-.0003	.0004	.0032	.0004	.0513	-.0012	.0021	-.0002	-.0001
#2	.0001	-.0007	.0017	.0009	.0576	-.0014	-.0175	.0000	.0001
#3	-.0002	.0006	.0021	-.0013	.0548	-.0018	-.0041	.0000	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0001	.0001	3.378	.0050	.0018	.0013	.0106	.0004
Stddev	.0095	.0003	.0011	.028	.0019	.0014	.0014	.0027	.0004
%RSD	173.3	277.7	1148.	.8197	38.34	80.53	113.7	25.29	102.7
#1	.0005	.0001	.0012	3.356	.0054	.0024	.0024	.0137	-.0001
#2	-.0164	-.0002	-.0001	3.409	.0030	.0001	-.0004	.0089	.0007
#3	-.0005	.0004	-.0009	3.369	.0068	.0028	.0018	.0092	.0005
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 9216-A-3 Acquired: 12/5/2014 21:30:43 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0002	.0006	.0001	<.0000	.0016	.0026
Stddev	.0000	.0019	.0008	.0004	.0066	.0038	.0002
%RSD	407.0	1242.	136.4	609.2	53.25	245.8	6.339
#1	.0001	-.0008	.0015	-.0003	-.0171	.0000	.0024
#2	.0000	-.0011	.0004	.0004	-.0049	.0059	.0026
#3	.0000	.0024	-.0001	.0001	-.0154	-.0013	.0028
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4037.9
Stddev	20.5
%RSD	.50887
#1	4055.5
#2	4015.3
#3	4043.0

Sample Name: MB257FE Acquired: 12/5/2014 21:34:37 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	<.0000	.0021	.0015	<.0000	.0003	.0009	.0000
Stddev	.0001	.0061	.0008	.0032	.0001	.0001	.0020	.0003	.0001
%RSD	64.15	118.8	108.8	153.0	3.471	414.8	570.3	37.24	7081.
#1	-.0002	-.0105	-.0014	.0056	.0015	-.0001	-.0008	.0012	.0001
#2	-.0004	.0015	-.0008	.0015	.0014	.0000	.0026	.0005	.0001
#3	-.0001	-.0062	.0001	-.0008	.0015	.0000	-.0008	.0010	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0010	.0009	1.882	.0355	<.0000	.0046	.0001	<.0000
Stddev	.0001	.0004	.0008	.009	.0115	.0016	.0049	.0002	.0001
%RSD	260.1	40.47	84.41	.4642	32.39	157.3	106.5	170.0	79.57
#1	-.0002	.0005	.0018	1.890	.0454	-.0002	.0090	.0003	-.0001
#2	.0000	.0011	.0003	1.884	.0229	-.0028	-.0008	.0003	-.0001
#3	.0001	.0012	.0007	1.873	.0383	.0000	.0057	-.0001	-.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0061	.0003	.0012	.0016	.0068	<.0000	<.0000	.0040	.0001
Stddev	.0023	.0001	.0005	.0007	.0017	.0012	.0003	.0032	.0002
%RSD	37.82	46.97	41.77	45.93	24.69	3244.	45.93	81.69	201.8
#1	.0085	.0004	.0013	.0020	.0068	.0004	-.0006	.0002	.0000
#2	.0057	.0003	.0007	.0021	.0051	-.0014	-.0004	.0057	.0003
#3	.0040	.0001	.0017	.0008	.0085	.0009	-.0011	.0060	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: MB257FE Acquired: 12/5/2014 21:34:37 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	<.0000	.0024	<.0000	<.0000	.0004	.0025
Stddev	.0001	.0031	.0007	.0013	.0101	.0006	.0002
%RSD	224.8	181.2	29.24	184.1	40.46	145.8	6.508
#1	.0000	-.0053	.0026	.0008	-.0134	.0011	.0023
#2	.0000	.0006	.0016	-.0014	-.0322	.0003	.0025
#3	.0002	-.0005	.0030	-.0015	-.0294	-.0001	.0026
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3997.2
Stddev	21.8
%RSD	.54616
#1	3982.3
#2	3987.1
#3	4022.3

Sample Name: LCS257FE Acquired: 12/5/2014 21:38:32 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	.0002	<.0000	.0002	.0000	<.0000	.0001	<.0000
Stddev	.0007	.0094	.0006	.0012	.0002	.0000	.0025	.0003	.0001
%RSD	345.0	916.7	267.3	93.55	144.6	152.1	428.0	224.5	191.2
#1	-.0010	.0084	-.0004	-.0025	.0000	.0000	-.0018	.0003	.0001
#2	.0004	-.0104	.0007	-.0013	.0004	.0000	.0023	.0004	-.0001
#3	.0000	-.0010	.0004	-.0001	.0000	.0000	-.0023	-.0002	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0017	.0012	1.950	.0318	<.0000	<.0000	.0002	<.0000
Stddev	.0002	.0011	.0008	.017	.0132	.0004	.0026	.0003	.0001
%RSD	227.0	62.78	62.52	.8833	41.64	148.8	42.36	132.5	404.8
#1	-.0003	.0028	.0010	1.946	.0185	.0001	-.0035	.0003	.0000
#2	-.0002	.0007	.0006	1.968	.0320	-.0002	-.0087	-.0001	-.0001
#3	.0001	.0015	.0021	1.934	.0449	-.0007	-.0061	.0004	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0003	<.0000	.0012	.0016	.0015	.0005	.0049	<.0000
Stddev	.0032	.0002	.0004	.0011	.0009	.0007	.0017	.0068	.0003
%RSD	124.4	69.31	358.1	93.17	59.09	45.02	354.6	139.8	1493.
#1	-.0005	.0002	.0001	.0002	.0005	.0019	-.0009	.0049	.0003
#2	-.0010	.0003	.0002	.0024	.0022	.0007	.0023	-.0020	.0000
#3	-.0063	.0006	-.0006	.0010	.0020	.0018	.0000	.0117	-.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LCS257FE Acquired: 12/5/2014 21:38:32 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0011	.0017	.0007	.0025	.0029	.0025
Stddev	.0001	.0021	.0004	.0010	.0176	.0024	.0001
%RSD	252.5	185.9	24.38	131.6	712.2	83.41	3.312
#1	.0000	-.0013	.0022	.0019	.0105	.0056	.0024
#2	.0000	.0027	.0015	.0001	-.0177	.0017	.0026
#3	-.0001	.0020	.0014	.0002	.0146	.0013	.0024
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4138.5
Stddev	27.0
%RSD	.65314
#1	4113.5
#2	4134.9
#3	4167.2

Sample Name: CCV Acquired: 12/5/2014 21:42:28 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.072**	**49.95**	F **5.552**	**5.109**	**5.030**	**5.155**	**5.493**	F **59.18**	F **5.571**
Stddev	.009	.45	.051	.047	.026	.057	.057	.54	.055
%RSD	.8209	.8974	.9196	.9225	.5254	1.110	1.037	.9119	.9839
#1	1.064	49.82	5.496	5.104	5.000	5.089	5.432	58.59	5.510
#2	1.082	50.45	5.597	5.158	5.045	5.185	5.545	59.66	5.618
#3	1.070	49.58	5.563	5.064	5.046	5.191	5.503	59.29	5.584
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Fail
Value			5.000					50.00	5.000
Range			10.00%					10.00%	10.00%

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F **5.721**	**5.463**	F **5.515**	**51.18**	**51.33**	**5.033**	**53.55**	**5.181**	F **1.106**
Stddev	.056	.043	.050	.50	.50	.049	.39	.044	.012
%RSD	.9706	.7801	.9095	.9825	.9678	.9676	.7365	.8524	1.089
#1	5.660	5.415	5.461	50.96	51.27	5.038	53.19	5.162	1.093
#2	5.769	5.498	5.560	51.75	51.86	5.079	53.98	5.231	1.116
#3	5.734	5.476	5.522	50.82	50.87	4.982	53.49	5.149	1.110
Check ?	Chk Fail	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
Value	5.000		5.000						1.000
Range	10.00%		10.00%						10.00%

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**51.86**	F **5.723**	F **58.11**	F **5.691**	**54.18**	**1.100**	**1.095**	**5.088**	F **5.723**
Stddev	.59	.056	.56	.055	.51	.009	.010	.053	.062
%RSD	1.129	.9802	.9567	.9724	.9449	.8534	.8766	1.038	1.077
#1	51.90	5.662	57.51	5.632	53.62	1.089	1.085	5.061	5.656
#2	52.43	5.772	58.60	5.741	54.62	1.103	1.104	5.149	5.777
#3	51.26	5.736	58.21	5.700	54.29	1.107	1.096	5.053	5.737
Check ?	Chk Pass	Chk Fail	Chk Fail	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
Value		5.000	50.00	5.000					5.000
Range		10.00%	10.00%	10.00%					10.00%

Sample Name: CCV Acquired: 12/5/2014 21:42:28 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.094	5.479	5.080	F 1.156	5.326	5.198	F 5.625
Stddev	.118	.030	.049	.009	.042	.043	.057
%RSD	2.317	.5489	.9583	.7716	.7891	.8230	1.017
#1	4.969	5.446	5.065	1.146	5.278	5.165	5.563
#2	5.204	5.506	5.134	1.164	5.346	5.246	5.676
#3	5.107	5.485	5.041	1.159	5.355	5.183	5.637
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Fail
Value				1.000			5.000
Range				10.00%			10.00%

Int. Std.	Y_3710
Units	Cts/S
Avg	3838.8
Stddev	42.2
%RSD	1.0985
#1	3887.2
#2	3809.6
#3	3819.7

Sample Name: CCB Acquired: 12/5/2014 21:46:16 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0006**	**<.0000**	**<.0000**	**.0136**	**.0004**	**.0004**	**.0004**	**<.0000**	**.0001**
Stddev	.0004	.0010	.0006	.0039	.0001	.0000	.0016	.0008	.0002
%RSD	63.80	123.4	634.5	29.03	22.81	5.638	457.1	73.68	143.4
#1	.0003	-.0006	-.0003	.0176	.0004	.0004	.0022	-.0002	.0003
#2	.0005	.0001	.0006	.0134	.0005	.0004	-.0009	-.0013	.0000
#3	.0010	-.0020	-.0005	.0097	.0003	.0004	-.0002	-.0018	.0000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**<.0000**	**.0012**	**.0003**	**.0033**	**.0654**	**<.0000**	**<.0000**	**.0003**	**.0001**
Stddev	.0001	.0008	.0018	.0004	.0237	.0007	.0102	.0001	.0002
%RSD	407.6	66.66	646.3	12.28	36.16	105.0	860.6	42.73	189.2
#1	-.0001	.0014	.0015	.0037	.0771	-.0014	.0067	.0002	.0003
#2	.0001	.0019	.0012	.0029	.0809	-.0007	-.0127	.0004	-.0001
#3	-.0001	.0003	-.0018	.0032	.0382	.0000	.0024	.0004	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**<.0000**	**.0005**	**.0019**	**.0012**	**.0038**	**.0001**	**<.0000**	**.0023**	**.0004**
Stddev	.0064	.0002	.0016	.0006	.0021	.0005	.0027	.0047	.0003
%RSD	571.2	46.92	82.61	47.69	56.49	943.6	198.6	202.6	81.29
#1	.0054	.0007	.0036	.0017	.0053	.0005	.0004	.0050	.0007
#2	-.0013	.0004	.0018	.0015	.0046	-.0005	-.0044	-.0031	.0001
#3	-.0074	.0003	.0004	.0006	.0013	.0002	.0000	.0051	.0004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Sample Name: CCB Acquired: 12/5/2014 21:46:16 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	<.0000	.0002	<.0000	<.0000	.0012	.0003
Stddev	.0001	.0016	.0002	.0008	.0106	.0015	.0001
%RSD	15.06	139.1	140.9	61.22	57.04	121.3	41.50
#1	.0004	-.0020	.0001	-.0008	-.0111	.0029	.0004
#2	.0004	-.0022	.0000	-.0022	-.0140	.0009	.0003
#3	.0003	.0007	.0004	-.0008	-.0308	.0000	.0002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_3710
Units	Cts/S
Avg	3967.8
Stddev	5.0
%RSD	.12598
#1	3973.5
#2	3965.7
#3	3964.3

Sample Name: LCSD257FE Acquired: 12/5/2014 21:50:12 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**<.0000**	**<.0000**	**.0038**	**.0003**	**.0001**	**.0004**	**.0005**	**.0000**
Stddev	.0004	.0093	.0009	.0016	.0002	.0000	.0011	.0004	.0001
%RSD	718.0	218.9	216.8	43.07	56.20	10.47	244.3	96.71	1152.
#1	.0001	.0063	.0002	.0050	.0005	.0001	.0014	.0005	.0000
#2	-.0004	-.0110	-.0015	.0044	.0004	.0001	.0006	.0009	.0001
#3	.0005	-.0080	.0000	.0019	.0001	.0001	-.0007	.0000	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**<.0000**	**.0014**	**.0003**	**1.841**	**.0526**	**<.0000**	**.0024**	**<.0000**	**<.0000**
Stddev	.0001	.0006	.0011	.012	.0136	.0021	.0099	.0003	.0001
%RSD	37.93	47.22	396.5	.6238	25.86	398.7	410.3	580.8	165.6
#1	-.0003	.0020	.0014	1.828	.0543	-.0014	.0123	-.0003	.0000
#2	-.0002	.0008	-.0007	1.848	.0383	.0019	-.0076	-.0001	-.0001
#3	-.0001	.0012	.0001	1.848	.0653	-.0021	.0025	.0003	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**<.0000**	**.0002**	**.0008**	**.0009**	**.0039**	**.0009**	**<.0000**	**.0052**	**.0003**
Stddev	.0086	.0001	.0006	.0007	.0019	.0008	.0012	.0017	.0002
%RSD	77.19	39.66	79.21	86.22	49.93	83.85	52.97	33.51	85.23
#1	-.0151	.0002	.0008	.0001	.0058	.0000	-.0014	.0071	.0003
#2	-.0013	.0002	.0001	.0009	.0039	.0012	-.0037	.0044	.0001
#3	-.0170	.0003	.0014	.0016	.0019	.0015	-.0018	.0040	.0005
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LCSD257FE Acquired: 12/5/2014 21:50:12 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0029	.0015	<.0000	<.0000	.0024	.0024
Stddev	.0000	.0022	.0007	.0004	.0077	.0017	.0002
%RSD	220.4	76.17	45.75	42.31	49.61	72.75	8.432
#1	.0000	.0049	.0023	-.0006	-.0236	.0028	.0023
#2	.0001	.0006	.0011	-.0013	-.0150	.0039	.0023
#3	.0000	.0032	.0011	-.0007	-.0082	.0005	.0027
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3898.0
Stddev	45.4
%RSD	1.1638
#1	3935.6
#2	3910.7
#3	3847.6

Sample Name: 9275-A-2FE Acquired: 12/5/2014 21:54:07 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**.0010**	**<.0000**	**.0049**	**.0000**	**<.0000**	**.0019**	**<.0000**	**.0000**
Stddev	.0001	.0002	.0005	.0025	.0002	.0000	.0016	.0004	.0001
%RSD	67.42	21.72	173.4	50.54	436.7	21.44	86.72	27.71	296.8
#1	.0002	.0011	.0003	.0021	.0001	.0000	.0029	-.0016	-.0001
#2	.0001	.0007	-.0006	.0057	-.0002	.0000	.0027	-.0009	.0001
#3	.0001	.0011	-.0006	.0069	.0002	.0000	.0000	-.0013	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**<.0000**	**.0013**	**.0006**	**.3777**	**.0403**	**.0002**	**<.0000**	**<.0000**	**.0002**
Stddev	.0001	.0009	.0024	.0031	.0374	.0011	.0049	.0002	.0001
%RSD	110.1	64.93	391.4	.8144	92.63	483.5	161.5	182.4	49.80
#1	-.0002	.0004	.0032	.3804	.0459	.0011	.0026	.0000	.0001
#2	-.0001	.0021	.0004	.3783	.0747	.0005	-.0060	.0000	.0002
#3	.0000	.0015	-.0017	.3744	.0005	-.0010	-.0057	-.0004	.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**<.0000**	**.0003**	**.0010**	**.0010**	**.0076**	**.0002**	**.0010**	**.0032**	**.0006**
Stddev	.0060	.0001	.0005	.0007	.0024	.0018	.0003	.0064	.0003
%RSD	252.7	41.27	52.80	72.43	31.92	812.4	32.87	204.2	56.98
#1	.0044	.0002	.0015	.0019	.0075	-.0001	.0010	.0087	.0008
#2	-.0044	.0004	.0010	.0005	.0100	-.0014	.0013	-.0039	.0007
#3	-.0071	.0003	.0005	.0007	.0052	.0022	.0007	.0047	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 9275-A-2FE Acquired: 12/5/2014 21:54:07 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0015	.0031	<.0000	<.0000	.0026	.0025
Stddev	.0000	.0021	.0003	.0010	.0125	.0002	.0002
%RSD	249.6	138.1	10.92	291.0	266.3	5.918	6.498
#1	.0000	.0008	.0031	-.0002	-.0116	.0025	.0023
#2	.0000	.0039	.0027	-.0014	-.0123	.0025	.0025
#3	.0000	-.0001	.0034	.0005	.0098	.0027	.0026
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4106.3
Stddev	22.1
%RSD	.53906
#1	4128.0
#2	4107.2
#3	4083.8

Sample Name: 9275-A-3FE Acquired: 12/5/2014 21:58:03 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	.0004	.0009	.0002	<.0000	.0006	.0001	<.0000
Stddev	.0004	.0091	.0006	.0013	.0001	.0001	.0025	.0006	.0000
%RSD	63.85	149.0	156.8	146.1	53.52	386.1	447.5	568.5	224.7
#1	-.0009	-.0035	.0010	.0018	.0004	-.0001	.0004	-.0004	.0000
#2	-.0008	-.0162	-.0003	-.0006	.0001	.0000	-.0019	-.0001	.0000
#3	-.0002	.0014	.0005	.0015	.0002	.0000	.0032	.0008	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0012	.0007	2.169	.0479	<.0000	<.0000	.0003	<.0000
Stddev	.0003	.0005	.0009	.006	.0179	.0006	.0026	.0002	.0002
%RSD	137.2	40.38	122.0	.2692	37.36	31.83	34.79	68.41	221.7
#1	-.0004	.0010	.0017	2.164	.0504	-.0026	-.0106	.0003	.0001
#2	.0001	.0018	.0001	2.168	.0288	-.0015	-.0063	.0001	-.0003
#3	-.0002	.0009	.0004	2.176	.0643	-.0017	-.0059	.0005	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0003	.0003	.0002	.0028	.0000	<.0000	<.0000	.0000
Stddev	.0035	.0001	.0005	.0005	.0018	.0007	.0011	.0051	.0002
%RSD	99.79	41.19	199.6	194.6	63.55	1805.	475.1	685.9	768.1
#1	-.0072	.0002	.0007	.0004	.0048	.0005	.0009	-.0064	.0000
#2	-.0002	.0004	.0004	.0007	.0020	-.0007	-.0003	.0032	.0002
#3	-.0033	.0002	-.0003	-.0003	.0015	.0004	-.0014	.0010	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 9275-A-3FE Acquired: 12/5/2014 21:58:03 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0013	.0099	.0002	<.0000	.0017	.0025
Stddev	.0001	.0010	.0010	.0009	.0078	.0027	.0001
%RSD	300.2	75.18	9.820	377.6	87.71	158.3	3.747
#1	-.0002	.0002	.0101	.0012	-.0179	.0007	.0026
#2	.0000	.0016	.0089	.0000	-.0056	.0048	.0025
#3	.0001	.0021	.0108	-.0005	-.0033	-.0003	.0024
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3995.3
Stddev	26.8
%RSD	.67135
#1	3965.1
#2	4004.3
#3	4016.4

Sample Name: MB258NI Acquired: 12/5/2014 22:01:57 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000**	**<.0000**	**.0003**	**.0011**	**.0002**	**<.0000**	**.0014**	**<.0000**	**<.0000**
Stddev	.0003	.0069	.0008	.0027	.0001	.0000	.0002	.0002	.0001
%RSD	545.8	878.0	312.5	251.3	29.92	199.7	16.01	30.95	51.81
#1	.0001	.0066	.0012	-.0018	.0003	-.0001	.0012	-.0007	-.0003
#2	.0003	-.0018	-.0001	.0036	.0002	.0000	.0016	-.0011	-.0003
#3	-.0002	-.0071	-.0003	.0015	.0002	.0000	.0015	-.0006	-.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**<.0000**	**.0010**	**.0049**	**.0008**	**.0491**	**<.0000**	**.0013**	**<.0000**	**<.0000**
Stddev	.0002	.0009	.0003	.0010	.0330	.0012	.0060	.0003	.0003
%RSD	116.9	90.92	5.429	125.1	67.18	148.2	443.2	105.1	136.5
#1	.0001	.0017	.0047	.0017	.0871	-.0007	.0067	.0001	.0001
#2	-.0003	.0012	.0052	.0010	.0274	.0003	.0024	-.0005	-.0005
#3	-.0003	.0000	.0049	-.0003	.0329	-.0020	-.0051	-.0004	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**<.0000**	**.2718**	**.0035**	**.0004**	**.0022**	**.0012**	**<.0000**	**.0018**	**.0005**
Stddev	.0060	.0018	.0005	.0006	.0023	.0023	.0024	.0033	.0001
%RSD	148.1	.6709	13.34	173.1	106.2	191.5	179.7	184.1	25.05
#1	-.0110	.2721	.0040	.0004	.0022	.0039	-.0003	.0056	.0005
#2	-.0004	.2735	.0034	-.0003	.0045	-.0002	-.0042	.0001	.0006
#3	-.0008	.2699	.0031	.0010	-.0001	.0000	.0004	-.0003	.0004
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: MB258NI Acquired: 12/5/2014 22:01:57 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0002	.0002	<.0000	<.0000	.0020	.0045
Stddev	.0000	.0020	.0008	.0012	.0182	.0014	.0002
%RSD	102.3	908.3	387.1	222.9	67.74	68.31	3.735
#1	.0000	-.0015	-.0003	.0005	-.0435	.0017	.0047
#2	-.0001	-.0002	.0012	-.0003	-.0074	.0008	.0044
#3	.0000	.0023	-.0002	-.0019	-.0298	.0035	.0045
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3852.3
Stddev	31.1
%RSD	.80791
#1	3847.7
#2	3823.7
#3	3885.4

Sample Name: LCS258NI Acquired: 12/5/2014 22:05:51 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	<.0000	.0036	.0002	<.0000	.0016	.0036	<.0000
Stddev	.0004	.0069	.0005	.0030	.0002	.0001	.0016	.0010	.0001
%RSD	239.4	373.5	1237.	83.80	85.82	156.0	100.6	26.43	125.9
#1	.0003	-.0090	-.0004	.0001	.0004	.0000	.0019	.0047	-.0001
#2	-.0003	-.0013	.0005	.0051	.0001	-.0001	.0029	.0028	-.0003
#3	-.0005	.0048	-.0002	.0057	.0001	.0000	-.0002	.0035	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0011	.0044	.0054	.0379	<.0000	<.0000	<.0000	<.0000
Stddev	.0001	.0010	.0020	.0020	.0143	.0006	.0069	.0001	.0003
%RSD	65.67	89.47	46.11	37.61	37.72	40.78	472.9	170.6	322.3
#1	-.0001	.0016	.0048	.0078	.0390	-.0020	-.0088	.0000	-.0003
#2	.0000	.0017	.0063	.0042	.0230	-.0015	.0048	.0000	-.0003
#3	-.0002	.0000	.0022	.0043	.0515	-.0008	-.0003	-.0001	.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.2584	.0036	.0006	.0018	.0010	.0004	<.0000	<.0000
Stddev	.0075	.0024	.0008	.0002	.0004	.0003	.0013	.0056	.0001
%RSD	53.95	.9104	21.89	35.60	21.39	25.27	291.8	213.3	282.6
#1	-.0220	.2605	.0036	.0004	.0017	.0013	.0014	-.0034	.0001
#2	-.0072	.2559	.0028	.0007	.0015	.0010	.0010	.0033	-.0002
#3	-.0126	.2588	.0044	.0008	.0022	.0008	-.0010	-.0079	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LCS258NI Acquired: 12/5/2014 22:05:51 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0001	.0003	.0002	<.0000	.0004	.0043
Stddev	.0000	.0042	.0012	.0011	.0106	.0057	.0001
%RSD	174.0	5100.	399.2	552.4	480.5	1535.	1.768
#1	-.0001	.0011	.0008	-.0009	-.0132	.0061	.0043
#2	.0000	.0037	-.0010	.0013	-.0013	.0002	.0043
#3	.0000	-.0045	.0011	.0002	.0079	-.0052	.0044
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3934.0
Stddev	14.1
%RSD	.35965
#1	3917.7
#2	3942.1
#3	3942.3

Sample Name: LCSD258NI Acquired: 12/5/2014 22:09:46 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0026	<.0000	.0007	.0002	<.0000	<.0000	<.0000	<.0000
Stddev	.0004	.0064	.0009	.0026	.0001	.0000	.0025	.0005	.0001
%RSD	71.09	247.2	104.5	384.2	23.84	207.6	132.3	35.95	48.51
#1	-.0011	-.0048	-.0016	-.0019	.0002	.0000	-.0032	-.0015	-.0001
#2	-.0004	.0059	-.0013	.0033	.0003	.0000	.0010	-.0020	-.0004
#3	-.0003	.0066	.0002	.0006	.0002	-.0001	-.0035	-.0009	-.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	.0001	<.0000	.0469	<.0000	<.0000	<.0000	<.0000
Stddev	.0002	.0008	.0011	.0023	.0099	.0005	.0174	.0002	.0001
%RSD	315.3	22680.	794.5	176.8	21.13	66.51	236.5	63.34	376.7
#1	.0001	.0005	.0005	-.0040	.0360	-.0002	.0111	-.0005	.0001
#2	-.0001	-.0009	.0010	-.0006	.0494	-.0009	-.0235	-.0001	.0000
#3	-.0002	.0004	-.0011	.0006	.0554	-.0013	-.0096	-.0002	-.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0044	.2480	.0039	.0002	.0012	.0003	.0001	.0030	.0003
Stddev	.0082	.0010	.0005	.0002	.0006	.0006	.0022	.0021	.0001
%RSD	186.5	.3938	13.20	65.57	49.19	191.4	1959.	67.48	44.88
#1	.0023	.2474	.0037	.0001	.0012	-.0003	.0015	.0008	.0003
#2	.0134	.2475	.0046	.0002	.0007	.0008	-.0024	.0036	.0002
#3	-.0026	.2491	.0036	.0004	.0019	.0004	.0012	.0048	.0004
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: LCSD258NI Acquired: 12/5/2014 22:09:46 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	<.0000	.0004	<.0000	.0025	.0039
Stddev	.0001	.0039	.0001	.0003	.0167	.0022	.0001
%RSD	540.3	113.1	29.29	77.34	120.1	89.72	3.665
#1	.0001	.0005	-.0001	.0006	-.0318	.0039	.0040
#2	-.0001	-.0074	-.0002	.0004	.0014	.0037	.0039
#3	-.0001	-.0035	-.0002	.0001	-.0114	-.0001	.0038
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	4039.3
Stddev	29.1
%RSD	.72137
#1	4066.5
#2	4043.0
#3	4008.6

Sample Name: 9275-A-2NI Acquired: 12/5/2014 22:13:40 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0002**	**<.0000**	**<.0000**	**<.0000**	**.0004**	**.0000**	**.0029**	**.0005**	**.0001**
Stddev	.0005	.0043	.0008	.0024	.0001	.0000	.0032	.0004	.0001
%RSD	257.8	165.0	90.01	2524.	20.25	115.4	108.9	68.31	68.28
#1	.0007	-.0069	-.0008	-.0024	.0004	.0001	.0066	.0009	.0002
#2	-.0002	-.0024	-.0002	.0024	.0003	.0000	.0009	.0005	.0001
#3	.0001	.0016	-.0018	-.0003	.0005	.0000	.0012	.0002	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**<.0000**	**.0023**	**.0029**	**.0079**	**.0414**	**<.0000**	**<.0000**	**<.0000**	**.0000**
Stddev	.0001	.0004	.0019	.0006	.0082	.0007	.0033	.0004	.0001
%RSD	67.40	16.63	64.37	7.459	19.77	53.00	40.40	355.1	2346.
#1	-.0001	.0019	.0048	.0079	.0416	-.0017	-.0058	-.0005	-.0001
#2	-.0001	.0024	.0010	.0085	.0331	-.0019	-.0119	.0003	.0000
#3	-.0003	.0026	.0029	.0074	.0494	-.0006	-.0067	-.0001	.0001
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**<.0000**	**.0104**	**<.0000**	**.0000**	**<.0000**	**<.0000**	**<.0000**	**.0001**	**.0002**
Stddev	.0093	.0001	.0009	.0003	.0039	.0002	.0007	.0042	.0000
%RSD	188.5	.6578	504.4	760.9	269.6	93.83	316.1	7799.	9.704
#1	.0018	.0103	.0001	.0003	-.0031	.0000	.0005	.0037	.0002
#2	-.0010	.0105	.0006	-.0003	.0030	-.0002	-.0008	-.0045	.0002
#3	-.0156	.0105	-.0013	.0002	-.0042	-.0003	-.0004	.0010	.0002
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 9275-A-2NI Acquired: 12/5/2014 22:13:40 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0050	.0000	<.0000	<.0000	.0022	.0027
Stddev	.0001	.0022	.0004	.0014	.0077	.0012	.0000
%RSD	726.2	44.16	1124.	48.93	39.88	56.04	.8025
#1	.0001	.0025	-.0004	-.0020	-.0106	.0033	.0027
#2	-.0001	.0062	.0001	-.0020	-.0227	.0009	.0027
#3	.0001	.0064	.0004	-.0044	-.0250	.0023	.0028
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3979.2
Stddev	31.1
%RSD	.78031
#1	4014.7
#2	3965.7
#3	3957.2

Sample Name: 9275-A-3NI Acquired: 12/5/2014 22:17:34 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	<.0000	.0059	.0002	<.0000	<.0000	<.0000	<.0000
Stddev	.0004	.0027	.0014	.0023	.0001	.0000	.0015	.0006	.0001
%RSD	152.4	104.8	247.4	38.47	46.76	48.15	77.19	69.58	45.46
#1	-.0005	-.0049	-.0005	.0033	.0001	.0000	-.0004	-.0005	-.0002
#2	-.0005	-.0032	-.0020	.0073	.0002	.0000	-.0020	-.0005	-.0002
#3	.0002	.0004	.0008	.0072	.0003	.0000	-.0034	-.0015	-.0003
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.0012	.0067	.0004	.0544	<.0000	<.0000	<.0000	<.0000
Stddev	.0001	.0006	.0012	.0006	.0095	.0003	.0152	.0002	.0003
%RSD	88.36	49.21	18.06	140.7	17.44	21.69	97.16	110.7	123.4
#1	-.0003	.0011	.0081	.0011	.0603	-.0017	-.0210	.0001	-.0001
#2	-.0001	.0018	.0058	.0001	.0593	-.0016	.0015	-.0004	-.0005
#3	-.0001	.0007	.0063	.0000	.0434	-.0011	-.0273	-.0003	.0000
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	.2578	.0029	.0013	<.0000	<.0000	.0000	<.0000	.0004
Stddev	.0027	.0033	.0008	.0003	.0009	.0005	.0005	.0016	.0005
%RSD	41.66	1.265	29.16	25.91	223.3	120.4	1159.	228.6	143.8
#1	-.0059	.2559	.0024	.0013	.0006	-.0010	.0006	-.0009	-.0003
#2	-.0096	.2559	.0039	.0017	-.0007	-.0004	-.0005	.0010	.0007
#3	-.0042	.2615	.0024	.0010	-.0011	.0001	.0001	-.0023	.0007
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: 9275-A-3NI Acquired: 12/5/2014 22:17:34 Type: Unk
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	<.0000	<.0000	.0000	<.0000	<.0000	.0014	.0041
Stddev	.0001	.0026	.0005	.0011	.0100	.0021	.0001
%RSD	100.9	359.9	2884.	49.56	63.60	152.9	2.465
#1	-.0001	.0021	-.0004	-.0031	-.0118	.0034	.0039
#2	-.0001	-.0029	.0006	-.0026	-.0082	-.0007	.0041
#3	.0000	-.0014	-.0001	-.0010	-.0270	.0014	.0041
Check ?	None	None	None	None	None	None	None
Value							
Range							

Int. Std.	Y_3710
Units	Cts/S
Avg	3927.4
Stddev	44.4
%RSD	1.1315
#1	3955.2
#2	3950.8
#3	3876.1

Sample Name: CCV Acquired: 12/5/2014 22:21:30 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.081	50.34	F 5.607	5.131	5.057	5.194	F 5.560	F 59.22	F 5.643
Stddev	.006	.13	.036	.027	.077	.069	.041	.26	.035
%RSD	.5759	.2582	.6413	.5180	1.526	1.318	.7322	.4339	.6293
#1	1.081	50.24	5.566	5.104	5.005	5.144	5.513	58.94	5.602
#2	1.087	50.49	5.633	5.157	5.021	5.272	5.586	59.44	5.670
#3	1.074	50.30	5.621	5.131	5.146	5.166	5.581	59.27	5.655
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Fail	Chk Fail
Value			5.000				5.000	50.00	5.000
Range			10.00%				10.00%	10.00%	10.00%

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 5.762	F 5.534	F 5.597	51.65	51.81	5.072	53.39	5.200	F 1.127
Stddev	.031	.029	.035	.16	.12	.016	.17	.016	.006
%RSD	.5357	.5233	.6162	.3158	.2270	.3098	.3178	.2975	.5688
#1	5.728	5.553	5.559	51.50	51.68	5.054	53.30	5.189	1.121
#2	5.788	5.549	5.627	51.82	51.86	5.080	53.58	5.217	1.134
#3	5.768	5.501	5.603	51.61	51.90	5.083	53.28	5.193	1.127
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
Value	5.000	5.000	5.000						1.000
Range	10.00%	10.00%	10.00%						10.00%

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	51.97	F 5.770	F 58.42	F 5.741	54.85	F 1.111	F 1.111	5.086	F 5.776
Stddev	.22	.032	.37	.030	.41	.009	.004	.019	.027
%RSD	.4328	.5506	.6268	.5294	.7528	.8408	.3960	.3775	.4687
#1	51.72	5.736	58.00	5.711	54.37	1.100	1.106	5.065	5.749
#2	52.02	5.799	58.69	5.772	55.14	1.114	1.113	5.089	5.803
#3	52.17	5.776	58.56	5.739	55.02	1.118	1.113	5.103	5.777
Check ?	Chk Pass	Chk Fail	Chk Fail	Chk Fail	Chk Pass	Chk Fail	Chk Fail	Chk Pass	Chk Fail
Value		5.000	50.00	5.000		1.000	1.000		5.000
Range		10.00%	10.00%	10.00%		10.00%	10.00%		10.00%

Sample Name: CCV Acquired: 12/5/2014 22:21:30 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.137	F 5.521	5.114	F 1.165	5.420	5.206	F 5.684
Stddev	.072	.043	.015	.008	.066	.032	.035
%RSD	1.406	.7820	.2879	.7098	1.215	.6205	.6177
#1	5.059	5.529	5.097	1.156	5.436	5.182	5.645
#2	5.201	5.560	5.125	1.171	5.476	5.243	5.714
#3	5.151	5.475	5.119	1.168	5.348	5.194	5.691
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Fail
Value		5.000		1.000			5.000
Range		10.00%		10.00%			10.00%

Int. Std.	Y_3710
Units	Cts/S
Avg	3783.1
Stddev	21.9
%RSD	.57998
#1	3786.8
#2	3759.5
#3	3802.9

Sample Name: CCB Acquired: 12/5/2014 22:25:17 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba4554	Be3130	Bi2230	Ca1840	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**<.0000**	**.0007**	**.0111**	**.0005**	**.0004**	**.0007**	**<.0000**	**.0001**
Stddev	.0008	.0042	.0016	.0039	.0002	.0000	.0022	.0011	.0001
%RSD	616.0	401.4	227.8	35.29	45.31	9.337	310.5	217.8	50.00
#1	-.0008	.0022	.0006	.0132	.0007	.0004	-.0002	.0003	.0002
#2	.0006	-.0058	-.0008	.0066	.0002	.0004	-.0009	-.0001	.0001
#3	.0006	.0005	.0024	.0136	.0005	.0004	.0032	-.0018	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2835	Cu2178	Fe2599	K_7664	Li6707	Mg2798	Mn2576	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000**	**.0013**	**.0027**	**.0022**	**.0652**	**<.0000**	**<.0000**	**.0003**	**<.0000**
Stddev	.0003	.0006	.0013	.0037	.0121	.0005	.0153	.0004	.0001
%RSD	738.3	44.57	46.44	171.4	18.58	35.90	286.4	104.2	93.08
#1	.0001	.0011	.0036	.0047	.0632	-.0008	-.0059	.0002	.0000
#2	.0003	.0008	.0013	.0040	.0541	-.0018	-.0203	.0001	-.0001
#3	-.0002	.0020	.0032	-.0021	.0781	-.0016	.0103	.0007	-.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2216	P_1774	Pb2203	S_1820	Sb2068	Se1960	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**<.0000**	**.0005**	**.0031**	**.0013**	**.0013**	**.0010**	**<.0000**	**.0000**	**.0003**
Stddev	.0059	.0000	.0007	.0009	.0026	.0013	.0014	.0047	.0001
%RSD	34.35	9.448	22.07	73.59	193.1	129.7	731.4	14150.	47.99
#1	-.0229	.0005	.0031	.0013	.0042	.0021	-.0018	.0055	.0002
#2	-.0179	.0005	.0038	.0003	-.0007	.0012	.0006	-.0029	.0002
#3	-.0111	.0004	.0024	.0022	.0005	-.0004	.0006	-.0026	.0005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Sample Name: CCB Acquired: 12/5/2014 22:25:17 Type: QC
Method: 2014v4(v7) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Th2832	Ti3349	Tl1908	U_3670	V_2908	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	.0012	.0006	<.0000	<.0000	.0010	.0001
Stddev	.0001	.0010	.0002	.0019	.0061	.0018	.0001
%RSD	15.98	80.90	37.83	189.5	53.42	182.8	107.5
#1	.0004	.0002	.0006	-.0015	-.0052	-.0002	.0003
#2	.0003	.0022	.0003	.0011	-.0175	.0030	.0000
#3	.0004	.0012	.0008	-.0026	-.0116	.0001	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_3710
Units	Cts/S
Avg	3986.3
Stddev	13.0
%RSD	.32678
#1	3998.4
#2	3972.5
#3	3988.1

7470A_Prep Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 160-96004 Analyst: Souris, Matthew T Batch Open: 12/2/2014 3:00:00PM

Batch End: 12/2/2014 5:00:00PM

Preparation, Mercury

	Input Sample Lab ID (Analytical Method)	SDG	Matrix	Initial Amount	Final Amount	Due Date	Analytical TAT	Dlv Rank	Comments	Output Sample Lab ID
1	Calibration~Blank N/A	N/A		30 mL	30 mL	N/A	N/A	N/A		160-0/0-A
2	CAL~1 N/A	N/A		30 mL	30 mL	N/A	N/A	N/A		160-0/0-A
3	CAL~2 N/A	N/A		30 mL	30 mL	N/A	N/A	N/A		160-0/0-A
4	CAL~3 N/A	N/A		30 mL	30 mL	N/A	N/A	N/A		160-0/0-A
5	CAL~4 N/A	N/A		30 mL	30 mL	N/A	N/A	N/A		160-0/0-A
6	CAL~5 N/A	N/A		30 mL	30 mL	N/A	N/A	N/A		160-0/0-A
7	ICV~160-96004/7 N/A	N/A		30 mL	30 mL	N/A	N/A	N/A		ICV 160-96004/7-A
8	ICB~160-96004/8 N/A	N/A		30 mL	30 mL	N/A	N/A	N/A		ICB 160-96004/8-A
9	CCV~160-96004/9 N/A	N/A		30 mL	30 mL	N/A	N/A	N/A		CCV 160-96004/9-A
10	CCB~160-96004/10 N/A	N/A		30 mL	30 mL	N/A	N/A	N/A		CCB 160-96004/10-A

7470A_Prep Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 160-96004 Analyst: Souris, Matthew T Batch Open: 12/2/2014 3:00:00PM

Batch End: 12/2/2014 5:00:00PM

atch Notes

Uncorrected Temperature	NA
Oven, Bath or Block Temperature 1	95.6
Uncorrected Temperature 2	NA
Oven, Bath or Block Temperature 2	95.6
Digestion Tube/Cup Lot #	198804
Hood ID or number	HOOD2
Hot Block ID number	HG1
ID number of the thermometer	111815895
Temperature	NA
Lot # of Nitric Acid	505085
Lot # of hydrochloric acid	505087
Sulfuric Acid Lot Number	461739
Potassium Permanganate Lot Number	505088
Potassium Persulfate Lot Number	437725
Hydroxylamine Sulfate Lot Number	498982
Stannous Chloride Lot Number	513928
Hydroxylamine Hydrochloride Lot	NA
NaCl Lot #	166068
Repittetor Volume Check	NA
Pipette ID	MT002ANDMET12ANDMET10

7470A_Prep Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 160-96004 Analyst: Souris, Matthew T Batch Open: 12/2/2014 3:00:00PM

Batch End: 12/2/2014 5:00:00PM

Visual ck - digestate F.V. consistency	NA
Person who witnessed spiking	NA
SOP Number	ST-MT-0007
Batch Comment	

Comments

7470A_Prep Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 160-96004 Analyst: Souris, Matthew T Batch Open: 12/2/2014 3:00:00PM

Batch End: 12/2/2014 5:00:00PM

Reagent Additions Worksheet

Lab ID	Reagent Code	Amount Added	Final Amount	y	Witness
CAL 1	Hg Curve Int._00470	0.06 mL	30 mL		
CAL 2	Hg Curve Int._00470	0.15 mL	30 mL		
CAL 3	Hg Curve Int._00470	0.30 mL	30 mL		
CAL 4	Hg Curve Int._00470	1.50 mL	30 mL		
CAL 5	Hg Curve Int._00470	3.00 mL	30 mL		
ICV 160-96004/7	Hg QC Int._00449	1.50 mL	30 mL		
CCV 160-96004/9	Hg QC Int._00449	1.50 mL	30 mL		

Other Reagents:

Reagent	Amount/Units	Lot#:

HAA120414B

Method: Hg LLC Operator: Admin Date of Analysis: 04 Dec 2014 09:49:08

Seq ID	Type	Sample ID	Extended ID	Date	Stats Data	Mean	Units	Stnd Conc	Method	Chapter
14492	Std	CALIBRATION BLANK		04 Dec 2014 09:49:20	5376, 5408, 5427,	5404	PPB	0.0000	Hg LLC	HAA120414B
14493	Std	CALIBRATION 1		04 Dec 2014 09:51:33	7063, 7104, 7131,	7099	PPB	0.2000	Hg LLC	HAA120414B
14494	Std	CALIBRATION 3		04 Dec 2014 09:56:02	16512, 16826, 16707,	16615	PPB	1.0000	Hg LLC	HAA120414B
14495	Std	CALIBRATION 4		04 Dec 2014 09:58:15	69166, 69569, 69865,	69533	PPB	5.0000	Hg LLC	HAA120414B
14496	Std	CALIBRATION 5		04 Dec 2014 10:00:37	131887, 132648, 133207,	132581	PPB	10.0000	Hg LLC	HAA120414B
14497	Std	CALIBRATION 2		04 Dec 2014 10:13:42	10692, 10801, 10880,	10791	PPB	0.5000	Hg LLC	HAA120414B
14501	CK STD RECALC	ICV		04 Dec 2014 10:16:49	5.3194, 5.3522, 5.3751,	5.3489	PPB		Hg LLC	HAA120414B
14502	CK STD RECALC	ICB		04 Dec 2014 10:16:52	-0.0694, -0.0673, -0.0656,	-0.0674	PPB		Hg LLC	HAA120414B
14503	CK STND	CCV		04 Dec 2014 10:25:55	5.8409, 5.8953, 5.9352,	5.8904	PPB		Hg LLC	HAA120414B
14504	CK STND	CCB		04 Dec 2014 10:28:07	-0.0812, -0.0787, -0.0766,	-0.0788	PPB		Hg LLC	HAA120414B
14505	SMPL	MB 160-160845/1-A		04 Dec 2014 10:31:01	-0.0976, -0.0951, -0.0935,	-0.0954	PPB		Hg LLC	HAA120414B
14506	SMPL	LCS 160-160845/2-A		04 Dec 2014 10:33:15	5.2385, 5.2918, 5.3308,	5.2870	PPB		Hg LLC	HAA120414B
14507	SMPL	160-9451-C-1-E		04 Dec 2014 10:35:28	0.2584, 0.2640, 0.2679,	0.2634	PPB		Hg LLC	HAA120414B
14508	SMPL	160-9451-C-2-E		04 Dec 2014 10:38:23	0.3273, 0.3339, 0.3385,	0.3332	PPB		Hg LLC	HAA120414B
14509	SMPL	160-9451-C-3-C		04 Dec 2014 10:40:40	0.3396, 0.3461, 0.3508,	0.3456	PPB		Hg LLC	HAA120414B
14520	SMPL	160-9451-C-4-C		04 Dec 2014 10:42:55	0.1809, 0.1860, 0.1898,	0.1855	PPB		Hg LLC	HAA120414B
14521	SMPL	160-9490-F-2-D		04 Dec 2014 10:45:17	-0.0473, -0.0437, -0.0411,	-0.0441	PPB		Hg LLC	HAA120414B
14522	SMPL	160-9490-F-3-B		04 Dec 2014 10:47:36	0.0398, 0.0432, 0.0457,	0.0429	PPB		Hg LLC	HAA120414B
14523	SMPL	160-9490-F-4-B		04 Dec 2014 10:49:51	0.0946, 0.0993, 0.1030,	0.0990	PPB		Hg LLC	HAA120414B
14524	SMPL	160-9514-F-1-E		04 Dec 2014 10:52:07	-0.0167, -0.0139, -0.0114,	-0.0140	PPB		Hg LLC	HAA120414B
14525	CK STND	CCV		04 Dec 2014 10:54:23	5.8548, 5.9082, 5.9475,	5.9035	PPB		Hg LLC	HAA120414B
14526	CK STND	CCB		04 Dec 2014 10:56:38	-0.1488, -0.1466, -0.1449,	-0.1468	PPB		Hg LLC	HAA120414B
14527		[redacted]		04 Dec 2014 10:59:33	179524,	HIGH	PPB		Hg LLC	HAA120414B
14528	SMPL	160-9422-B-2-C		04 Dec 2014 11:01:43	4.2291, 4.2740, 4.3071,	4.2701	PPB		Hg LLC	HAA120414B
14539	SMPL	[redacted]		04 Dec 2014 11:05:07	-0.0078, -0.0036, -0.0004,	-0.0040	PPB		Hg LLC	HAA120414B
14540	SMPL	160-9422-B-3-G SD	5x	04 Dec 2014 11:07:42	-0.3520, -0.3519, -0.3517,	-0.3518	PPB		Hg LLC	HAA120414B
14541	SMPL	160-9422-B-3-H MS		04 Dec 2014 11:09:56	5.0578, 5.1018, 5.1330,	5.0975	PPB		Hg LLC	HAA120414B
14542	SMPL	160-9422-B-3-I MSD		04 Dec 2014 11:12:11	5.0413, 5.0895, 5.1240,	5.0849	PPB		Hg LLC	HAA120414B
14543	SMPL	[redacted]		04 Dec 2014 11:15:11	-0.0911, -0.0882, -0.0861,	-0.0885	PPB		Hg LLC	HAA120414B
14544	SMPL	160-9422-B-4-H MS		04 Dec 2014 11:18:04	5.5282, 5.5803, 5.6187,	5.5757	PPB		Hg LLC	HAA120414B
14545	SMPL	160-9422-B-4-I MSD		04 Dec 2014 11:20:18	5.3908, 5.4436, 5.4815,	5.4386	PPB		Hg LLC	HAA120414B
14546	SMPL	160-9422-B-5-C		04 Dec 2014 11:23:09	-0.0650, -0.0620, -0.0598,	-0.0623	PPB		Hg LLC	HAA120414B
14547	CK STND	CCV		04 Dec 2014 11:25:57	5.6773, 5.7270, 5.7640,	5.7228	PPB		Hg LLC	HAA120414B
14548	CK STND	CCB		04 Dec 2014 11:28:11	-0.1591, -0.1565, -0.1547,	-0.1567	PPB		Hg LLC	HAA120414B
14549	SMPL	160-9422-B-6-C		04 Dec 2014 11:31:07	-0.0416, -0.0383, -0.0362,	-0.0387	PPB		Hg LLC	HAA120414B
14550	SMPL	160-9422-B-7-C		04 Dec 2014 11:33:22	-0.0171, -0.0136, -0.0111,	-0.0139	PPB		Hg LLC	HAA120414B
14551	SMPL	160-9422-B-8-C		04 Dec 2014 11:35:38	-0.0985, -0.0959, -0.0943,	-0.0963	PPB		Hg LLC	HAA120414B
14552	SMPL	160-9422-B-9-C		04 Dec 2014 11:37:55	-0.0310, -0.0276, -0.0250,	-0.0279	PPB		Hg LLC	HAA120414B
14553	SMPL	160-9422-B-10-C		04 Dec 2014 11:40:10	-0.1369, -0.1350, -0.1335,	-0.1351	PPB		Hg LLC	HAA120414B
14554	SMPL	[redacted]		04 Dec 2014 11:42:24	-0.1438, -0.1413, -0.1401,	-0.1417	PPB		Hg LLC	HAA120414B
14555	SMPL	[redacted]		04 Dec 2014 11:44:39	-0.3800, -0.3804, -0.3810,	-0.3804	PPB		Hg LLC	HAA120414B
14556	SMPL	[redacted]		04 Dec 2014 11:46:51	-0.0877, -0.0853, -0.0835,	-0.0855	PPB		Hg LLC	HAA120414B
14557	SMPL	160-9422-B-11-C SD	5x	04 Dec 2014 11:49:03	-0.3261, -0.3261, -0.3255,	-0.3259	PPB		Hg LLC	HAA120414B
14558	SMPL	160-9422-B-11-D MS		04 Dec 2014 11:51:17	5.1088, 5.1578, 5.1923,	5.1530	PPB		Hg LLC	HAA120414B
14559	CK STND	CCV		04 Dec 2014 11:53:29	5.7191, 5.7720, 5.8094,	5.7668	PPB		Hg LLC	HAA120414B
14560	CK STND	CCB		04 Dec 2014 11:56:22	0.0483, 0.0526, 0.0557,	0.0522	PPB		Hg LLC	HAA120414B
14561	SMPL	160-9422-B-11-E MSD		04 Dec 2014 11:59:11	4.9740, 5.0257, 5.0629,	5.0208	PPB		Hg LLC	HAA120414B
14562	SMPL	[redacted]		04 Dec 2014 12:01:26	-0.1254, -0.1231, -0.1213,	-0.1233	PPB		Hg LLC	HAA120414B
14563	SMPL	160-9422-B-13-C		04 Dec 2014 12:04:20	0.7833, 0.7946, 0.8024,	0.7934	PPB		Hg LLC	HAA120414B
14564	SMPL	160-9422-B-14-C		04 Dec 2014 12:06:34	-0.0767, -0.0739, -0.0717,	-0.0741	PPB		Hg LLC	HAA120414B
14565	SMPL	160-9422-B-15-C		04 Dec 2014 12:08:59	0.9127, 0.9236, 0.9315,	0.9226	PPB		Hg LLC	HAA120414B
14566	SMPL	160-9422-B-16-I		04 Dec 2014 12:11:14	0.4780, 0.4867, 0.4927,	0.4858	PPB		Hg LLC	HAA120414B
14567	SMPL	160-9422-B-17-C		04 Dec 2014 12:13:40	19.3176, 19.4714, 19.5818,	19.4569	PPB		Hg LLC	HAA120414B
14568	SMPL	160-9422-B-18-C		04 Dec 2014 12:16:02	0.4848, 0.4937, 0.5000,	0.4928	PPB		Hg LLC	HAA120414B
14569	SMPL	160-9422-B-19-F		04 Dec 2014 12:19:27	8.9393, 9.0154, 9.0715,	9.0087	PPB		Hg LLC	HAA120414B
14570	SMPL	160-9422-B-20-D		04 Dec 2014 12:21:46	-0.3721, -0.3719, -0.3718,	-0.3719	PPB		Hg LLC	HAA120414B
14571	CK STND	CCV		04 Dec 2014 12:24:48	5.6861, 5.7397, 5.7797,	5.7352	PPB		Hg LLC	HAA120414B
14572	CK STND	CCB		04 Dec 2014 12:27:02	-0.0024, 0.0017, 0.0047,	0.0013	PPB		Hg LLC	HAA120414B
14573	SMPL	160-9422-B-21-D		04 Dec 2014 12:30:01	1.7573, 1.7761, 1.7894,	1.7743	PPB		Hg LLC	HAA120414B
14574	SMPL	[redacted]		04 Dec 2014 12:32:17	2.0452, 2.0661, 2.0813,	2.0642	PPB		Hg LLC	HAA120414B
14575	SMPL	160-9492-F-1-D		04 Dec 2014 12:34:58	0.2185, 0.2245, 0.2288,	0.2239	PPB		Hg LLC	HAA120414B
14576	SMPL	160-9492-F-2-B		04 Dec 2014 12:37:39	0.3900, 0.3975, 0.4026,	0.3967	PPB		Hg LLC	HAA120414B
14577	SMPL	160-9492-F-3-B		04 Dec 2014 12:39:55	-0.0620, -0.0588, -0.0566,	-0.0591	PPB		Hg LLC	HAA120414B
14578	SMPL	[redacted]		04 Dec 2014 12:42:16	-0.2268, -0.2256, -0.2247,	-0.2257	PPB		Hg LLC	HAA120414B
14579	SMPL	LCS 160-160848/2-A		04 Dec 2014 12:44:32	4.6273, 4.6807, 4.7197,	4.6759	PPB		Hg LLC	HAA120414B
14580	SMPL	160-9451-B-1-E		04 Dec 2014 12:46:47	-0.1637, -0.1619, -0.1599,	-0.1618	PPB		Hg LLC	HAA120414B
14581	SMPL	160-9451-B-2-C		04 Dec 2014 12:49:39	-0.1327, -0.1301, -0.1283,	-0.1304	PPB		Hg LLC	HAA120414B
14582	SMPL	160-9451-B-2-C SD	5x	04 Dec 2014 12:51:53	-0.3274, -0.3269, -0.3267,	-0.3270	PPB		Hg LLC	HAA120414B
14583	CK STND	CCV		04 Dec 2014 12:54:07	5.6421, 5.6958, 5.7344,	5.6908	PPB		Hg LLC	HAA120414B
14584	CK STND	CCB		04 Dec 2014 12:56:19	0.0283, 0.0318, 0.0346,	0.0316	PPB		Hg LLC	HAA120414B
14585	SMPL	160-9451-B-2-D MS		04 Dec 2014 12:59:13	4.8605, 4.9092, 4.9455,	4.9051	PPB		Hg LLC	HAA120414B
14586	SMPL	160-9451-B-2-E MSD		04 Dec 2014 13:01:29	5.1184, 5.1698, 5.2070,	5.1650	PPB		Hg LLC	HAA120414B
14587	SMPL	160-9451-B-3-C		04 Dec 2014 13:04:22	-0.1570, -0.1549, -0.1534,	-0.1551	PPB		Hg LLC	HAA120414B
14588	SMPL	[redacted]		04 Dec 2014 13:07:14	-0.0666, -0.0638, -0.0617,	-0.0641	PPB		Hg LLC	HAA120414B
14589	SMPL	LB 160-158162/1-C		04 Dec 2014 13:09:29	-0.0550, -0.0521, -0.0498,	-0.0523	PPB		Hg LLC	HAA120414B
14590	SMPL	LCS 160-160849/2-A		04 Dec 2014 13:11:44	4.9371, 4.9836, 5.0173,	4.9793	PPB		Hg LLC	HAA120414B
14591	SMPL	160-9490-G-2-E		04 Dec 2014 13:13:59	-0.1202, -0.1172, -0.1151,	-0.1175	PPB		Hg LLC	HAA120414B
14592	SMPL	160-9490-G-3-C		04 Dec 2014 13:16:54	-0.1498, -0.1472, -0.1458,	-0.1476	PPB		Hg LLC	HAA120414B
14593	SMPL	160-9490-G-3-C SD	5x	04 Dec 2014 13:19:09	-0.3354, -0.3350, -0.3347,	-0.3350	PPB		Hg LLC	HAA120414B
14594	SMPL	160-9490-G-3-D MS		04 Dec 2014 13:21:23	4.8852, 4.9314, 4.9653,	4.9273	PPB		Hg LLC	HAA120414B
14595	CK STND	CCV		04 Dec 2014 13:23:36	5.5820, 5.6369, 5.6763,	5.6317	PPB		Hg LLC	HAA120414B
14596	CK STND	CCB		04 Dec 2014 13:26:27	0.0463, 0.0505, 0.0534,	0.0501	PPB		Hg LLC	HAA120414B
14597	SMPL	160-9490-G-3-E MSD		04 Dec 2014 13:29:19	4.9727, 5.0256, 5.0645,	5.0209	PPB		Hg LLC	HAA120414B
14598	SMPL	160-9490-G-4-C		04 Dec 2014 13:31:34	-0.2522, -0.2508, -0.2497,	-0.2509	PPB		Hg LLC	HAA120414B
14599	SMPL	LB 160-158743/1-C		04 Dec 2014 13:34:28	-0.1826, -0.1807, -0.1796,	-0.1810	PPB		Hg LLC	HAA120414B
14600	SMPL	LCS 160-160850/2-A		04 Dec 2014 13:36:43	4.7669, 4.8129, 4.8465,	4.8088	PPB		Hg LLC	HAA120414B
14601	SMPL	160-9514-G-1-E		04 Dec 2014 13:38:58	-0.1735, -0.1713, -0.1698,	-0.1715	PPB		Hg LLC	HAA120414B
14602	SMPL	160-9514-G-1-E SD	5x	04 Dec 2014 13:41:51	-0.3049, -0.3043, -0.3039,	-0.3044	PPB		Hg LLC	HAA120414B
14603	SMPL	160-9514-G-1-F MS		04 Dec 2014 13:44:05	4.8441, 4.8932, 4.9294,	4.8889	PPB		Hg LLC	HAA120414B
14604	SMPL	160-9514-G-1-G MSD		04 Dec 2014 13:46:18	4.8564, 4.9074, 4.9439,	4.9026	PPB		Hg LLC	HAA120414B
14605	SMPL	[redacted]		04 Dec 2014 13:49:10	-0.2026, -0.2007, -0.1993,	-0.2009	PPB		Hg LLC	HAA120414B
14606	SMPL	LCS 160-160851/2-A		04 Dec 2014 13:52:02	4.8717, 4.9242, 4.9627,	4.9196	PPB		Hg LLC	HAA120414B
14607	CK STND	CCV		04 Dec 2014 13:54:16	5.5923, 5.6473, 5.6877,	5.6424	PPB		Hg LLC	HAA120414B
14608	CK STND	CCB		04 Dec 2014 13:57:06	0.0280, 0.0320, 0.0352,	0.0317	PPB		Hg LLC	HAA120414B
14609	SMPL	160-9422-A-2-C		04 Dec 2014 14:00:00	-0.1849, -0.1829, -0.1816,	-0.1832	PPB		Hg LLC	HAA120414B
14610	SMPL	160-9630-B-2-G		04 Dec 2014 14:02:16	-0.1420, -0.1397, -0.1381,	-0.1399	PPB		Hg LLC	HAA120414B
14611	SMPL	160-9630-B-2-G SD	5x	04 Dec 2014 14:04:31	-0.3570, -0.3571, -0.3567,	-0.3570	PPB		Hg LLC	HAA120414B
14612	SMPL	160-9630-B-2-H MS		04 Dec 2014 14:06:46	4.8565, 4.9061, 4.9417,	4.9014	PPB		Hg LLC	HAA120414B
14613	SMPL	[redacted]		04 Dec 2014 14:08:59	4.9027, 4.9508, 4.9874,	4.9470	PPB		Hg LLC	HAA120414B
14614	CK STND	CCV		04 Dec 2014 14:11:47	4.9131, 4.9335, 4.9464,	4.9310	PPB		Hg LLC	HAA120414B
14615	CK STND	CCB		04 Dec 2014 14:52:06	-0.0488, -0.0468, -0.0453,	-0.0469	PPB		Hg LLC	HAA120414B
14616	CK STND	CCV		04 Dec 2014 17:04:49	5.7433, 5.8010, 5.8434,	5.7959	PPB		Hg LLC	HAA120414B
14617	CK STND	CCB		04 Dec 2014 17:07:02	0.0961, 0.1010, 0.1045,	0.1005	PPB		Hg LLC	HAA120414B
14618	SMPL	[redacted]	20x	04 Dec 2014 17:09:58	2.6578, 2.6880, 2.7105,	2.6854	PPB		Hg LLC	HAA120414B
14619	SMPL	[redacted]	20x	04 Dec 2014 17:15:19	0.7749, 0.7861, 0.7946,	0.7852	PPB		Hg LLC	HAA120414B
14620	SMPL	LCS 160-160846/2-A		04 Dec 2014 17:19:59	4.9864, 5.0399, 5.0795,	5.0353	PPB		Hg LLC	HAA120414B
14621	CK STND	CCV		04 Dec 2014 17:26:45	5.6344, 5.6935, 5.7374,	5.6884	PPB		Hg LLC	HAA120414B
14622	CK STND	CCB		04 Dec 2014 17:29:00	-0.0714, -0.0681, -0.0656,	-0.0684	PPB		Hg LLC	HAA120414B

Hg

used for QC purposes only

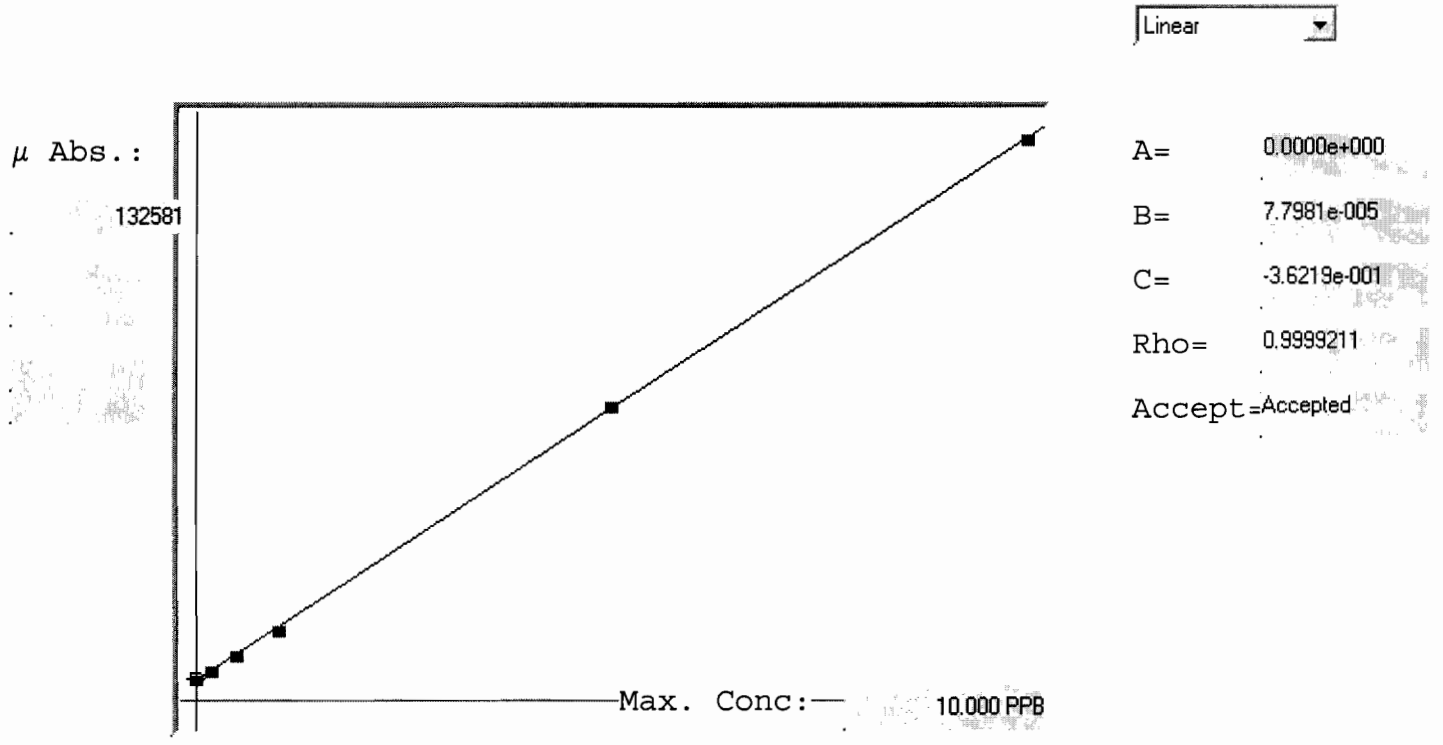
Hg

Hg

Hg

MTS 12/5/14
7470A
A. Botchi 460464

Hg LLC



Std ID	Conc.	Calc.	Dev.	Mean	SD or %RSD	Rep 1	Rep 2	Rep 3	Rep 4
CALIBRATION BLANK	0.000	0.059	0.059	5403	21.045	5376	5408	5427	
CALIBRATION 1	0.200	0.191	-0.009	7099	0.4 %	7063	7104	7131	
CALIBRATION 2	0.500	0.479	-0.021	10791	0.7 %	10692	10801	10880	
CALIBRATION 3	1.000	0.933	-0.067	16615	0.5 %	16512	16626	16707	
CALIBRATION 4	5.000	5.060	0.060	69533	0.4 %	69166	69569	69865	
CALIBRATION 5	10.000	9.977	-0.023	132580	0.4 %	131887	132648	133207	

HAA120414B

HAA120614A

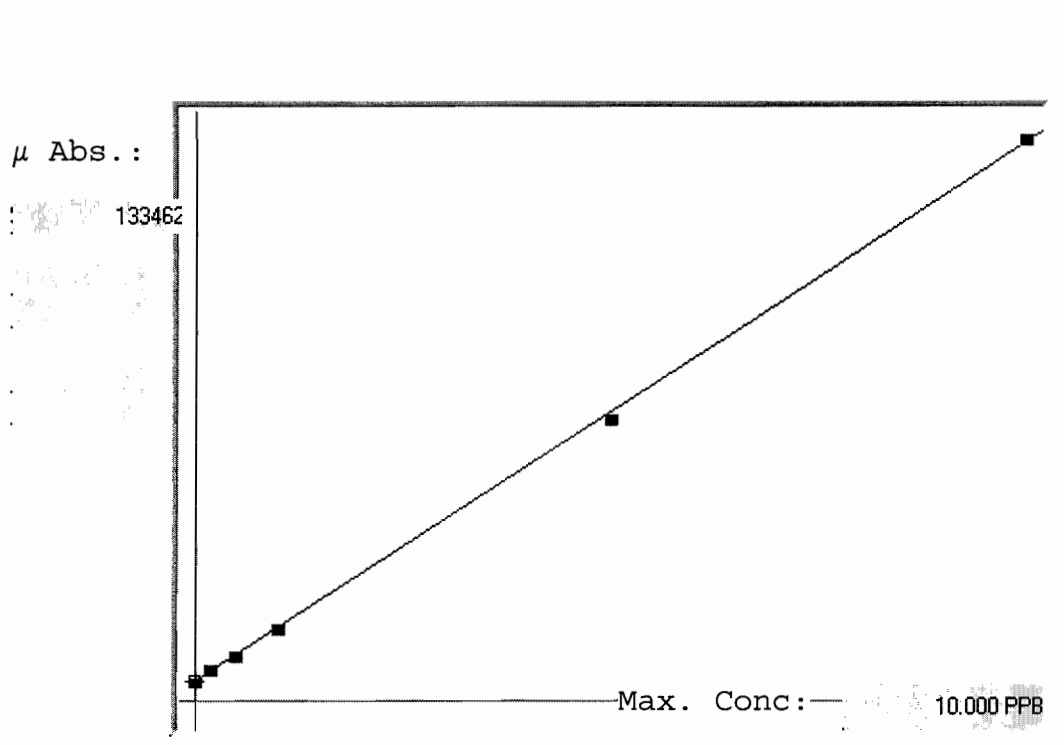
Method: Hg LLC Operator: Admin Date of Analysis: 06 Dec 2014 11:21:47

Seq ID	Type	Sample ID	Extended ID	Date	Stats Data	Mean	Units	Stnd Conc	Method	Chapter
15388	Std	CALIBRATION BLANK		06 Dec 2014 11:21:58	4658, 4699, 4732,	4696	PPB	0.0000	Hg LLC	HAA120614A
15389	Std	CALIBRATION 1		06 Dec 2014 11:24:11	7773, 7844, 7892,	7836	PPB	0.2000	Hg LLC	HAA120614A
15390	Std	CALIBRATION 2		06 Dec 2014 11:26:26	10914, 11028, 11115,	11019	PPB	0.5000	Hg LLC	HAA120614A
15391	Std	CALIBRATION 3		06 Dec 2014 11:28:52	17376, 17539, 17662,	17526	PPB	1.0000	Hg LLC	HAA120614A
15392	Std	CALIBRATION 4		06 Dec 2014 11:31:17	66587, 67244, 67726,	67186	PPB	5.0000	Hg LLC	HAA120614A
15393	Std	CALIBRATION 5		06 Dec 2014 11:33:51	132410, 133567, 134410,	133462	PPB	10.0000	Hg LLC	HAA120614A
15394	CK STND	ICV		06 Dec 2014 11:36:43	5.0161, 5.0645, 5.0991,	5.0599	PPB		Hg LLC	HAA120614A
15395	CK STND	ICB		06 Dec 2014 11:39:47	-0.0472, -0.0438, -0.0411,	-0.0441	PPB		Hg LLC	HAA120614A
15396	CK STND	CCV		06 Dec 2014 11:54:09	5.1534, 5.1992, 5.2317,	5.1948	PPB		Hg LLC	HAA120614A
15397	CK STND	CCB		06 Dec 2014 11:56:20	-0.0506, -0.0470, -0.0444,	-0.0473	PPB		Hg LLC	HAA120614A
15398	SMPL	MB 160-161416/1-A		06 Dec 2014 11:59:21	0.0090, 0.0127, 0.0153,	0.0123	PPB		Hg LLC	HAA120614A
15399	SMPL	LCS 160-161416/2-A		06 Dec 2014 12:01:36	5.0957, 5.1508, 5.1903,	5.1456	PPB		Hg LLC	HAA120614A
15400	SMPL	160-9422-B-2-D		06 Dec 2014 12:06:32	3.9888, 4.0315, 4.0620,	4.0274	PPB		Hg LLC	HAA120614A
15401	SMPL	160-9422-B-3-J		06 Dec 2014 12:09:51	0.1729, 0.1779, 0.1816,	0.1774	PPB		Hg LLC	HAA120614A
15402	SMPL	160-9422-B-3-J SD	5x	06 Dec 2014 12:12:28	-0.3186, -0.3187, -0.3184,	-0.3186	PPB		Hg LLC	HAA120614A
15403	SMPL	160-9422-B-3-K MS		06 Dec 2014 12:14:42	4.9319, 4.9821, 5.0187,	4.9776	PPB		Hg LLC	HAA120614A
15404	SMPL	160-9422-B-3-L MSD		06 Dec 2014 12:16:56	5.1031, 5.1686, 5.2137,	5.1618	PPB		Hg LLC	HAA120614A
15405	SMPL	160-9422-B-5-D		06 Dec 2014 12:19:56	0.0954, 0.1000, 0.1032,	0.0995	PPB		Hg LLC	HAA120614A
15406	SMPL	160-9422-B-6-D		06 Dec 2014 12:22:41	0.1399, 0.1454, 0.1490,	0.1448	PPB		Hg LLC	HAA120614A
15407	CK STND	CCV		06 Dec 2014 12:24:57	5.1005, 5.1520, 5.1888,	5.1471	PPB		Hg LLC	HAA120614A
15408	CK STND	CCB		06 Dec 2014 12:27:12	-0.0656, -0.0621, -0.0595,	-0.0624	PPB		Hg LLC	HAA120614A
15409	SMPL	160-9422-B-7-D		06 Dec 2014 12:30:11	0.1930, 0.1989, 0.2032,	0.1984	PPB		Hg LLC	HAA120614A
15410	SMPL	160-9422-B-8-D		06 Dec 2014 12:32:26	0.1356, 0.1408, 0.1438,	0.1401	PPB		Hg LLC	HAA120614A
15411	SMPL	160-9422-B-9-D		06 Dec 2014 12:34:42	0.2183, 0.2233, 0.2269,	0.2228	PPB		Hg LLC	HAA120614A
15416	SMPL	160-9422-B-10-D		06 Dec 2014 12:36:57	0.0206, 0.0246, 0.0272,	0.0241	PPB		Hg LLC	HAA120614A
15417	SMPL	160-9422-B-11-F		06 Dec 2014 12:39:11	0.0618, 0.0661, 0.0691,	0.0657	PPB		Hg LLC	HAA120614A
15418	SMPL	160-9422-B-12-D		06 Dec 2014 12:41:25	0.0577, 0.0617, 0.0647,	0.0614	PPB		Hg LLC	HAA120614A
15419	SMPL	160-9422-B-13-D		06 Dec 2014 12:43:40	0.8049, 0.8156, 0.8235,	0.8147	PPB		Hg LLC	HAA120614A
15420	SMPL	160-9422-B-14-D		06 Dec 2014 12:45:54	0.0562, 0.0606, 0.0635,	0.0601	PPB		Hg LLC	HAA120614A
15421	SMPL	160-9422-B-15-D		06 Dec 2014 12:48:23	0.9336, 0.9455, 0.9540,	0.9444	PPB		Hg LLC	HAA120614A
15422	SMPL	160-9422-B-16-J		06 Dec 2014 12:50:40	0.1290, 0.1345, 0.1381,	0.1339	PPB		Hg LLC	HAA120614A
15423	CK STND	CCV		06 Dec 2014 12:53:11	5.0172, 5.0719, 5.1112,	5.0668	PPB		Hg LLC	HAA120614A
15424	CK STND	CCB		06 Dec 2014 12:55:30	-0.0574, -0.0542, -0.0520,	-0.0546	PPB		Hg LLC	HAA120614A
15425	SMPL	160-9422-B-17-D	20x	06 Dec 2014 12:58:25	0.6403, 0.6507, 0.6580,	0.6497	PPB		Hg LLC	HAA120614A
15426	SMPL	160-9422-B-18-D		06 Dec 2014 13:00:40	0.1505, 0.1566, 0.1612,	0.1561	PPB		Hg LLC	HAA120614A
15427	SMPL	160-9422-B-20-E		06 Dec 2014 13:02:58	-0.0036, 0.0005, 0.0033,	0.0000	PPB		Hg LLC	HAA120614A
15429	SMPL	160-9422-B-21-E		06 Dec 2014 13:05:14	1.8923, 1.9130, 1.9284,	1.9112	PPB		Hg LLC	HAA120614A
15430	SMPL	160-9422-B-22-E		06 Dec 2014 13:07:30	2.0493, 2.0725, 2.0899,	2.0705	PPB		Hg LLC	HAA120614A
15431	SMPL	MB 160-161420/1-A		06 Dec 2014 13:10:08	-0.0390, -0.0354, -0.0330,	-0.0358	PPB		Hg LLC	HAA120614A
15432	SMPL	~~LCS 160-161420/2-A~~ misinject		06 Dec 2014 13:12:48	-0.4008, -0.4015, -0.4022,	-0.4015	PPB		Hg LLC	HAA120614A
15433	SMPL	160-9422-B-4-J		06 Dec 2014 13:15:01	0.0862, 0.0903, 0.0936,	0.0900	PPB		Hg LLC	HAA120614A
15434	SMPL	160-9422-B-4-J SD	5x	06 Dec 2014 13:17:13	-0.3072, -0.3063, -0.3061,	-0.3065	PPB		Hg LLC	HAA120614A
15435	SMPL	160-9422-B-4-K MS		06 Dec 2014 13:19:27	4.8528, 4.9089, 4.9490,	4.9036	PPB		Hg LLC	HAA120614A
15436	CK STND	CCV		06 Dec 2014 13:21:39	5.0205, 5.0742, 5.1135,	5.0694	PPB		Hg LLC	HAA120614A
15437	CK STND	CCB		06 Dec 2014 13:24:30	-0.0420, -0.0386, -0.0361,	-0.0389	PPB		Hg LLC	HAA120614A
15438	SMPL	160-9422-B-4-L MSD		06 Dec 2014 13:27:23	4.9301, 4.9830, 5.0220,	4.9784	PPB		Hg LLC	HAA120614A
15439	SMPL	160-9262-A-1-C		06 Dec 2014 13:29:37	0.1095, 0.1135, 0.1164,	0.1131	PPB		Hg LLC	HAA120614A
15440	SMPL	160-9262-A-2-C		06 Dec 2014 13:32:24	0.2198, 0.2255, 0.2296,	0.2250	PPB		Hg LLC	HAA120614A
15441	SMPL	LB 160-160203/1-D		06 Dec 2014 13:34:42	0.0046, 0.0087, 0.0113,	0.0082	PPB		Hg LLC	HAA120614A
15442	SMPL	LCS 160-161421/2-A		06 Dec 2014 13:37:03	4.7809, 4.7997, 4.8089,	4.7965	PPB		Hg LLC	HAA120614A
15443	SMPL	~~160-9426-A-2-B~~ misinject		06 Dec 2014 13:39:18	-0.4401, -0.4407, -0.4410,	-0.4406	PPB		Hg LLC	HAA120614A
15444	SMPL	160-9426-A-2-D SD	5x	06 Dec 2014 13:41:55	-0.2544, -0.2535, -0.2525,	-0.2535	PPB		Hg LLC	HAA120614A
15445	SMPL	160-9426-A-2-E MS		06 Dec 2014 13:44:08	4.2937, 4.3413, 4.3770,	4.3373	PPB		Hg LLC	HAA120614A
15446	SMPL	160-9426-A-2-F MSD		06 Dec 2014 13:46:19	4.2652, 4.3129, 4.3467,	4.3083	PPB		Hg LLC	HAA120614A
15447	SMPL	160-9630-B-2-J		06 Dec 2014 13:49:19	0.0145, 0.0187, 0.0215,	0.0183	PPB		Hg LLC	HAA120614A
15448	CK STND	CCV		06 Dec 2014 13:52:06	5.1814, 5.2366, 5.2768,	5.2316	PPB		Hg LLC	HAA120614A
15449	CK STND	CCB		06 Dec 2014 13:54:21	-0.0664, -0.0628, -0.0603,	-0.0631	PPB		Hg LLC	HAA120614A
15450	SMPL	LB 160-157827/1-D		06 Dec 2014 13:57:16	-0.0069, -0.0029, 0.0001,	-0.0032	PPB		Hg LLC	HAA120614A
15451	SMPL	LCS 160-161422/2-A		06 Dec 2014 13:59:32	5.0079, 5.0625, 5.1021,	5.0575	PPB		Hg LLC	HAA120614A
15452	SMPL	160-9451-B-1-F		06 Dec 2014 14:01:46	-0.0265, -0.0225, -0.0197,	-0.0229	PPB		Hg LLC	HAA120614A
15453	SMPL	160-9451-B-2-F		06 Dec 2014 14:04:38	0.0216, 0.0257, 0.0289,	0.0254	PPB		Hg LLC	HAA120614A
15454	SMPL	160-9451-B-3-D		06 Dec 2014 14:06:52	0.0044, 0.0082, 0.0110,	0.0079	PPB		Hg LLC	HAA120614A
15455	SMPL	160-9451-B-4-D		06 Dec 2014 14:09:07	-0.0358, -0.0325, -0.0297,	-0.0327	PPB		Hg LLC	HAA120614A
15456	SMPL	160-9451-B-4-D SD	5x	06 Dec 2014 14:11:23	-0.3190, -0.3187, -0.3182,	-0.3186	PPB		Hg LLC	HAA120614A
15457	SMPL	160-9451-B-4-E MS		06 Dec 2014 14:13:38	4.6880, 4.7381, 4.7747,	4.7336	PPB		Hg LLC	HAA120614A
15458	SMPL	160-9451-B-4-F MSD		06 Dec 2014 14:15:51	4.8253, 4.8753, 4.9115,	4.8707	PPB		Hg LLC	HAA120614A
15459	SMPL	LB 160-158668/1-E		06 Dec 2014 14:18:41	-0.0277, -0.0234, -0.0202,	-0.0238	PPB		Hg LLC	HAA120614A
15460	CK STND	CCV		06 Dec 2014 14:21:27	5.1860, 5.2478, 5.2930,	5.2422	PPB		Hg LLC	HAA120614A
15461	CK STND	CCB		06 Dec 2014 14:23:42	-0.0565, -0.0523, -0.0498,	-0.0529	PPB		Hg LLC	HAA120614A
15462	SMPL	LCS 160-161423/2-A		06 Dec 2014 14:26:39	4.9300, 4.9836, 5.0221,	4.9785	PPB		Hg LLC	HAA120614A
15463	SMPL	160-9418-A-1-O		06 Dec 2014 14:28:55	-0.0755, -0.0720, -0.0695,	-0.0723	PPB		Hg LLC	HAA120614A
15464	SMPL	160-9418-A-1-O SD	5x	06 Dec 2014 14:31:51	-0.2993, -0.2989, -0.2982,	-0.2988	PPB		Hg LLC	HAA120614A
15465	SMPL	160-9418-A-1-P MS		06 Dec 2014 14:34:06	4.5128, 4.5637, 4.6013,	4.5592	PPB		Hg LLC	HAA120614A
15466	SMPL	160-9418-A-1-Q MSD		06 Dec 2014 14:36:18	3.4493, 3.4865, 3.5128,	3.4829	PPB		Hg LLC	HAA120614A
15467	SMPL	160-9419-A-1-I		06 Dec 2014 14:39:11	-0.0223, -0.0182, -0.0155,	-0.0187	PPB		Hg LLC	HAA120614A
15468	SMPL	160-9482-E-1-J		06 Dec 2014 14:41:59	-0.0094, -0.0057, -0.0027,	-0.0059	PPB		Hg LLC	HAA120614A
15469	SMPL	160-9482-E-2-J		06 Dec 2014 14:44:14	-0.0379, -0.0343, -0.0316,	-0.0346	PPB		Hg LLC	HAA120614A
15470	SMPL	160-9482-E-3-H		06 Dec 2014 14:46:30	-0.0495, -0.0457, -0.0432,	-0.0461	PPB		Hg LLC	HAA120614A
15471	SMPL	160-9482-D-4-H		06 Dec 2014 14:48:45	-0.0419, -0.0384, -0.0362,	-0.0388	PPB		Hg LLC	HAA120614A
15472	CK STND	CCV		06 Dec 2014 14:51:01	5.1480, 5.2004, 5.2371,	5.1952	PPB		Hg LLC	HAA120614A
15473	CK STND	CCB		06 Dec 2014 14:53:17	-0.0406, -0.0365, -0.0338,	-0.0370	PPB		Hg LLC	HAA120614A
15474	SMPL	160-9422-B-1-D	20x	06 Dec 2014 14:56:12	2.7545, 2.7873, 2.8119,	2.7845	PPB		Hg LLC	HAA120614A
15475	CK STND	CCV		06 Dec 2014 14:58:27	5.2227, 5.2828, 5.3267,	5.2774	PPB		Hg LLC	HAA120614A
15476	CK STND	CCB		06 Dec 2014 15:01:03	-0.0417, -0.0384, -0.0357,	-0.0386	PPB		Hg LLC	HAA120614A
15477	CK STND	CCV		08 Dec 2014 08:22:42	4.8508, 4.9047, 4.9443,	4.8999	PPB		Hg LLC	HAA120614A
15478	CK STND	CCB		08 Dec 2014 08:24:54	-0.0567, -0.0531, -0.0502,	-0.0533	PPB		Hg LLC	HAA120614A
15479	SMPL	LCS 160-161420/1-A		08 Dec 2014 08:27:47	4.4941, 4.5412, 4.5754,	4.5369	PPB		Hg LLC	HAA120614A
15480	SMPL	160-9426-A-2-D		08 Dec 2014 08:30:02	-0.0173, -0.0132, -0.0104,	-0.0136	PPB		Hg LLC	HAA120614A
15481	CK STND	CCV		08 Dec 2014 08:32:51	4.9407, 5.0017, 5.0460,	4.9961	PPB		Hg LLC	HAA120614A
15482	CK STND	CCB		08 Dec 2014 08:35:06	-0.1326, -0.1289, -0.1264,	-0.1293	PPB		Hg LLC	HAA120614A
15483	CK STND	CCB		08 Dec 2014 08:54:17	-0.0731, -0.0689,	-0.0694	PPB		Hg LLC	HAA120614A

Hg

MTS 12/8/14
7470A
A. Batch: 161529

Hg LLC



Std ID	Conc.	Calc.	Dev.	Mean	SD or %RSD	Rep 1	Rep 2	Rep 3	Rep 4
CALIBRATION BLANK	0.000	0.006	0.006	4696	30.269	4658	4699	4732	
CALIBRATION 1	0.200	0.251	0.051	7836	0.6 %	7773	7844	7892	
CALIBRATION 2	0.500	0.499	-0.001	11019	0.7 %	10914	11028	11115	
CALIBRATION 3	1.000	1.007	0.007	17525	0.7 %	17376	17539	17662	
CALIBRATION 4	5.000	4.883	-0.117	67185	0.7 %	66587	67244	67726	
CALIBRATION 5	10.000	10.055	0.055	133462	0.6 %	132410	133567	134410	

HAA120614A

7470A_Prep Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 160-96004 Analyst: Souris, Matthew T Batch Open: 12/5/2014 1:00:00PM

Batch End: 12/5/2014 3:00:00PM

Preparation, Mercury

	Input Sample Lab ID (Analytical Method)	SDG	Matrix	Initial Amount	Final Amount	Due Date	Analytical TAT	Dlv Rank	Comments	Output Sample Lab ID
1	Calibration~Blank N/A	N/A		30 mL	30 mL	N/A	N/A	N/A		160-0/0-A
2	CAL~1 N/A	N/A		30 mL	30 mL	N/A	N/A	N/A		160-0/0-A
3	CAL~2 N/A	N/A		30 mL	30 mL	N/A	N/A	N/A		160-0/0-A
4	CAL~3 N/A	N/A		30 mL	30 mL	N/A	N/A	N/A		160-0/0-A
5	CAL~4 N/A	N/A		30 mL	30 mL	N/A	N/A	N/A		160-0/0-A
6	CAL~5 N/A	N/A		30 mL	30 mL	N/A	N/A	N/A		160-0/0-A
7	ICV~160-96004/7 N/A	N/A		30 mL	30 mL	N/A	N/A	N/A		ICV 160-96004/7-A
8	ICB~160-96004/8 N/A	N/A		30 mL	30 mL	N/A	N/A	N/A		ICB 160-96004/8-A
9	CCV~160-96004/9 N/A	N/A		30 mL	30 mL	N/A	N/A	N/A		CCV 160-96004/9-A
10	CCB~160-96004/10 N/A	N/A		30 mL	30 mL	N/A	N/A	N/A		CCB 160-96004/10-A

7470A_Prep Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 160-96004 Analyst: Souris, Matthew T Batch Open: 12/5/2014 1:00:00PM

Batch End: 12/5/2014 3:00:00PM

atch Notes

Uncorrected Temperature	NA
Oven, Bath or Block Temperature 1	95.4
Uncorrected Temperature 2	NA
Oven, Bath or Block Temperature 2	95.4
Digestion Tube/Cup Lot #	198804
Hood ID or number	HOOD2
Hot Block ID number	HG1
ID number of the thermometer	111815895
Temperature	NA
Lot # of Nitric Acid	505085
Lot # of hydrochloric acid	505087
Sulfuric Acid Lot Number	461739
Potassium Permanganate Lot Number	505088
Potassium Persulfate Lot Number	437725
Hydroxylamine Sulfate Lot Number	498982
Stannous Chloride Lot Number	513928
Hydroxylamine Hydrochloride Lot	NA
NaCl Lot #	166068
Repittetor Volume Check	NA
Pipette ID	MT002ANDMET12ANDMET10

7470A_Prep Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 160-96004 Analyst: Souris, Matthew T Batch Open: 12/5/2014 1:00:00PM

Batch End: 12/5/2014 3:00:00PM

Visual ck - digestate F.V. consistency	NA
Person who witnessed spiking	NA
SOP Number	ST-MT-0005
Batch Comment	

Comments

7470A_Prep Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 160-96004

Analyst: Souris, Matthew T

Batch Open: 12/5/2014 1:00:00PM

Batch End: 12/5/2014 3:00:00PM

Reagent Additions Worksheet

Lab ID	Reagent Code	Amount Added	Final Amount	y	Witness
CAL 1	Hg Curve Int._00472	0.06 mL	30 mL		
CAL 2	Hg Curve Int._00472	0.15 mL	30 mL		
CAL 3	Hg Curve Int._00472	0.30 mL	30 mL		
CAL 4	Hg Curve Int._00472	1.50 mL	30 mL		
CAL 5	Hg Curve Int._00472	3.00 mL	30 mL		
ICV 160-96004/7	Hg QC Int._00451	1.50 mL	30 mL		
CCV 160-96004/9	Hg QC Int._00451	1.50 mL	30 mL		

Other Reagents:

Reagent	Amount/Units	Lot#:

METALS BATCH WORKSHEET

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Batch Number: 157827 Batch Start Date: 11/18/14 16:33 Batch Analyst: Mcnutt, Joe W

Batch Method: FILTRATION Batch End Date: 11/18/14 17:33

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	HNO3 00095			
LB 160-157827/1		FILTRATION, 3010A, 6010C		250 mL	250 mL	3 mL			
160-9451-B-1	BG03-20141114-21	FILTRATION, 3010A, 6010C	D	250 mL	250 mL	3 mL			
160-9451-B-2	BG04-20141114-21	FILTRATION, 3010A, 6010C	D	250 mL	250 mL	3 mL			
160-9451-B-3	BG05-20141114-21	FILTRATION, 3010A, 6010C	D	250 mL	250 mL	3 mL			
160-9451-B-4	N1-20141114-21	FILTRATION, 3010A, 6010C	D	250 mL	250 mL	3 mL			

Batch Notes	
Filter Lot #	1128936
Lot # of Nitric Acid	460969

Basis	Basis Description
D	Dissolved

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Batch Number: 159156 Batch Start Date: 11/24/14 08:24 Batch Analyst: Davis, Shanika M

Batch Method: 3010A Batch End Date: 11/25/14 07:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	PREP 1 and 2 00006	STD SI 00009		
MB 160-159156/1		3010A, 6010C		50 mL	50 mL				
LCS 160-159156/2		3010A, 6010C		50 mL	50 mL	0.25 mL	0.25 mL		
160-9451-C-1	BG03-20141114-21	3010A, 6010C	T	50 mL	50 mL				
160-9451-C-1 MS	BG03-20141114-21	3010A, 6010C	T	50 mL	50 mL	0.25 mL	0.25 mL		
160-9451-C-1 MSD	BG03-20141114-21	3010A, 6010C	T	50 mL	50 mL	0.25 mL	0.25 mL		
160-9451-C-2	BG04-20141114-21	3010A, 6010C	T	50 mL	50 mL				
160-9451-C-3	BG05-20141114-21	3010A, 6010C	T	50 mL	50 mL				
160-9451-C-4	N1-20141114-21	3010A, 6010C	T	50 mL	50 mL				

Batch Notes	
Balance ID	27150548
Final Hot Block Temperature	94.0 Degrees C
Lot # of hydrochloric acid	479398
Lot # of Nitric Acid	491743
Hot Block ID number	HOTBLOCK2
Initial Hot Block Temperature	93.3 Degrees C
Pipette ID	M-PREP-2
ID number of the thermometer	111815896
Digestion Tube/Cup Lot #	198804

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Batch Number: 160503 Batch Start Date: 12/02/14 13:02 Batch Analyst: Davis, Shanika M

Batch Method: 3010A Batch End Date: 12/03/14 09:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	PREP 1 and 2 00006	STD SI 00009		
LB 160-157827/1-A		3010A, 6010C		50 mL	50 mL				
LCS 160-160503/2		3010A, 6010C		50 mL	50 mL	0.25 mL	0.25 mL		
160-9451-B-1-A	BG03-20141114-21	3010A, 6010C	D	50 mL	50 mL				
160-9451-B-1-A MS	BG03-20141114-21	3010A, 6010C	D	50 mL	50 mL	0.25 mL	0.25 mL		
160-9451-B-1-A MSD	BG03-20141114-21	3010A, 6010C	D	50 mL	50 mL	0.25 mL	0.25 mL		
160-9451-B-2-A	BG04-20141114-21	3010A, 6010C	D	50 mL	50 mL				
160-9451-B-3-A	BG05-20141114-21	3010A, 6010C	D	50 mL	50 mL				
160-9451-B-4-A	N1-20141114-21	3010A, 6010C	D	50 mL	50 mL				

Batch Notes	
Balance ID	27150548
Final Hot Block Temperature	94.0 Degrees C
Lot # of hydrochloric acid	479398
Lot # of Nitric Acid	510250
Hot Block ID number	1
Initial Hot Block Temperature	93.3 Degrees C
Oven, Bath or Block Temperature 1	93.3 Degrees C
Pipette ID	M-PREP-2
ID number of the thermometer	111815886
Digestion Tube/Cup Lot #	201504
Uncorrected Temperature	93.3 Degrees C

Basis	Basis Description
D	Dissolved

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Batch Number: 157827 Batch Start Date: 11/18/14 16:33 Batch Analyst: Mcnutt, Joe W

Batch Method: FILTRATION Batch End Date: 11/18/14 17:33

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	HNO3 00095			
LB 160-157827/1		FILTRATION, 7470A, 7470A		250 mL	250 mL	3 mL			
160-9451-B-1	BG03-20141114-21	FILTRATION, 7470A, 7470A	D	250 mL	250 mL	3 mL			
160-9451-B-2	BG04-20141114-21	FILTRATION, 7470A, 7470A	D	250 mL	250 mL	3 mL			
160-9451-B-3	BG05-20141114-21	FILTRATION, 7470A, 7470A	D	250 mL	250 mL	3 mL			
160-9451-B-4	N1-20141114-21	FILTRATION, 7470A, 7470A	D	250 mL	250 mL	3 mL			

Batch Notes	
Filter Lot #	1128936
Lot # of Nitric Acid	460969

Basis	Basis Description
D	Dissolved

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Batch Number: 160845 Batch Start Date: 12/03/14 16:00 Batch Analyst: Souris, Matthew T

Batch Method: 7470A Batch End Date: 12/03/14 18:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	Hg QC Int. 00449			
MB 160-160845/1		7470A, 7470A		30 mL	30 mL				
LCS 160-160845/2		7470A, 7470A		30 mL	30 mL	1.5 mL			
160-9451-C-1	BG03-20141114-21	7470A, 7470A	T	30 mL	30 mL				
160-9451-C-2	BG04-20141114-21	7470A, 7470A	T	30 mL	30 mL				
160-9451-C-3	BG05-20141114-21	7470A, 7470A	T	30 mL	30 mL				
160-9451-C-4	N1-20141114-21	7470A, 7470A	T	30 mL	30 mL				

Batch Notes	
Hydroxylamine Sulfate Lot Number	498982
Digestion End Time	1800
Digestion Start Time	1600
Sulfuric Acid Lot Number	461739
Lot # of hydrochloric acid	505087
Lot # of Nitric Acid	505085
Hood ID or number	HOOD2
Hot Block ID number	HG1
Potassium Persulfate Lot Number	437725
Potassium Permanganate Lot Number	486931
NaCl Lot #	166068
Oven, Bath or Block Temperature 1	95.6 Celsius
Oven, Bath or Block Temperature 2	95.6 Celsius
Pipette ID	MT002ANDMET12ANDMET10
Stannous Chloride Lot Number	508825
SOP Number	ST-MT-0005
ID number of the thermometer	111815895
Digestion Tube/Cup Lot #	198804

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Batch Number: 161422 Batch Start Date: 12/05/14 13:00 Batch Analyst: Souris, Matthew T

Batch Method: 7470A Batch End Date: 12/05/14 15:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	Hg QC Int. 00451			
LB 160-157827/1-A		7470A, 7470A		30 mL	30 mL				
LCS 160-161422/2		7470A, 7470A		30 mL	30 mL	1.5 mL			
160-9451-B-1-A	BG03-20141114-21	7470A, 7470A	D	30 mL	30 mL				
160-9451-B-2-A	BG04-20141114-21	7470A, 7470A	D	30 mL	30 mL				
160-9451-B-3-A	BG05-20141114-21	7470A, 7470A	D	30 mL	30 mL				
160-9451-B-4-A	N1-20141114-21	7470A, 7470A	D	30 mL	30 mL				
160-9451-B-4-A MS	N1-20141114-21	7470A, 7470A	D	30 mL	30 mL	1.5 mL			
160-9451-B-4-A MSD	N1-20141114-21	7470A, 7470A	D	30 mL	30 mL	1.5 mL			

Batch Notes	
Hydroxylamine Sulfate Lot Number	498982
Digestion End Time	1500
Digestion Start Time	1300
Sulfuric Acid Lot Number	518690
Lot # of hydrochloric acid	505087
Lot # of Nitric Acid	505085
Hood ID or number	HOOD2
Hot Block ID number	HG1
Potassium Persulfate Lot Number	437725
Potassium Permanganate Lot Number	518688
NaCl Lot #	166068
Oven, Bath or Block Temperature 1	95.4 Celsius
Oven, Bath or Block Temperature 2	95.4 Celsius
Pipette ID	MT002ANDMET12ANDMET10
Stannous Chloride Lot Number	513928
SOP Number	ST-MT-0005
ID number of the thermometer	111815895
Digestion Tube/Cup Lot #	200373

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Batch Number: 161422 Batch Start Date: 12/05/14 13:00 Batch Analyst: Souris, Matthew T

Batch Method: 7470A Batch End Date: 12/05/14 15:00

Basis	Basis Description
D	Dissolved

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY

COVER PAGE
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job Number: 160-9451-1

SDG No.:

Project: START Site in New Mexico

Client Sample ID	Lab Sample ID
BG03-20141114-21	160-9451-1
BG03-20141114-21	160-9451-1 DL
BG04-20141114-21	160-9451-2
BG04-20141114-21	160-9451-2 DL
BG05-20141114-21	160-9451-3
N1-20141114-21	160-9451-4

Comments:

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: BG03-20141114-21 Lab Sample ID: 160-9451-1

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG ID.:

Matrix: Water Date Sampled: 11/14/2014 10:30

Reporting Basis: WET Date Received: 11/15/2014 08:45

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
	Alkalinity	380	5.0	0.54	mg/L		B	1	310.1
	Bicarbonate Alkalinity as CaCO3	380	5.0	0.54	mg/L		B	1	310.1
	Carbonate Alkalinity as CaCO3	ND	5.0	0.54	mg/L			1	310.1
	pH	7.54	0.100	0.100	SU		HF	1	150.1
	Total Dissolved Solids (TDS)	620	5.0	3.5	mg/L			1	160.1
14797-55-8	Nitrate as N	0.059	0.020	0.0040	mg/L			1	300.0
14797-65-0	Nitrite as N	ND	0.020	0.0030	mg/L			1	300.0
16984-48-8	Fluoride	0.97	0.10	0.010	mg/L			1	300.0
16887-00-6	Chloride	13	10	1.0	mg/L			50	300.0
24959-67-9	Bromide	0.13	0.25	0.025	mg/L	J		1	300.0
14808-79-8	Sulfate	76	25	2.5	mg/L			50	300.0
14265-44-2	Orthophosphate	ND	0.50	0.078	mg/L			1	300.0

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: BG04-20141114-21 Lab Sample ID: 160-9451-2

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG ID.:

Matrix: Water Date Sampled: 11/14/2014 11:10

Reporting Basis: WET Date Received: 11/15/2014 08:45

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
	Alkalinity	230	5.0	0.54	mg/L		B	1	310.1
	Bicarbonate Alkalinity as CaCO3	230	5.0	0.54	mg/L		B	1	310.1
	Carbonate Alkalinity as CaCO3	ND	5.0	0.54	mg/L			1	310.1
	pH	7.22	0.100	0.100	SU		HF	1	150.1
	Total Dissolved Solids (TDS)	350	5.0	3.5	mg/L			1	160.1
14797-55-8	Nitrate as N	0.028	0.020	0.0040	mg/L			1	300.0
14797-65-0	Nitrite as N	ND	0.020	0.0030	mg/L			1	300.0
16984-48-8	Fluoride	0.34	0.10	0.010	mg/L			1	300.0
16887-00-6	Chloride	11	10	1.0	mg/L			50	300.0
24959-67-9	Bromide	0.047	0.25	0.025	mg/L	J		1	300.0
14808-79-8	Sulfate	22	5.0	0.50	mg/L			10	300.0
14265-44-2	Orthophosphate	ND	0.50	0.078	mg/L			1	300.0

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: BG05-20141114-21 Lab Sample ID: 160-9451-3

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG ID.:

Matrix: Water Date Sampled: 11/14/2014 11:45

Reporting Basis: WET Date Received: 11/15/2014 08:45

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
	Alkalinity	140	5.0	0.54	mg/L		B	1	310.1
	Bicarbonate Alkalinity as CaCO3	140	5.0	0.54	mg/L		B	1	310.1
	Carbonate Alkalinity as CaCO3	ND	5.0	0.54	mg/L			1	310.1
	pH	7.41	0.100	0.100	SU		HF	1	150.1
	Total Dissolved Solids (TDS)	310	5.0	3.5	mg/L			1	160.1
14797-55-8	Nitrate as N	0.017	0.020	0.0040	mg/L	J		1	300.0
14797-65-0	Nitrite as N	ND	0.020	0.0030	mg/L			1	300.0
16984-48-8	Fluoride	0.38	0.10	0.010	mg/L			1	300.0
16887-00-6	Chloride	5.0	0.20	0.020	mg/L			1	300.0
24959-67-9	Bromide	ND	0.25	0.025	mg/L			1	300.0
14808-79-8	Sulfate	13	0.50	0.050	mg/L			1	300.0
14265-44-2	Orthophosphate	ND	0.50	0.078	mg/L			1	300.0

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: N1-20141114-21 Lab Sample ID: 160-9451-4

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG ID.:

Matrix: Water Date Sampled: 11/14/2014 12:45

Reporting Basis: WET Date Received: 11/15/2014 08:45

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
	Alkalinity	ND	5.0	0.54	mg/L			1	310.1
	Bicarbonate Alkalinity as CaCO3	ND	5.0	0.54	mg/L			1	310.1
	Carbonate Alkalinity as CaCO3	ND	5.0	0.54	mg/L			1	310.1
	pH	5.73	0.100	0.100	SU		HF	1	150.1
	Total Dissolved Solids (TDS)	ND	5.0	3.5	mg/L			1	160.1
14797-55-8	Nitrate as N	ND	0.020	0.0040	mg/L			1	300.0
14797-65-0	Nitrite as N	ND	0.020	0.0030	mg/L			1	300.0
16984-48-8	Fluoride	ND	0.10	0.010	mg/L			1	300.0
16887-00-6	Chloride	0.098	0.20	0.020	mg/L	J		1	300.0
24959-67-9	Bromide	ND	0.25	0.025	mg/L			1	300.0
14808-79-8	Sulfate	ND	0.50	0.050	mg/L			1	300.0
14265-44-2	Orthophosphate	ND	0.50	0.078	mg/L			1	300.0

2-IN
CALIBRATION QUALITY CONTROL
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Analyst: MFM Batch Start Date: 12/01/2014

Reporting Units: SU Analytical Batch No.: 160158

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
4	ICV	12:33	pH	7.030	7.00	100	99.0-101.0		pH Buffer 7SS_00020
11	CCV	12:36	pH	7.040	7.00	101	99.0-101.0		pH Buffer 7SS_00020

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM II-IN

2-IN
CALIBRATION QUALITY CONTROL
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Analyst: AMF Batch Start Date: 11/18/2014

Reporting Units: mg/L Analytical Batch No.: 157774

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
1	ICV	10:28	Fluoride	1.01	1.00	101	90-110		IC 2nd Source_00007
			Chloride	2.02	2.00	101	90-110		IC 2nd Source_00007
			Bromide	2.04	2.00	102	90-110		IC 2nd Source_00007
			Sulfate	7.91	8.00	99	90-110		IC 2nd Source_00007
2	ICB	10:42	Fluoride	ND					
			Chloride	0.0218				J	
			Bromide	ND					
			Sulfate	0.0607				J	
11	CCV	12:48	Fluoride	1.00	1.00	100	90-110		IC Cal High_00032
			Chloride	1.95	2.00	98	90-110		IC Cal High_00032
			Bromide	2.00	2.00	100	90-110		IC Cal High_00032
			Sulfate	7.71	8.00	96	90-110		IC Cal High_00032
12	CCB	13:02	Fluoride	ND					
			Chloride	ND					
			Bromide	ND					
			Sulfate	ND					
22	CCV	15:21	Fluoride	0.999	1.00	100	90-110		IC Cal High_00032
			Chloride	1.98	2.00	99	90-110		IC Cal High_00032
			Bromide	2.00	2.00	100	90-110		IC Cal High_00032
			Sulfate	7.66	8.00	96	90-110		IC Cal High_00032
23	CCB	15:35	Fluoride	ND					
			Chloride	ND					
			Bromide	ND					
			Sulfate	ND					
33	CCV	18:15	Chloride	1.85	2.00	92	90-110		IC Cal High_00032
			Sulfate	7.31	8.00	91	90-110		IC Cal High_00032
34	CCB	18:29	Chloride	ND					
			Sulfate	ND					

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM II-IN

2-IN
CALIBRATION QUALITY CONTROL
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Analyst: AMF Batch Start Date: 11/15/2014

Reporting Units: mg/L Analytical Batch No.: 158759

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
1	ICV	12:42	Nitrate as N	0.405	0.400	101	90-110		IC 2nd Source_00007
			Nitrite as N	0.149	0.160	93	90-110		IC 2nd Source_00007
			Fluoride	0.999	1.00	100	90-110		IC 2nd Source_00007
			Chloride	1.96	2.00	98	90-110		IC 2nd Source_00007
			Bromide	2.02	2.00	101	90-110		IC 2nd Source_00007
			Sulfate	7.75	8.00	97	90-110		IC 2nd Source_00007
			Orthophosphate	7.76	8.00	97	90-110		IC 2nd Source_00007
2	ICB	12:56	Nitrate as N	ND					
			Nitrite as N	ND					
			Fluoride	ND					
			Chloride	ND					
			Bromide	ND					
			Sulfate	ND					
			Orthophosphate	ND					
13	CCV	15:29	Nitrate as N	0.404	0.400	101	90-110		IC Cal High_00031
			Nitrite as N	0.158	0.160	99	90-110		IC Cal High_00031
			Fluoride	1.00	1.00	100	90-110		IC Cal High_00031
			Chloride	1.93	2.00	97	90-110		IC Cal High_00031
			Bromide	2.00	2.00	100	90-110		IC Cal High_00031
			Sulfate	7.66	8.00	96	90-110		IC Cal High_00031
			Orthophosphate	7.83	8.00	98	90-110		IC Cal High_00031
14	CCB	15:43	Nitrate as N	ND					
			Nitrite as N	ND					
			Fluoride	ND					
			Chloride	ND					
			Bromide	ND					
			Sulfate	ND					
			Orthophosphate	ND					
25	CCV	18:16	Nitrate as N	0.415	0.400	104	90-110		IC Cal High_00031
			Nitrite as N	0.171	0.160	107	90-110		IC Cal High_00031
			Fluoride	0.997	1.00	100	90-110		IC Cal High_00031
			Chloride	2.00	2.00	100	90-110		IC Cal High_00031
			Bromide	2.04	2.00	102	90-110		IC Cal High_00031
			Sulfate	7.76	8.00	97	90-110		IC Cal High_00031
			Orthophosphate	7.80	8.00	98	90-110		IC Cal High_00031
26	CCB	18:30	Nitrate as N	ND					
			Nitrite as N	0.0106				J	
			Fluoride	ND					
			Chloride	0.0570				J	

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM II-IN

2-IN
CALIBRATION QUALITY CONTROL
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Analyst: AMF Batch Start Date: 11/15/2014

Reporting Units: mg/L Analytical Batch No.: 158759

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
26	CCB	18:30	Bromide	ND					
			Sulfate	0.0577				J	
			Orthophosphate	ND					
36	CCV	20:49	Nitrate as N	0.404	0.400	101	90-110		IC Cal High_00031
			Nitrite as N	0.175	0.160	109	90-110		IC Cal High_00031
			Fluoride	0.997	1.00	100	90-110		IC Cal High_00031
			Chloride	2.07	2.00	104	90-110		IC Cal High_00031
			Bromide	2.02	2.00	101	90-110		IC Cal High_00031
			Sulfate	7.71	8.00	96	90-110		IC Cal High_00031
			Orthophosphate	7.88	8.00	99	90-110		IC Cal High_00031
37	CCB	21:03	Nitrate as N	ND					
			Nitrite as N	0.0122				J	
			Fluoride	ND					
			Chloride	0.0954				J	
			Bromide	ND					
			Sulfate	0.0619				J	
			Orthophosphate	ND					
45	CCV	22:54	Nitrate as N	0.396	0.400	99	90-110		IC Cal High_00031
			Nitrite as N	0.173	0.160	108	90-110		IC Cal High_00031
			Fluoride	0.990	1.00	99	90-110		IC Cal High_00031
			Chloride	2.03	2.00	102	90-110		IC Cal High_00031
			Bromide	1.99	2.00	100	90-110		IC Cal High_00031
			Sulfate	7.68	8.00	96	90-110		IC Cal High_00031
			Orthophosphate	7.84	8.00	98	90-110		IC Cal High_00031
46	CCB	23:08	Nitrate as N	ND					
			Nitrite as N	0.0144				J	
			Fluoride	ND					
			Chloride	0.124				J	
			Bromide	ND					
			Sulfate	0.0700				J	
			Orthophosphate	ND					

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM II-IN

3-IN
METHOD BLANK
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Method	Lab Sample ID	Analyte	Result	Qual	Units	RL	Dil
Batch ID: 158738 Date: 11/20/2014 08:30							
160.1	MB 160-158738/1	Total Dissolved Solids (TDS)	ND		mg/L	5.0	1
Batch ID: 158759 Date: 11/15/2014 13:10							
300.0	MB 160-158759/3	Nitrate as N	ND		mg/L	0.020	1
300.0	MB 160-158759/3	Nitrite as N	ND		mg/L	0.020	1
300.0	MB 160-158759/3	Fluoride	ND		mg/L	0.10	1
300.0	MB 160-158759/3	Chloride	ND		mg/L	0.20	1
300.0	MB 160-158759/3	Bromide	ND		mg/L	0.25	1
300.0	MB 160-158759/3	Sulfate	ND		mg/L	0.50	1
300.0	MB 160-158759/3	Orthophosphate	ND		mg/L	0.50	1
Batch ID: 157774 Date: 11/18/2014 10:56							
300.0	MB 160-157774/3	Fluoride	ND		mg/L	0.10	1
300.0	MB 160-157774/3	Chloride	ND		mg/L	0.20	1
300.0	MB 160-157774/3	Bromide	ND		mg/L	0.25	1
300.0	MB 160-157774/3	Sulfate	ND		mg/L	0.50	1
Batch ID: 158800 Date: 11/21/2014 14:46							
310.1	MB 160-158800/1	Alkalinity	1.25	J	mg/L	1.3	1
310.1	MB 160-158800/1	Bicarbonate Alkalinity as CaCO3	1.25	J	mg/L	1.3	1
310.1	MB 160-158800/1	Carbonate Alkalinity as CaCO3	ND		mg/L	1.3	1

FORM III-IN

5-IN
MATRIX SPIKE SAMPLE RECOVERY
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 158759 Date: 11/15/2014 22:27											
300.0	160-9451-4	Nitrate as N	ND		mg/L						
300.0	160-9451-4 MS	Nitrate as N	0.408		mg/L	0.400	102	90-110			
300.0	160-9451-4	Nitrite as N	ND		mg/L						
300.0	160-9451-4 MS	Nitrite as N	0.120		mg/L	0.100	120	90-110			F1
300.0	160-9451-4	Fluoride	ND		mg/L						
300.0	160-9451-4 MS	Fluoride	2.05		mg/L	2.00	102	90-110			
300.0	160-9451-4	Chloride	0.098	J	mg/L						
300.0	160-9451-4 MS	Chloride	1.98		mg/L	2.00	94	90-110			
300.0	160-9451-4	Bromide	ND		mg/L						
300.0	160-9451-4 MS	Bromide	2.03		mg/L	2.00	102	90-110			
300.0	160-9451-4	Sulfate	ND		mg/L						
300.0	160-9451-4 MS	Sulfate	3.73		mg/L	4.00	93	90-110			
300.0	160-9451-4	Orthophosphate	ND		mg/L						
300.0	160-9451-4 MS	Orthophosphate	3.75		mg/L	4.00	94	90-110			

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM V-IN

6-IN
DUPLICATE
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Matrix: Water

Method	Client Sample ID	Lab Sample ID	Analyte	Result	Unit	RPD	RPD Limit	Qual
Batch ID: 160158 Date: 12/01/2014 12:33								
150.1	BG03-20141114-21	160-9451-1	pH	7.54	SU			
150.1	BG03-20141114-21	160-9451-1 DU	pH	7.580	SU	0.5	5	

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VI-IN

7A-IN
LAB CONTROL SAMPLE
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 160158	Date: 12/01/2014 12:33										
						LCS Source: pH Buffer 7SS_00020					
150.1	LCS 160-160158/5	pH	7.030		SU	7.00	100	99.0-10 1.0			
Batch ID: 158738	Date: 11/20/2014 08:30										
						LCS Source: TDS LCS_00036					
160.1	LCS 160-158738/2	Total Dissolved Solids (TDS)	511		mg/L	500	102	90-110			
Batch ID: 158759	Date: 11/15/2014 13:24										
						LCS Source: IC Cal High_00031					
300.0	LCS 160-158759/4	Nitrate as N	0.399		mg/L	0.400	100	90-110			
300.0	LCS 160-158759/4	Nitrite as N	0.151		mg/L	0.160	94	90-110			
300.0	LCS 160-158759/4	Fluoride	0.999		mg/L	1.00	100	90-110			
300.0	LCS 160-158759/4	Chloride	1.95		mg/L	2.00	98	90-110			
300.0	LCS 160-158759/4	Bromide	2.01		mg/L	2.00	100	90-110			
300.0	LCS 160-158759/4	Sulfate	7.78		mg/L	8.00	97	90-110			
300.0	LCS 160-158759/4	Orthophosphate	7.78		mg/L	8.00	97	90-110			
Batch ID: 157774	Date: 11/18/2014 11:10										
						LCS Source: IC Cal High_00032					
300.0	LCS 160-157774/4	Fluoride	0.988		mg/L	1.00	99	90-110			
300.0	LCS 160-157774/4	Chloride	1.96		mg/L	2.00	98	90-110			
300.0	LCS 160-157774/4	Bromide	2.00		mg/L	2.00	100	90-110			
300.0	LCS 160-157774/4	Sulfate	7.64		mg/L	8.00	95	90-110			
Batch ID: 158800	Date: 11/21/2014 14:46										
						LCS Source: Alk Int._00009					
310.1	LCS 160-158800/2	Alkalinity	186		mg/L	200	93	90-110			
310.1	LCS 160-158800/2	Bicarbonate Alkalinity as CaCO3	186		mg/L	200	93	90-110			

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA-IN

7A-IN
HIGH LEVEL CONTROL SAMPLE
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 158800	Date: 11/21/2014 14:46										
						LCS Source: Alk Int._00009					
310.1	HLCS 160-158800/3	Alkalinity	374		mg/L	400	94	90-110			
310.1	HLCS 160-158800/3	Bicarbonate Alkalinity as CaCO3	374		mg/L	400	94	90-110			

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA-IN

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job Number: 160-9451-1

SDG Number:

Matrix: Water Instrument ID: 5STAR#4

Method: 310.1 MDL Date: 01/19/2012 14:28

Analyte	Wavelength/ Mass	RL (mg/L)	MDL (mg/L)
Alkalinity		5	0.542
Bicarbonate Alkalinity as CaCO3		5	0.542
Carbonate Alkalinity as CaCO3		5	0.542

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job Number: 160-9451-1

SDG Number:

Matrix: Water Instrument ID: 5STAR#4

Method: 310.1 XMDL Date: 01/19/2012 14:29

Analyte	Wavelength/ Mass	XRL (mg/L)	XMDL (mg/L)
Alkalinity		5	0.542
Bicarbonate Alkalinity as CaCO3		5	0.542
Carbonate Alkalinity as CaCO3		5	0.542

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job Number: 160-9451-1

SDG Number:

Matrix: Water Instrument ID: A111

Method: 150.1 RL Date: 01/01/2011 14:25

Analyte	Wavelength/ Mass	RL (SU)	
pH		0.1	

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job Number: 160-9451-1

SDG Number:

Matrix: Water Instrument ID: A111

Method: 150.1 XRL Date: 01/01/2011 14:25

Analyte	Wavelength/ Mass	XRL (SU)	
pH		0.1	

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job Number: 160-9451-1

SDG Number:

Matrix: Water Instrument ID: NOEQUIP

Method: 160.1 MDL Date: 10/18/2011 14:16

Analyte	Wavelength/ Mass	RL (mg/L)	MDL (mg/L)
Total Dissolved Solids (TDS)		5	3.497

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job Number: 160-9451-1

SDG Number:

Matrix: Water Instrument ID: NOEQUIP

Method: 160.1 XMDL Date: 10/18/2011 14:17

Analyte	Wavelength/ Mass	XRL (mg/L)	XMDL (mg/L)
Total Dissolved Solids (TDS)		5	3.497

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job Number: 160-9451-1

SDG Number:

Matrix: Water Instrument ID: CIC2500

Method: 300.0 MDL Date: 04/24/2013 10:20

Analyte	Wavelength/ Mass	RL (mg/L)	MDL (mg/L)
Sulfate		0.5	0.05

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job Number: 160-9451-1

SDG Number:

Matrix: Water Instrument ID: CIC2500

Method: 300.0 XMDL Date: 04/24/2013 10:14

Analyte	Wavelength/ Mass	XRL (mg/L)	XMDL (mg/L)
Sulfate		0.5	0.05

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job Number: 160-9451-1

SDG Number:

Matrix: Water Instrument ID: IC2500

Method: 300.0 MDL Date: 04/24/2013 10:20

Analyte	Wavelength/ Mass	RL (mg/L)	MDL (mg/L)
Bromide		0.25	0.025
Chloride		0.2	0.02
Fluoride		0.1	0.01
Nitrate as N		0.02	0.004
Nitrite as N		0.02	0.003
Orthophosphate		0.5	0.078
Sulfate		0.5	0.05

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job Number: 160-9451-1

SDG Number:

Matrix: Water Instrument ID: IC2500

Method: 300.0 XMDL Date: 04/24/2013 10:14

Analyte	Wavelength/ Mass	XRL (mg/L)	XMDL (mg/L)
Bromide		0.25	0.025
Chloride		0.2	0.02
Fluoride		0.1	0.01
Nitrate as N		0.02	0.004
Nitrite as N		0.02	0.003
Orthophosphate		0.5	0.078
Sulfate		0.5	0.05

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Instrument ID: 5STAR#4 Analysis Method: 310.1

Start Date: 11/21/2014 14:46 End Date: 11/21/2014 14:46

Lab Sample Id	D/F	Type	Time	Analytes																										
				Alk	BALKCC	CarAlk																								
MB 160-158800/1	1	T	14:46	X	X	X																								
LCS 160-158800/2	1	T	14:46	X	X																									
HLCS 160-158800/3	1	T	14:46	X	X																									
ZZZZZZ			14:46																											
ZZZZZZ			14:46																											
ZZZZZZ			14:46																											
ZZZZZZ			14:46																											
160-9451-1	1	T	14:46	X	X	X																								
160-9451-2	1	T	14:46	X	X	X																								
160-9451-3	1	T	14:46	X	X	X																								
160-9451-4	1	T	14:46	X	X	X																								
ZZZZZZ			14:46																											
ZZZZZZ			14:46																											
ZZZZZZ			14:46																											
ZZZZZZ			14:46																											
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ZZZZZZ			14:46																											
ZZZZZZ			14:46																											

Prep Types:
T = Total/NA

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Instrument ID: A111 Analysis Method: 150.1

Start Date: 12/01/2014 12:33 End Date: 12/01/2014 12:36

Lab Sample Id	D/F	Type	Time	Analytes																								
				pH																								
IC 160-160158/1			12:33	X																								
IC 160-160158/2			12:33	X																								
IC 160-160158/3			12:33	X																								
ICV 160-160158/4	1		12:33	X																								
LCS 160-160158/5	1	T	12:33	X																								
160-9451-1	1	T	12:33	X																								
160-9451-1 DU	1	T	12:33	X																								
160-9451-2	1	T	12:33	X																								
160-9451-3	1	T	12:33	X																								
160-9451-4	1	T	12:33	X																								
CCV 160-160158/11	1		12:36	X																								

Prep Types:
T = Total/NA

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Instrument ID: NOEQUIP Analysis Method: 160.1

Start Date: 11/20/2014 08:30 End Date: 11/20/2014 08:30

Lab Sample Id	D/F	Type	Time	Analytes																								
				TDS																								
MB 160-158738/1	1	T	08:30	X																								
LCS 160-158738/2	1	T	08:30	X																								
ZZZZZZ			08:30																									
ZZZZZZ			08:30																									
160-9451-2	1	T	08:30	X																								
ZZZZZZ			08:30																									
160-9451-1	1	T	08:30	X																								
160-9451-3	1	T	08:30	X																								
160-9451-4	1	T	08:30	X																								
ZZZZZZ			08:30																									
ZZZZZZ			08:30																									
ZZZZZZ			08:30																									
ZZZZZZ			08:30																									

Prep Types:
T = Total/NA

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Instrument ID: CIC2500 Analysis Method: 300.0

Start Date: 11/18/2014 10:28 End Date: 11/19/2014 01:13

Lab Sample Id	D/F	Type	Time	Analytes																										
				Br	Cl-	F	SO4																							
ICV 160-157774/1	1		10:28	X	X	X	X																							
ICB 160-157774/2	1		10:42	X	X	X	X																							
MB 160-157774/3	1	T	10:56	X	X	X	X																							
LCS 160-157774/4	1	T	11:10	X	X	X	X																							
ZZZZZZ			11:24																											
ZZZZZZ			11:38																											
ZZZZZZ			11:52																											
ZZZZZZ			12:06																											
ZZZZZZ			12:20																											
ZZZZZZ			12:34																											
CCV 160-157774/11	1		12:48	X	X	X	X																							
CCB 160-157774/12	1		13:02	X	X	X	X																							
ZZZZZZ			13:15																											
ZZZZZZ			13:29																											
ZZZZZZ			13:43																											
ZZZZZZ			13:57																											
ZZZZZZ			14:11																											
ZZZZZZ			14:25																											
ZZZZZZ			14:39																											
ZZZZZZ			14:53																											
ZZZZZZ			15:07																											
CCV 160-157774/22	1		15:21	X	X	X	X																							
CCB 160-157774/23	1		15:35	X	X	X	X																							
160-9451-2 DL	10	T	16:52				X																							
ZZZZZZ			17:06																											
ZZZZZZ			17:20																											
ZZZZZZ			17:34																											
ZZZZZZ			17:47																											
ZZZZZZ			18:01																											
CCV 160-157774/33	1		18:15		X		X																							
CCB 160-157774/34	1		18:29		X		X																							
ZZZZZZ			18:43																											
ZZZZZZ			18:57																											
ZZZZZZ			19:11																											
ZZZZZZ			19:25																											
ZZZZZZ			19:39																											
ZZZZZZ			19:53																											
ZZZZZZ			20:07																											
ZZZZZZ			20:21																											
ZZZZZZ			20:35																											
CCV 160-157774/44			20:48																											

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Instrument ID: CIC2500 Analysis Method: 300.0

Start Date: 11/18/2014 10:28 End Date: 11/19/2014 01:13

Lab Sample Id	D/F	Type	Time	Analytes																									
				Br	Cl-	F	SO4																							
CCB 160-157774/45			21:02																										
ZZZZZZ			21:16																										
ZZZZZZ			21:30																										
ZZZZZZ			21:44																										
ZZZZZZ			21:58																										
ZZZZZZ			22:12																										
ZZZZZZ			22:26																										
ZZZZZZ			22:40																										
ZZZZZZ			22:54																										
CCV 160-157774/54			23:08																										
CCB 160-157774/55			23:22																										
ZZZZZZ			23:36																										
ZZZZZZ			23:49																										
ZZZZZZ			00:03																										
ZZZZZZ			00:17																										
ZZZZZZ			00:31																										
ZZZZZZ			00:45																										
CCV 160-157774/62			00:59																										
CCB 160-157774/63			01:13																										

Prep Types:
T = Total/NA

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Instrument ID: IC2500 Analysis Method: 300.0

Start Date: 11/15/2014 12:42 End Date: 11/15/2014 23:08

Lab Sample Id	D/F	Type	Time	Analytes																										
				Br	Cl-	F	N-No2	NO3	PO4	SO4																				
ICV 160-158759/1	1		12:42	X	X	X	X	X	X	X																				
ICB 160-158759/2	1		12:56	X	X	X	X	X	X	X																				
MB 160-158759/3	1	T	13:10	X	X	X	X	X	X	X																				
LCS 160-158759/4	1	T	13:24	X	X	X	X	X	X	X																				
ZZZZZZ			13:38																											
ZZZZZZ			13:52																											
ZZZZZZ			14:05																											
ZZZZZZ			14:19																											
ZZZZZZ			14:33																											
ZZZZZZ			14:47																											
ZZZZZZ			15:01																											
ZZZZZZ			15:15																											
CCV 160-158759/13	1		15:29	X	X	X	X	X	X	X																				
CCB 160-158759/14	1		15:43	X	X	X	X	X	X	X																				
ZZZZZZ			15:57																											
ZZZZZZ			16:11																											
ZZZZZZ			16:25																											
ZZZZZZ			16:39																											
ZZZZZZ			16:53																											
ZZZZZZ			17:06																											
ZZZZZZ			17:20																											
ZZZZZZ			17:34																											
ZZZZZZ			17:48																											
ZZZZZZ			18:02																											
CCV 160-158759/25	1		18:16	X	X	X	X	X	X	X																				
CCB 160-158759/26	1		18:30	X	X	X	X	X	X	X																				
ZZZZZZ			18:44																											
ZZZZZZ			18:58																											
ZZZZZZ			19:12																											
ZZZZZZ			19:26																											
ZZZZZZ			19:40																											
ZZZZZZ			19:53																											
ZZZZZZ			20:07																											
160-9451-1	1	T	20:21	X		X	X	X	X																					
160-9451-1 DL	50	T	20:35		X					X																				
CCV 160-158759/36	1		20:49	X	X	X	X	X	X	X																				
CCB 160-158759/37	1		21:03	X	X	X	X	X	X	X																				
160-9451-2	1	T	21:17	X		X	X	X	X																					
160-9451-2 DL	50	T	21:31		X																									

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Instrument ID: IC2500 Analysis Method: 300.0

Start Date: 11/15/2014 12:42 End Date: 11/15/2014 23:08

Lab Sample Id	D/F	Type	Time	Analytes																										
				Br	Cl-	F	N-No2	NO3	PO4	SO4																				
160-9451-3	1	T	21:45	X	X	X	X	X	X	X																				
ZZZZZZ			21:59																											
160-9451-4	1	T	22:13	X	X	X	X	X	X	X																				
160-9451-4 MS	1	T	22:27	X	X	X	X	X	X	X																				
ZZZZZZ			22:41																											
CCV 160-158759/45	1		22:54	X	X	X	X	X	X	X																				
CCB 160-158759/46	1		23:08	X	X	X	X	X	X	X																				

Prep Types:
T = Total/NA

FORM XIII-IN

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

St. Louis
Data Review Checklist
Ion Chromatography
Method 300.0/9056A

Job#(s): 9490-1, 9236-1 AF 11/20-14 9451-1, 9136-1 280-61815-1 Batch#(s): 157774, 157775

Run Date: 11/18 Due Date: 11/13 NCM# 1) 44464 2) 44466 3) 44467 4) 44468 5) 44469 Instrument ID: ICS2500

	Yes	No	N/A	2nd Level
A. Calibration/Instrument Run QC 1. Instrument calibrated (if applicable) using a blank and the required minimum number of calibration standards?	✓			✓
2. Is the initial calibration curve correlation coefficient ≥ 0.995?	✓			✓
3. ICV/CCV analyzed at the appropriate frequency and within control limits?	✓			✓
4. ICB/CCB analyzed at appropriate frequency and within +/- RL?	✓			✓
5. Calibration curve is updated in the method with the correct retention times?	✓			✓
6. Is the area count for the curve appropriate for the calibration levels in use? (verify one point on the calibration)	✓			✓
B. Sample Results 1. Samples with concentration > the linear range or affected by interferences diluted and reanalyzed? NCM-1,3	✓			✓
2. All reported results bracketed by in control QC?	✓			✓
3. Sample analyses done within holding time? NCM-4	✓	✓		✓
4. All dilutions were checked and verified against the "straight" runs?	✓			✓
5. Perchlorate: are all sample interferences less than the Matrix Conductivity Threshold observed in the Inst. Performance Check/INF?			✓	✓
C. Preparation/Matrix QC 1. LCS done per prep batch and within QC limits?	✓			✓
2. Method blank done per prep batch and <RL or CRDL (CLP)?	✓			✓
3. MS run at required frequency and within limits? NCM-2,5	✓	✓		✓
4. MS or Dup run at required frequency and RPD within SOP limits?	✓			✓
D. Other 1. Are all non-conformances documented appropriately?	✓			✓
2. Current MDL data on file?	✓			✓
3. Calculations checked for error?			✓	✓
4. Were manual integrations checked for appropriateness, correctness and proper documentation (before/after chromatograms, reason, analyst, date?	✓			✓
5. Transcriptions checked for error?	✓			✓
6. All client/project specific requirements met?	✓			✓
7. Date/time of analysis verified as correct?	✓			✓

Analyst: Alicia Flaker Date: 11-20-14

Comments:

2nd Level: JB Date: 11/20/14

Due: 11/13

TestAmerica St. Louis
Anion Worksheet

Analyst: AF Method(s): [X] 300.0 [ ] 9056A

Date: 11-18-14 Instrument: ICS2500

Sample Sequence: 111814 Jack Calibration Sequence: 111414 CAL Jack

All result as ppb

WL-2147, Batch #: ~~157753~~ AF 11-19-14 157774, 157775 28day 48hr

Lot Number	Sample ID	Fluoride	Chloride	Nitrite	Bromide	Nitrate	Phosphate	Sulfate	Chlorate	Iodide
weston - 9490-1	943-21 9490-3	1X	200X	20 ND	1X	20X	1X	200X		
	943-22 9490-4	1X	200X	20X ND	1X	20X	1X	200X		
	CS-21 9490-2	1X	20X	20X ND	1X	20X	1X	200X		
				RR - ICV ↓						
CH2M 9236-1	9236-8					200X - Run ooH(2X)				
weston 9451-1	9451-2							10X		
CH2M 9136-1	9136-1			- RR poor injection				1X		
280-61815-1	61815-1		20X					1X		
	2		20X					1X		
	3		20X					1X		
	4		20X					1X		
	5		1X					1X		
	6		20X					1X		
280-61856-1	61856-1		20X					1X		
	2		20X					1X		
	3		20X					1X	RR CCV ↑	
	4		20X					1X		
	5		1X					1X		
	6		20X					1X		
	7		20X					1X		

Form: INORG-0080, Revised 7/8/2014
SOP: ST-WC-0028

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

St. Louis
Data Review Checklist
Ion Chromatography
Method 300.0/9056A

Job#(s): 9437-1, 9412-1, 9407-1, 9438-1, 9451-1 9326-1 Batch#(s): 158759

Run Date: 11/15 Due Date: 11/14 NCM# 1) 44632 2) 44633 3) 44634 Instrument ID: ICS2500

	Yes	No	N/A	2nd Level
A. Calibration/Instrument Run QC 1. Instrument calibrated (if applicable) using a blank and the required minimum number of calibration standards?	✓			✓
2. Is the initial calibration curve correlation coefficient ≥ 0.995?	✓			✓
3. ICV/CCV analyzed at the appropriate frequency and within control limits?	✓			✓
4. ICB/CCB analyzed at appropriate frequency and within +/- RL?	✓			✓
5. Calibration curve is updated in the method with the correct retention times?	✓			✓
6. Is the area count for the curve appropriate for the calibration levels in use? (verify one point on the calibration)	✓			✓
B. Sample Results 1. Samples with concentration > the linear range or affected by interferences diluted and reanalyzed? NCM-1	✓			✓
2. All reported results bracketed by in control QC?	✓			✓
3. Sample analyses done within holding time? NCM-2	✓	✓		✓
4. All dilutions were checked and verified against the "straight" runs?	✓			✓
5. Perchlorate: are all sample interferences less than the Matrix Conductivity Threshold observed in the Inst. Performance Check/INF?			✓	✓
C. Preparation/Matrix QC 1. LCS done per prep batch and within QC limits?	✓			✓
2. Method blank done per prep batch and <RL or CRDL (CLP)?	✓			✓
3. MS run at required frequency and within limits? NCM-3	✓	✓		✓
4. MS or Dup run at required frequency and RPD within SOP limits?	✓			✓
D. Other 1. Are all non-conformances documented appropriately?	✓			✓
2. Current MDL data on file?	✓			✓
3. Calculations checked for error?			✓	✓
4. Were manual integrations checked for appropriateness, correctness and proper documentation (before/after chromatograms, reason, analyst, date?	✓			✓
5. Transcriptions checked for error?	✓			✓
6. All client/project specific requirements met?	✓			✓
7. Date/time of analysis verified as correct?	✓			✓

Analyst: Alicia Slaker Date: ~~11-20-14~~ 11-21-14 AF 11-4-14

Comments:

2nd Level: JB Date: 11/24/14

Due: ~~11/28~~ 11/14.
JB 11/19/14

TestAmerica St. Louis
Anion Worksheet

Analyst: AF

Method(s): [X] 300.0 [ ] 9056A

Date: 11-15-14

Instrument: ICS2500

Sample Sequence: 111514 Jack

Calibration Sequence: 111414 CAL Jack

All result as ppb

Batch #: 158759

Lot Number	Sample ID	Fluoride	Chloride	Nitrite	Bromide	Nitrate	Phosphate	Sulfate	Chlorate	Iodide
9437-1	9453-1	2x	40x	2x		2x		40x		
	2	2x	40x	2x		2x		40x		
	3	2x	40x	2x		40x		40x		
	4	2x	40x	2x		40x		40x		
	5	2x	40x	2x		40x		40x	- Rcvd OOH	
	6	2x	40x	2x		40x		40x		
9412-1	9412-12		20x			20x		20x		
9407-1	9434-1		20x			20x		20x	OOH, but w/in 2X	
9437-1	9437-1		20x			20x		20x		
	2		20x			20x		20x		
9438-1	9438-1		100x			100x		500x		
	2	AF 11-21-14	20x ~~100x~~	20x		20x		500x		
9451-1	9451-1	1x	50x	1x	1x	1x	1x	50x		
	9451-2	1x	50x	1x	1x	1x	1x	10x ~~50x~~	RR 10x AF 11-17-14	
	3	1x	1x	1x	1x	1x	1x	1x		
	4	1x	1x	1x	1x	1x	1x	1x		
9326-1	9326-1	1x	1x							

Form: INORG-0080, Revised 7/8/2014
SOP: ST-WC-0028

Title:
Datasource: SLIC03_local
Location: JACK\SEQUENCES\14NOV
Timebase: JACK
#Samples: 47
Created: 11/15/2014 12:41:28 PM by FLAKERA
Last Update: 11/21/2014 10:53:11 AM by FLAKERA

No.	Name	Type	Pos.	Inj. Vol.	Program	Method	Status	Inj. Date/Time
1	ICV	Unknown	1	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 12:42:27 PM
2	ICB	Unknown	2	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 12:56:22 PM
3	MB	Unknown	3	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 1:10:17 PM
4	LCS	Unknown	4	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 1:24:12 PM
5	9453-A-1 @2	Unknown	5	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 1:38:08 PM
6	9453-A-1 @40	Unknown	6	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 1:52:03 PM
7	9453-A-1 DU @2	Unknown	7	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 2:05:58 PM
8	9453-A-1 DU @40	Unknown	8	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 2:19:53 PM
9	9453-A-1 MS @2	Unknown	9	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 2:33:48 PM
10	9453-A-1 MS @40	Unknown	10	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 2:47:43 PM
11	9453-A-2 @2	Unknown	11	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 3:01:39 PM
12	9453-A-2 @40	Unknown	12	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 3:15:34 PM
13	CCV	Unknown	13	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 3:29:29 PM
14	CCB	Unknown	14	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 3:43:24 PM
15	9453-A-3 @2	Unknown	15	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 3:57:19 PM
16	9453-A-3 @40	Unknown	16	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 4:11:15 PM
17	9453-A-4 @2	Unknown	17	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 4:25:10 PM
18	9453-A-4 @40	Unknown	18	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 4:39:05 PM
19	9453-A-5 @2	Unknown	19	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 4:53:00 PM
20	9453-A-5 @40	Unknown	20	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 5:06:55 PM
21	9453-A-6 @2	Unknown	21	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 5:20:50 PM
22	9453-A-6 @40	Unknown	22	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 5:34:46 PM
23	9412-A-12 @20	Unknown	23	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 5:48:41 PM
24	9434-A-1 @20	Unknown	24	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 6:02:36 PM
25	CCV	Unknown	25	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 6:16:32 PM
26	CCB	Unknown	26	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 6:30:27 PM
27	9437-A-1 @20	Unknown	27	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 6:44:23 PM
28	9437-A-2 @20	Unknown	28	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 6:58:18 PM
29	9438-H-1 @100	Unknown	29	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 7:12:13 PM
30	9438-H-1 @500	Unknown	30	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 7:26:08 PM
31	9438-H-2 @20	Unknown	31	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 7:40:03 PM
32	9438-H-2 @100	Unknown	32	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 7:53:59 PM
33	9438-H-2 @500	Unknown	33	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 8:07:54 PM
34	9451-A-1	Unknown	34	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 8:21:49 PM
35	9451-A-1 @50	Unknown	35	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 8:35:44 PM
36	CCV	Unknown	36	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 8:49:40 PM
37	CCB	Unknown	37	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 9:03:34 PM
38	9451-A-2	Unknown	38	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 9:17:29 PM
39	9451-A-2 @50	Unknown	39	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 9:31:25 PM
40	9451-A-3	Unknown	40	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 9:45:20 PM
41	9451-A-3 @50	Unknown	41	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 9:59:15 PM
42	9451-A-4	Unknown	42	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 10:13:10 PM

Title:
Datasource: SLIC03_local
Location: JACK\SEQUENCES\14NOV
Timebase: JACK
#Samples: 47
Created: 11/15/2014 12:41:28 PM by FLAKERA
Last Update: 11/21/2014 10:53:11 AM by FLAKERA

No.	Name	Weight	Dil. Factor	ISTD Amount	Sample ID	Replicate ID	Comment
1	ICV	1.0000	1.0000	1.0000	100	111514	
2	ICB	1.0000	1.0000	1.0000	101	111514	
3	MB	1.0000	1.0000	1.0000	102	111514	
4	LCS	1.0000	1.0000	1.0000	103	111514	
5	9453-A-1 @2	1.0000	1.0000	1.0000	104	111514	
6	9453-A-1 @40	1.0000	1.0000	1.0000	105	111514	
7	9453-A-1 DU @2	1.0000	1.0000	1.0000	106	111514	
8	9453-A-1 DU @40	1.0000	1.0000	1.0000	107	111514	
9	9453-A-1 MS @2	1.0000	1.0000	1.0000	108	111514	
10	9453-A-1 MS @40	1.0000	1.0000	1.0000	109	111514	
11	9453-A-2 @2	1.0000	1.0000	1.0000	110	111514	
12	9453-A-2 @40	1.0000	1.0000	1.0000	111	111514	
13	CCV	1.0000	1.0000	1.0000	112	111514	
14	CCB	1.0000	1.0000	1.0000	113	111514	
15	9453-A-3 @2	1.0000	1.0000	1.0000	114	111514	
16	9453-A-3 @40	1.0000	1.0000	1.0000	115	111514	
17	9453-A-4 @2	1.0000	1.0000	1.0000	116	111514	
18	9453-A-4 @40	1.0000	1.0000	1.0000	117	111514	
19	9453-A-5 @2	1.0000	1.0000	1.0000	118	111514	
20	9453-A-5 @40	1.0000	1.0000	1.0000	119	111514	
21	9453-A-6 @2	1.0000	1.0000	1.0000	120	111514	
22	9453-A-6 @40	1.0000	1.0000	1.0000	121	111514	
23	9412-A-12 @20	1.0000	1.0000	1.0000	122	111514	
24	9434-A-1 @20	1.0000	1.0000	1.0000	123	111514	
25	CCV	1.0000	1.0000	1.0000	124	111514	
26	CCB	1.0000	1.0000	1.0000	125	111514	
27	9437-A-1 @20	1.0000	1.0000	1.0000	126	111514	
28	9437-A-2 @20	1.0000	1.0000	1.0000	127	111514	
29	9438-H-1 @100	1.0000	1.0000	1.0000	128	111514	
30	9438-H-1 @500	1.0000	1.0000	1.0000	129	111514	
31	9438-H-2 @20	1.0000	1.0000	1.0000	130	111514	
32	9438-H-2 @100	1.0000	1.0000	1.0000	131	111514	
33	9438-H-2 @500	1.0000	1.0000	1.0000	132	111514	
34	9451-A-1	1.0000	1.0000	1.0000	133	111514	
35	9451-A-1 @50	1.0000	1.0000	1.0000	134	111514	
36	CCV	1.0000	1.0000	1.0000	135	111514	
37	CCB	1.0000	1.0000	1.0000	136	111514	
38	9451-A-2	1.0000	1.0000	1.0000	137	111514	
39	9451-A-2 @50	1.0000	1.0000	1.0000	138	111514	
40	9451-A-3	1.0000	1.0000	1.0000	139	111514	
41	9451-A-3 @50	1.0000	1.0000	1.0000	140	111514	
42	9451-A-4	1.0000	1.0000	1.0000	141	111514	

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Title:
Datasource: SLIC03_local
Location: JACK\SEQUENCES\14NOV
Timebase: JACK
#Samples: 47
Created: 11/15/2014 12:41:28 PM by FLAKERA
Last Update: 11/21/2014 10:53:11 AM by FLAKERA

No.	Name	Type	Pos.	Inj. Vol.	Program	Method	Status	Inj. Date/Time
43	9451-A-4 MS	Unknown	43	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 10:27:06 PM
44	9326-A-1	Unknown	44	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 10:41:01 PM
45	CCV	Unknown	45	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 10:54:56 PM
46	CCB	Unknown	46	50.0	SLIC03_local	STLANIONS	Finished	11/15/2014 11:08:52 PM
47	END	Unknown	47	50.0	SHUTDOWN	STLANIONS	Finished	11/15/2014 11:22:47 PM

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Title:
Datasource: SLIC03_local
Location: JACK\SEQUENCES\14NOV
Timebase: JACK
#Samples: 47
Created: 11/15/2014 12:41:28 PM by FLAKERA
Last Update: 11/21/2014 10:53:11 AM by FLAKERA

No.	Name	Weight	Dil. Factor	ISTD Amount	Sample ID	Replicate ID	Comment
43	9451-A-4 MS	1.0000	1.0000	1.0000	142	111514	
44	9326-A-1	1.0000	1.0000	1.0000	143	111514	
45	CCV	1.0000	1.0000	1.0000	144	111514	
46	CCB	1.0000	1.0000	1.0000	145	111514	
47	END	1.0000	1.0000	1.0000	146	111514	

Title: STLANIONS
Datasource: SLIC03_local
Location: JACK\SEQUENCES\14NOV\111514_JACK.SEQ
Timebase: JACK
Created: 12/5/2005 2:54:29 PM by chemist
Changed: 11/11/2014 2:20:15 PM by FLAKERA

```
                Pressure.LowerLimit =               0
                Pressure.UpperLimit =               5000
                %A.Equate =                         "%A"
                %B.Equate =                         "%B"
                %C.Equate =                         "%C"
                %D.Equate =                         "%D"
                LoadPosition
                Data_Collection_Rate =              2.0
                Temperature_Compensation =          1.7
                Oven_Temperature =                  35
                Suppressor_Type =                   ASRS_4mm
                ; Carbonate =                       3.5
                ; Bicarbonate =                     1.0
                ; Hydroxide =                       0.0
                ; Tetraborate =                     0.0
                ; Other eluent =                    0.0
                ; Recommended Current =             24
                Suppressor_Current =                30
                Flow =                              1.2
                %B =                                0.0
                %C =                                0.0
                %D =                                0.0
                Curve =                             5

-2.300          Pump_Relay_1.Closed                 Duration=138.00

 0.000          ECD.Autozero
                ECD_1.AcqOn
                Pump_InjectValve.InjectPosition     Duration=30.00

11.5            ECD_1.AcqOff

                End
```

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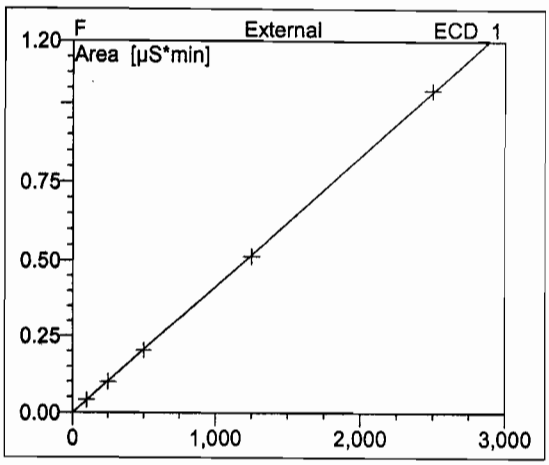
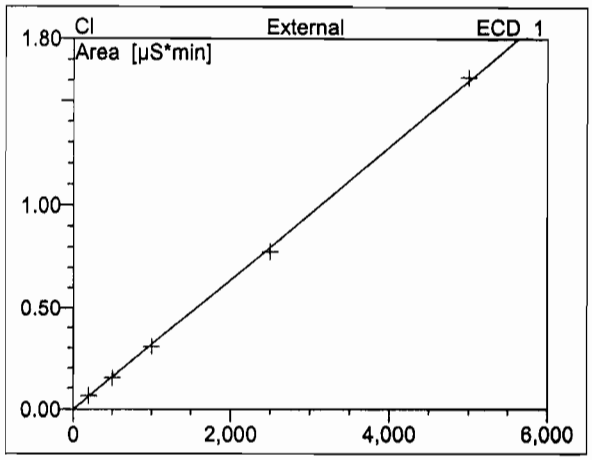
Title: STLANIONS
Datasource: SLIC03_local
Location: JACK\SEQUENCES\14NOV\111514_JACK.SEQ
Timebase: JACK
Created: 12/5/2005 2:54:29 PM by chemist
Changed: 11/11/2014 2:20:15 PM by FLAKERA

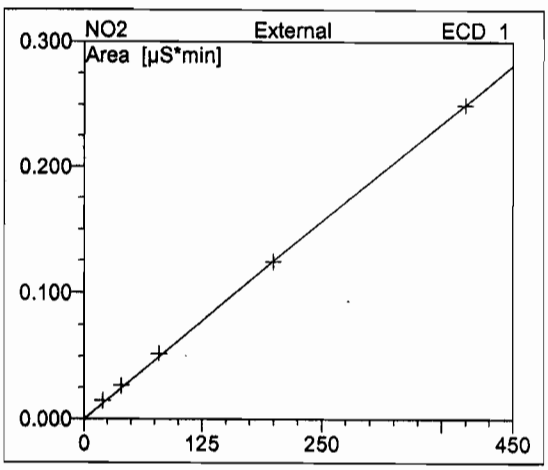
No.	Channel	Operation	Parameters

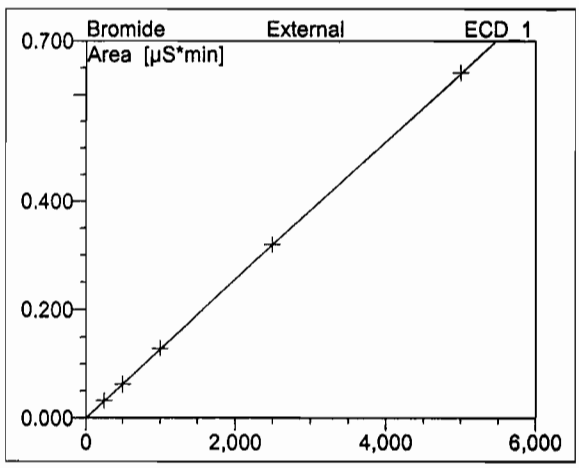
Calibration Batch Report - ECD_1

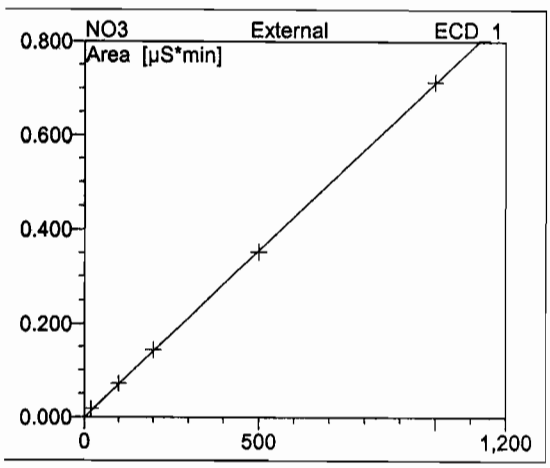
Sequence:	111414CAL_JACK	Inj. Vol.:	50.0
Program:	SLIC03_local	Operator:	SLIC03
Inj. Date/Time	11/14/14 09:40	Run Time:	11.50

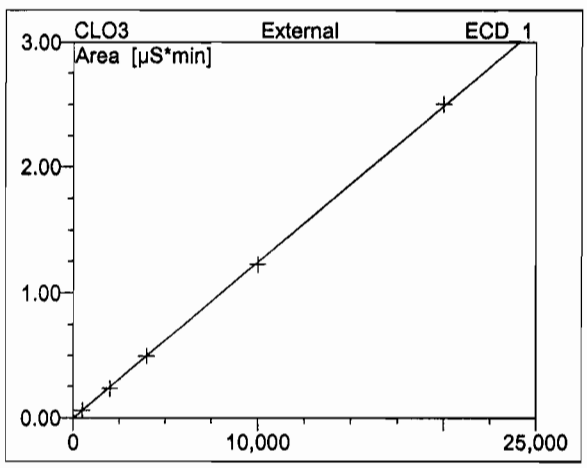


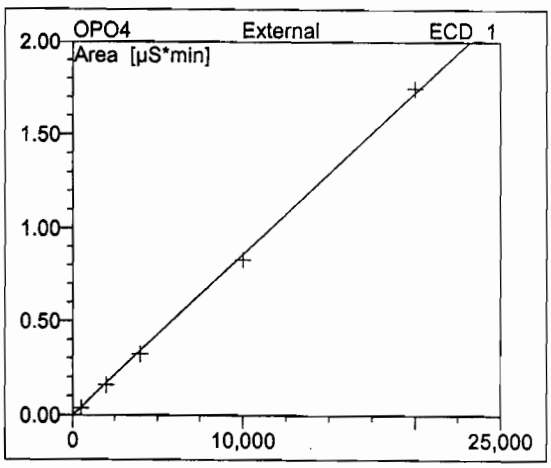


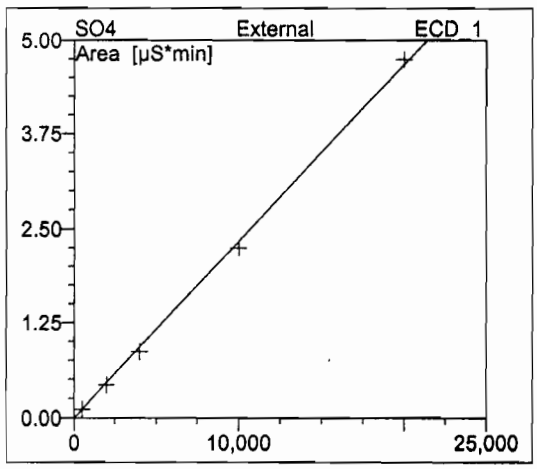












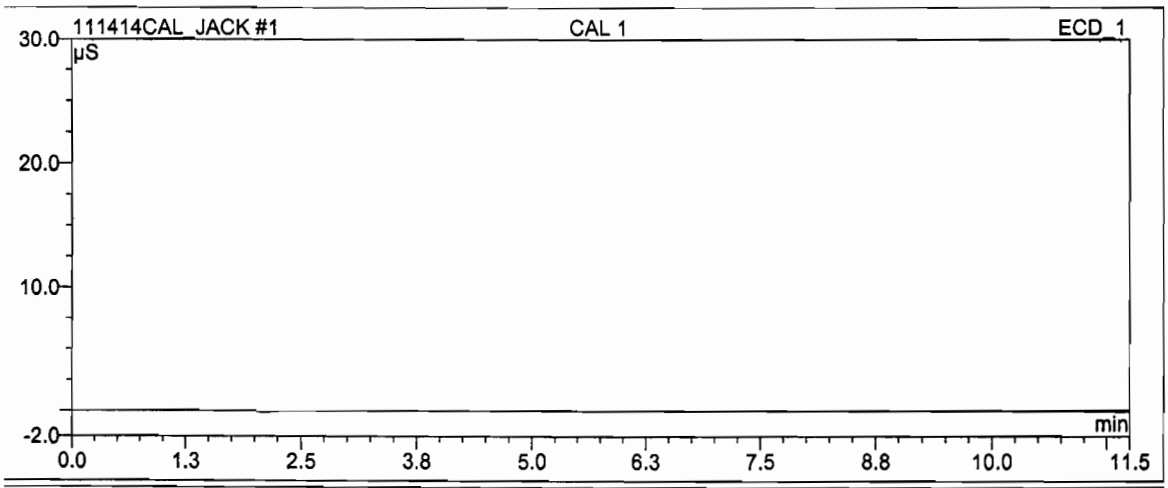
No.	Peak Name	Cal.Type	Corr.Coeff. %
1	F	Lin	99.998 ✓
2	Cl	Lin	99.980 ✓
3	NO2	Lin	99.995 ✓
4	Bromide	Lin	99.999 ✓
5	NO3	Lin	99.995 ✓
6	CLO3	Lin	99.993 ✓
7	OPO4	Lin	99.972 ✓
8	SO4	Lin	99.962 ✓

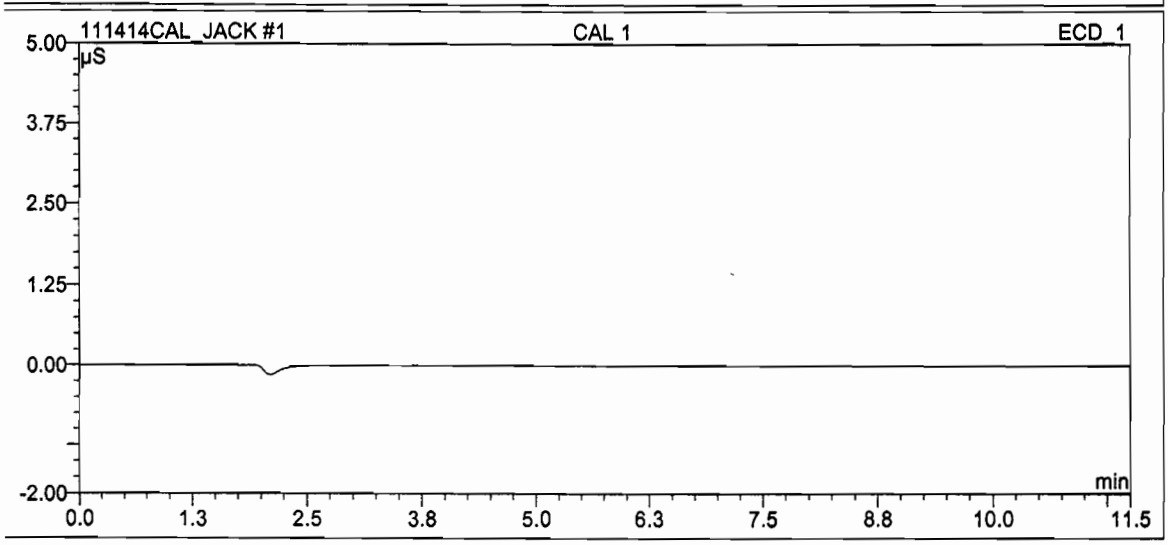
AF 11-21-14

Integration Report - ECD_1

Sample Name:	CAL 1	*Inj. Vol.:*	50.0
Sample Type:	standard	*Dilution Factor:*	1.0000
Program:	SLIC03_local	*Operator:*	n.a.
Inj. Date/Time:	14.11.14 08:58	*Run Time:*	11.50

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
		TOTAL:		0.00	0.00	0.00

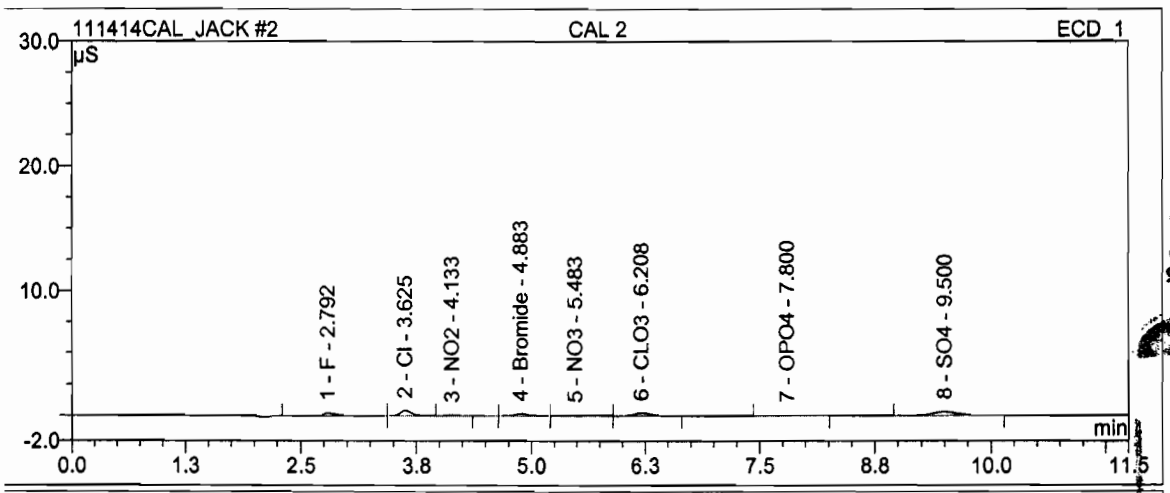


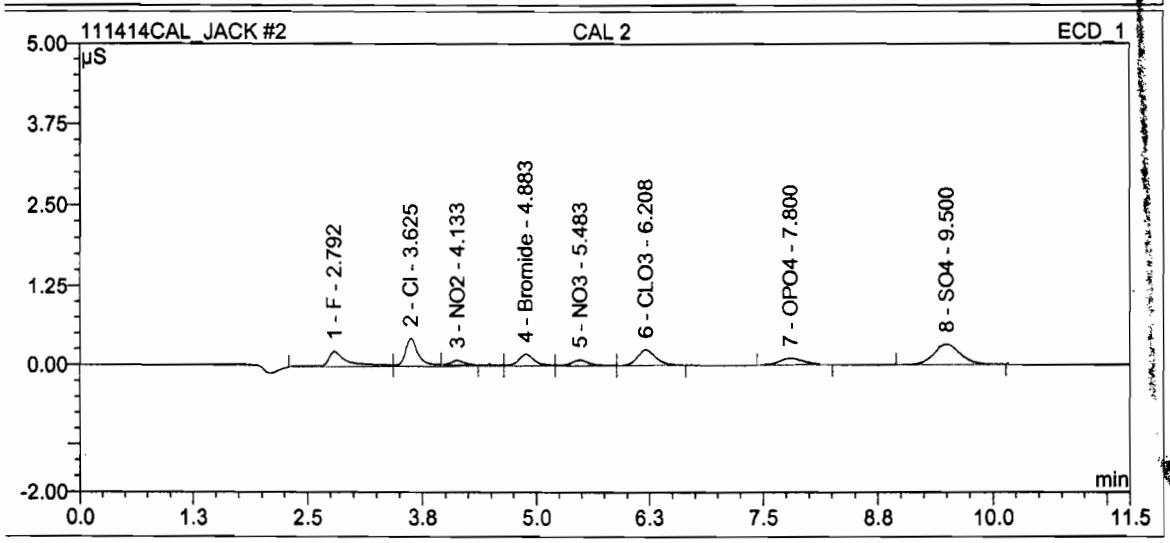


Integration Report - ECD_1

Sample Name:	**CAL 2**	*Inj. Vol.:*	**50.0**
Sample Type:	**standard**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 09:12**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.79	F	BM	0.064	0.241	154.9665
2	3.63	Cl	M	0.089	0.439	269.8235
3	4.13	NO2	Rd	0.010	0.063	21.4364
4	4.88	Bromide	M	0.038	0.184	300.6650
5	5.48	NO3	M	0.020	0.086	29.7800
6	6.21	CLO3	MB	0.057	0.242	461.7840
7	7.80	OPO4	BMB	0.031	0.099	362.9504
8	9.50	SO4	BMB	0.109	0.319	465.1658
		TOTAL:		0.42	1.67	2066.57





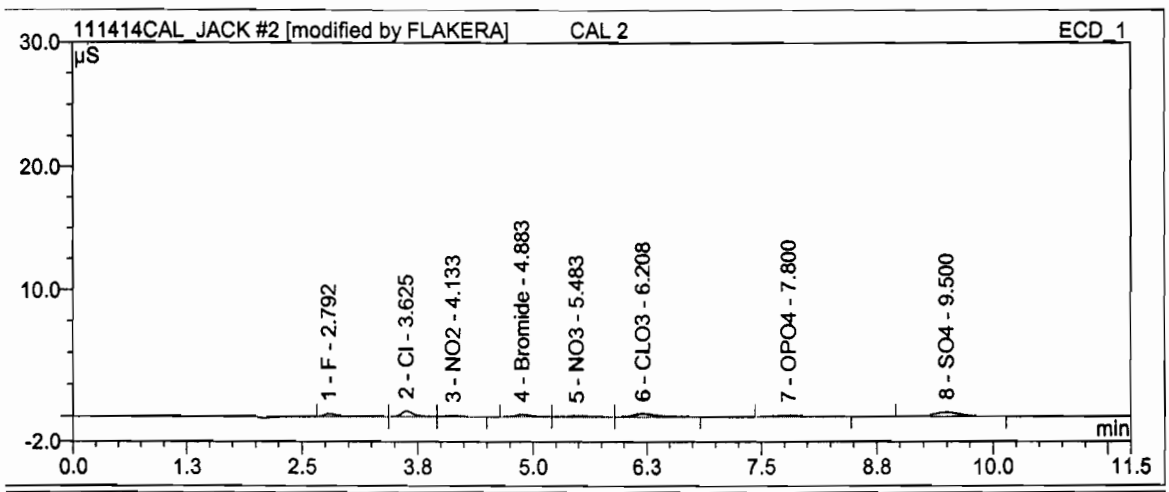
INT AF 11-21-14

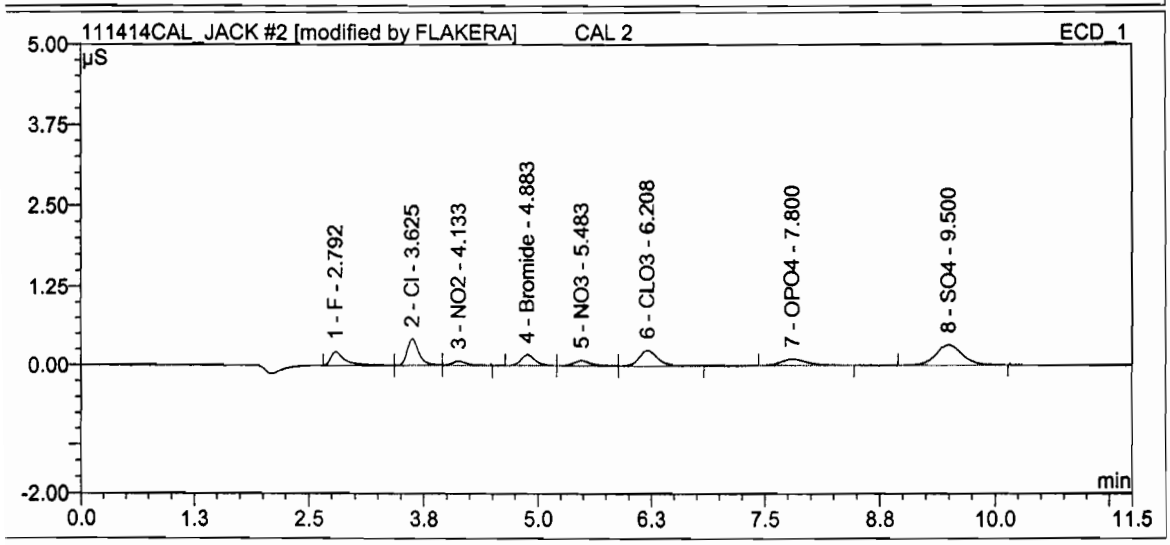
1. Peak Not Found
2. Incomplete Integration
3. Assign Peak
4. Wrong Peak
5. Baseline Smoothing All but Sol
6. Split Peak
7. Other

Integration Report - ECD_1

Sample Name:	**CAL 2**	*Inj. Vol.:*	**50.0**
Sample Type:	**standard**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 09:12**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.79	F	BM *	0.041	0.216	97.5549
2	3.63	Cl	M *	0.064	0.420	201.4584
3	4.13	NO2	MB*	0.015	0.072	23.2238
4	4.88	Bromide	BM *	0.032	0.174	250.3125
5	5.48	NO3	Mb*	0.018	0.081	25.0503
6	6.21	CLO3	bMB*	0.059	0.244	473.9496
7	7.80	OPO4	BMB*	0.035	0.102	403.6945
8	9.50	SO4	BMB	0.109	0.319	465.2240
		TOTAL:		0.37	1.63	1940.47

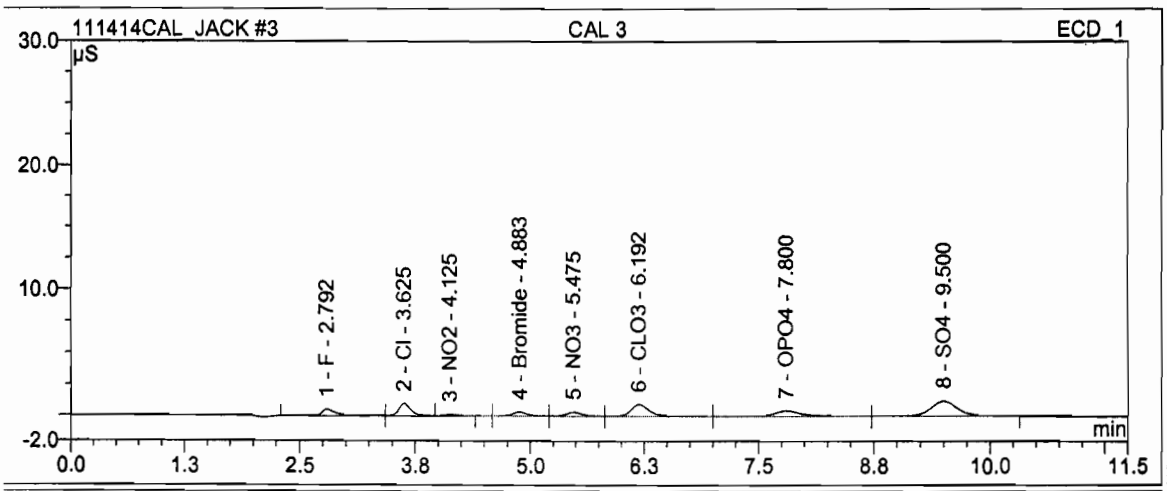


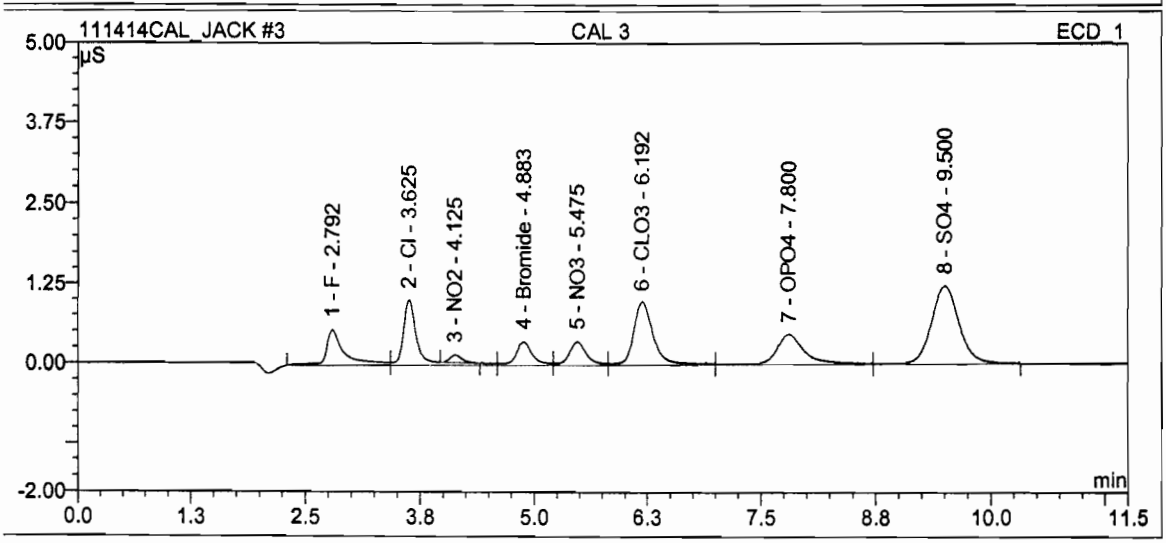


Integration Report - ECD_1

Sample Name:	**CAL 3**	*Inj. Vol.:*	**50.0**
Sample Type:	**standard**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 09:26**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.79	F	BM	0.130	0.550	312.3084
2	3.63	Cl	M	0.191	1.018	582.1326
3	4.13	NO2	Rd	0.018	0.114	37.0833
4	4.88	Bromide	M	0.077	0.361	612.2616
5	5.48	NO3	M	0.083	0.360	120.6274
6	6.19	CLO3	M	0.252	0.983	2048.6485
7	7.80	OPO4	M	0.175	0.462	2031.0739
8	9.50	SO4	MB	0.430	1.224	1838.5495
		TOTAL:		1.36	5.07	7582.69





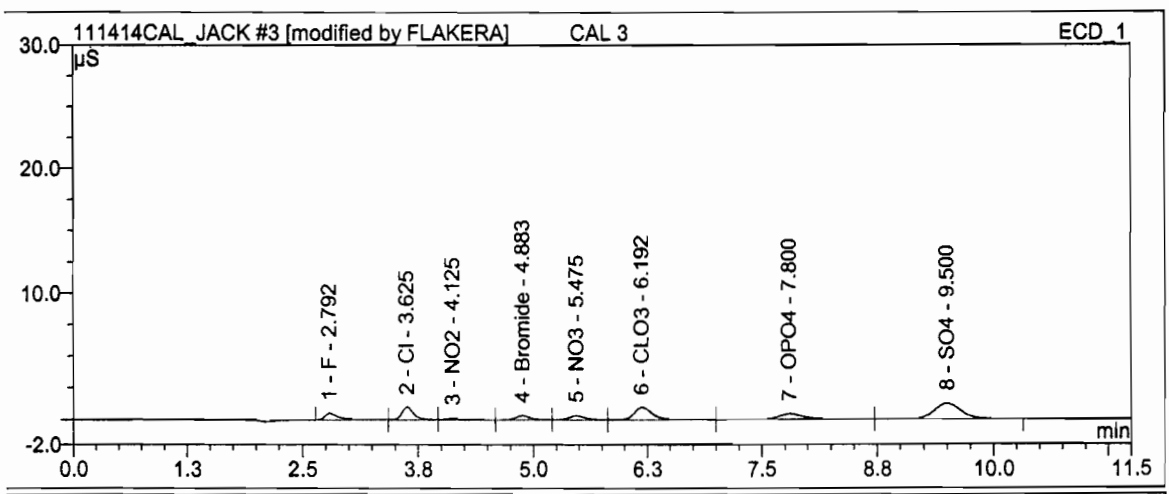
MI AF 11-21-14

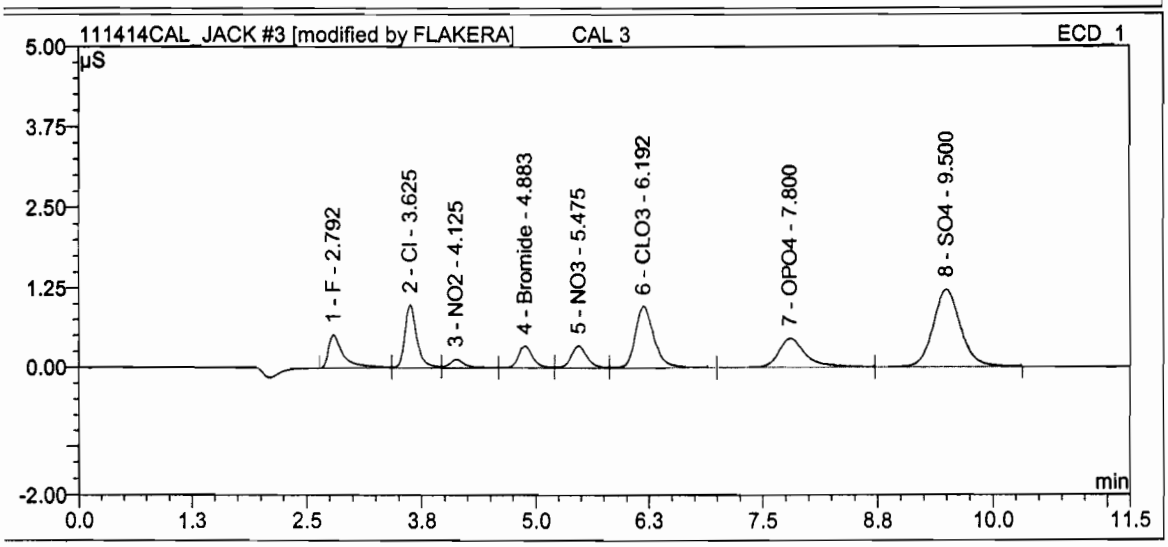
1. Peak Not Found
2. Incomplete Integration
3. Assign Peak
4. Wrong Peak
5. Baseline Smoothing All
6. Split Peak
7. Other _____

Integration Report - ECD_1

Sample Name:	**CAL 3**	*Inj. Vol.:*	**50.0**
Sample Type:	**standard**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 09:26**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.79	F	BM *	0.099	0.519	238.9027
2	3.63	Cl	M *	0.153	0.990	476.5923
3	4.13	NO2	M *	0.027	0.133	42.4621
4	4.88	Bromide	M *	0.063	0.338	490.5671
5	5.48	NO3	M *	0.071	0.340	99.2706
6	6.19	CLO3	M *	0.233	0.966	1874.2815
7	7.80	OPO4	M *	0.158	0.452	1832.1289
8	9.50	SO4	MB*	0.425	1.220	1816.4149
		TOTAL:		1.23	4.96	6870.62

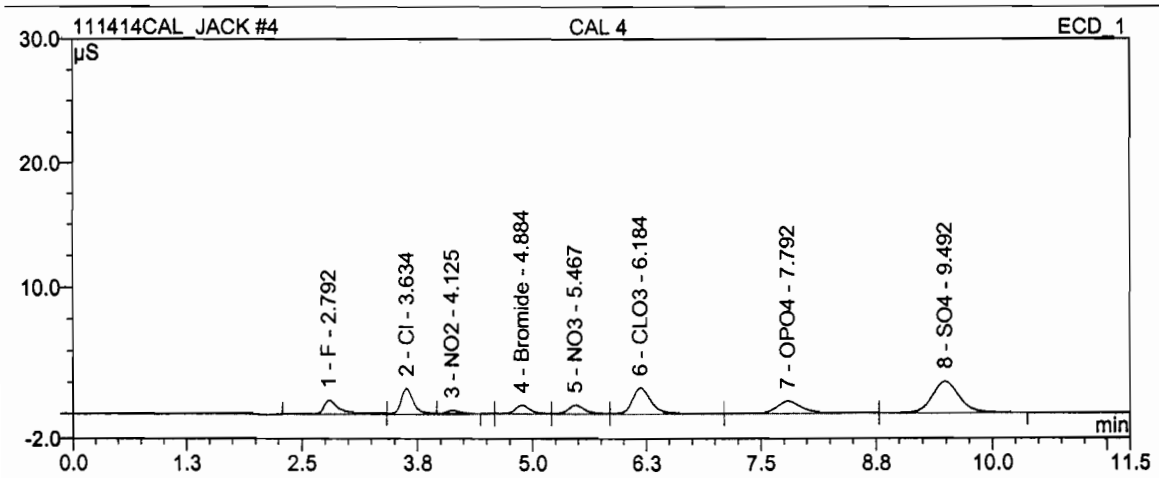


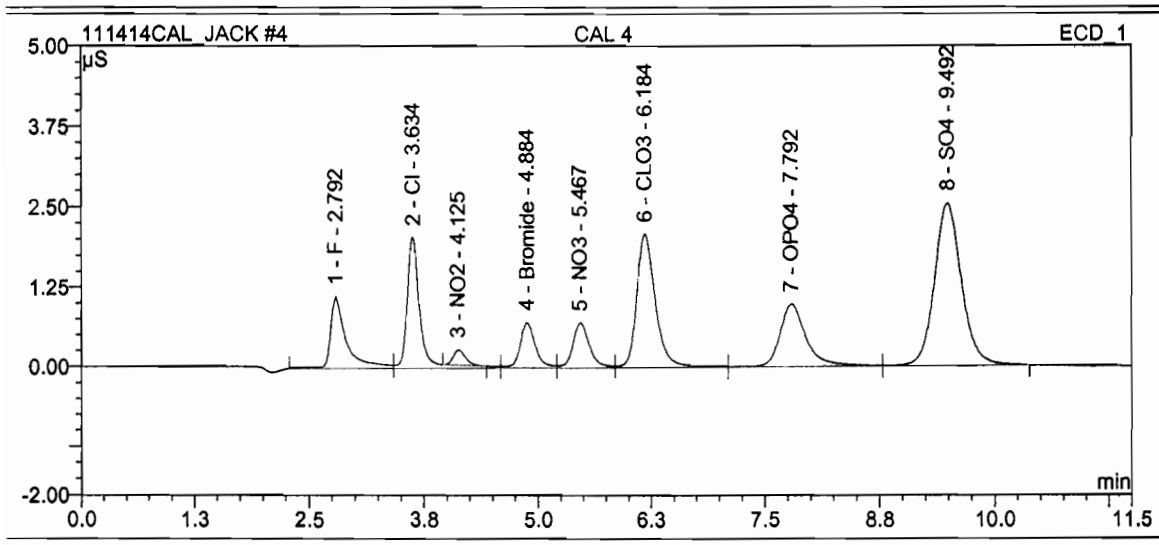


Integration Report - ECD_1

Sample Name:	**CAL 4**	*Inj. Vol.:*	**50.0**
Sample Type:	**standard**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 09:40**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.79	F	BM	0.225	1.127	541.7527
2	3.63	Cl	M	0.342	2.045	1039.4852
3	4.13	NO2	Rd	0.038	0.239	78.2676
4	4.88	Bromide	M	0.137	0.710	1095.8769
5	5.47	NO3	M	0.150	0.702	219.0471
6	6.18	CLO3	M	0.502	2.087	4074.9392
7	7.79	OPO4	M	0.327	0.982	3782.2688
8	9.49	SO4	MB	0.868	2.539	3713.3565
		TOTAL:		2.59	10.43	14544.99





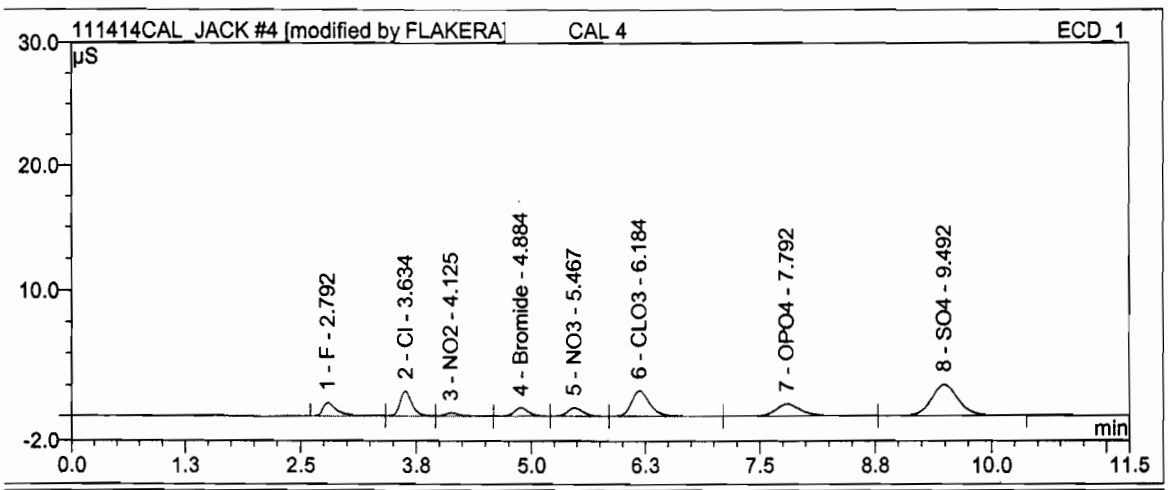
MI
AF 11-21-14

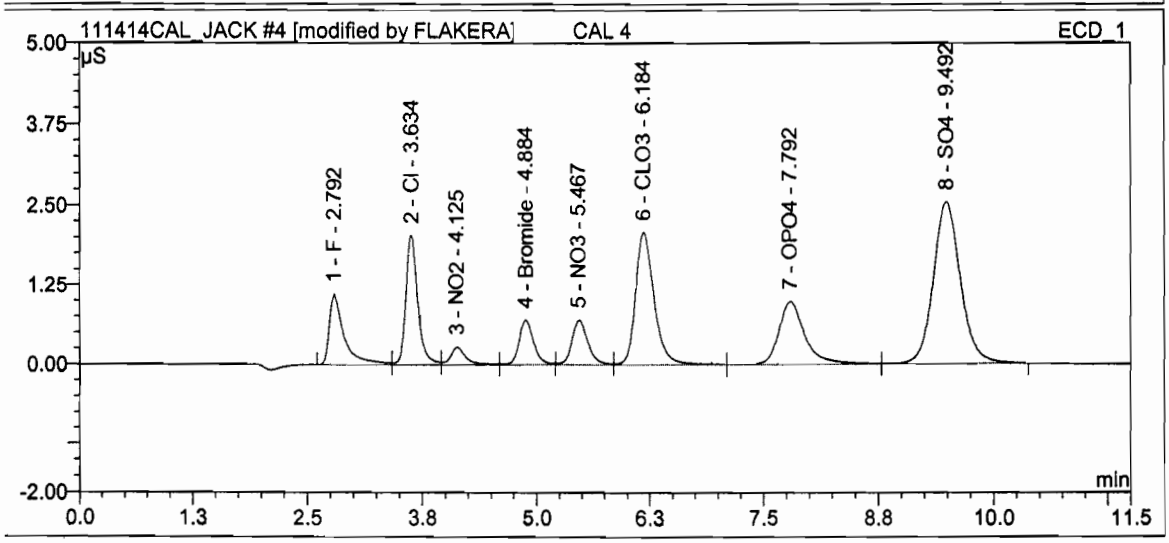
1. Peak Not Found
2. Incomplete Integration
3. Assign Peak
4. Wrong Peak
5. Baseline Smoothing all
6. Split Peak
7. Other

Integration Report - ECD_1

Sample Name:	**CAL 4**	*Inj. Vol.:*	**50.0**
Sample Type:	**standard**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 09:40**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.79	F	BM *	0.203	1.105	489.1775
2	3.63	Cl	M *	0.308	2.026	961.1060
3	4.13	NO2	M *	0.052	0.269	83.1120
4	4.88	Bromide	M *	0.129	0.697	1007.1940
5	5.47	NO3	M *	0.144	0.692	201.7257
6	6.18	CLO3	Mb*	0.495	2.079	3972.0351
7	7.79	OPO4	bM *	0.323	0.979	3742.0953
8	9.49	SO4	MB*	0.867	2.538	3708.7362
		TOTAL:		2.52	10.39	14165.18

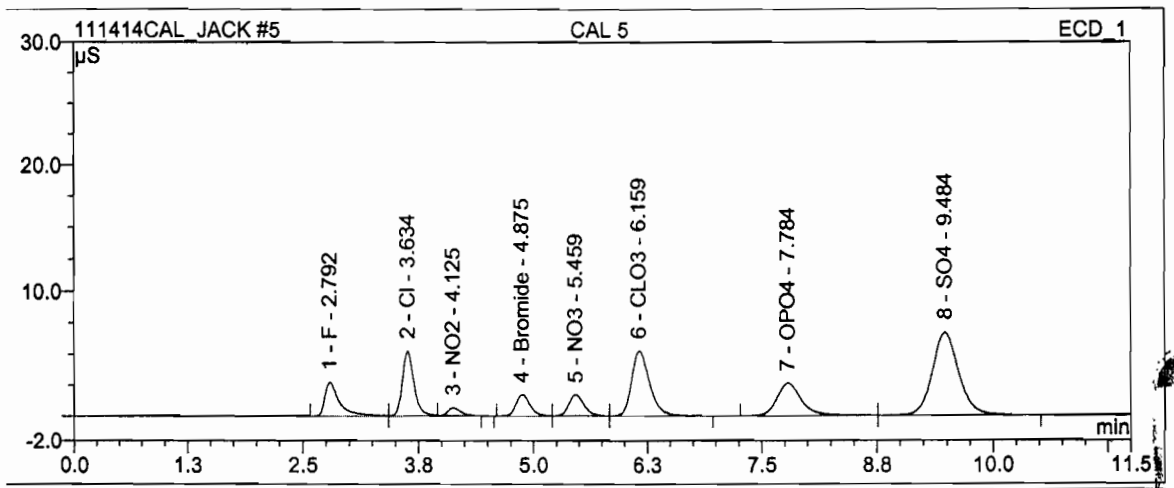


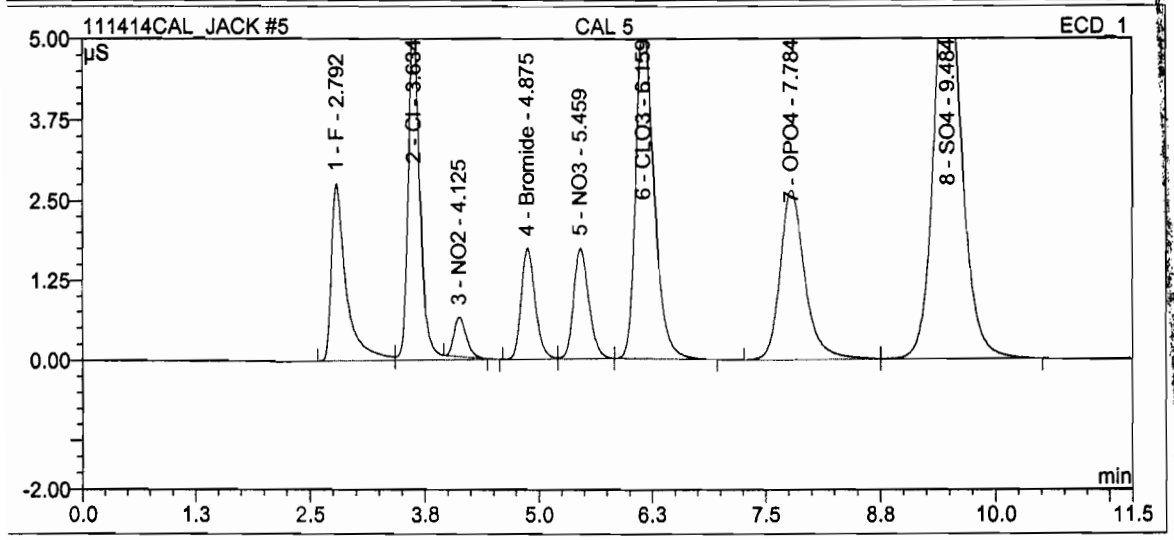


Integration Report - ECD_1

Sample Name:	CAL 5	*Inj. Vol.:*	50.0
Sample Type:	standard	*Dilution Factor:*	1.0000
Program:	SLIC03_local	*Operator:*	n.a.
Inj. Date/Time:	14.11.14 09:54	*Run Time:*	11.50

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.79	F	BM	0.511	2.769	1227.8269
2	3.63	Cl	MB	0.792	5.250	2409.6675
3	4.13	NO2	Rd	0.095	0.607	197.5217
4	4.88	Bromide	BM	0.308	1.736	2462.9995
5	5.46	NO3	Mb	0.337	1.726	491.4665
6	6.16	CLO3	bMB	1.207	5.253	9802.1573
7	7.78	OPO4	BM	0.830	2.654	9613.2696
8	9.48	SO4	MB	2.243	6.684	9593.0847
		TOTAL:		6.32	26.68	35797.99





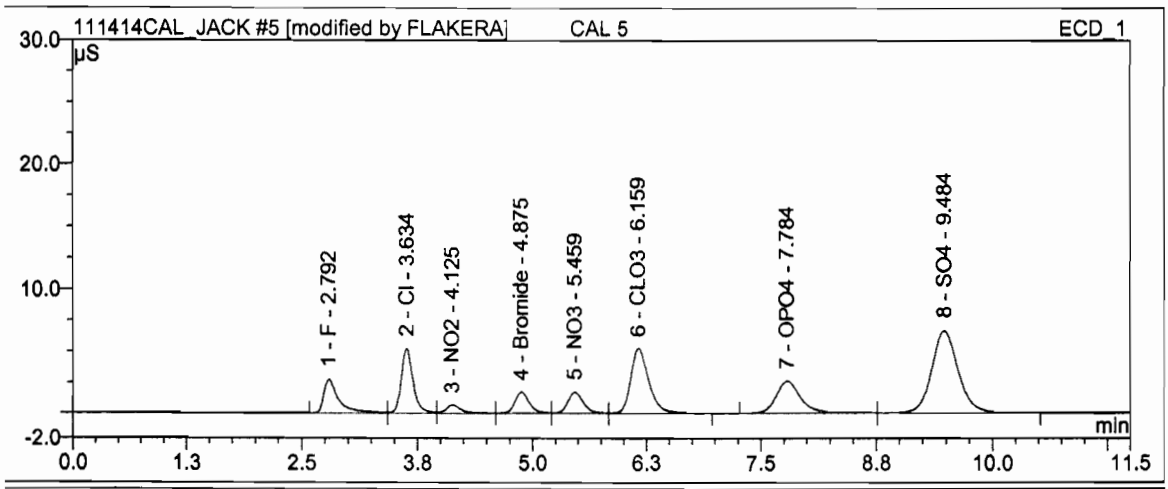
MI AF 11-24-14

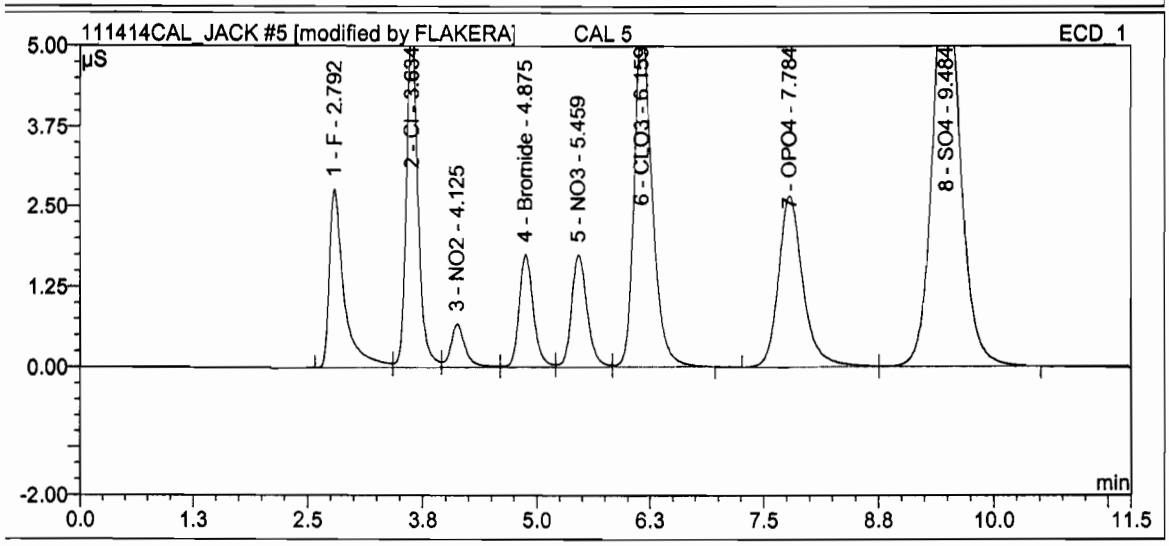
1. Peak Not Found
2. Incomplete Integration
3. Assign Peak
4. Wrong Peak
5. Baseline Smoothing all but OPO4, SO4
6. Split Peak
7. Other ____

Integration Report - ECD_1

Sample Name:	**CAL 5**	*Inj. Vol.:*	**50.0**
Sample Type:	**standard**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 09:54**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.79	F	BM *	0.514	2.771	1237.1922
2	3.63	Cl	M *	0.777	5.258	2426.6495
3	4.13	NO2	M *	0.124	0.669	198.2910
4	4.88	Bromide	M *	0.319	1.754	2491.5014
5	5.46	NO3	M *	0.352	1.750	494.7860
6	6.16	CLO3	MB*	1.223	5.273	9823.1009
7	7.78	OPO4	BM	0.830	2.654	9623.5994
8	9.48	SO4	MB	2.243	6.684	9594.2845
		TOTAL:		6.38	26.81	35889.40

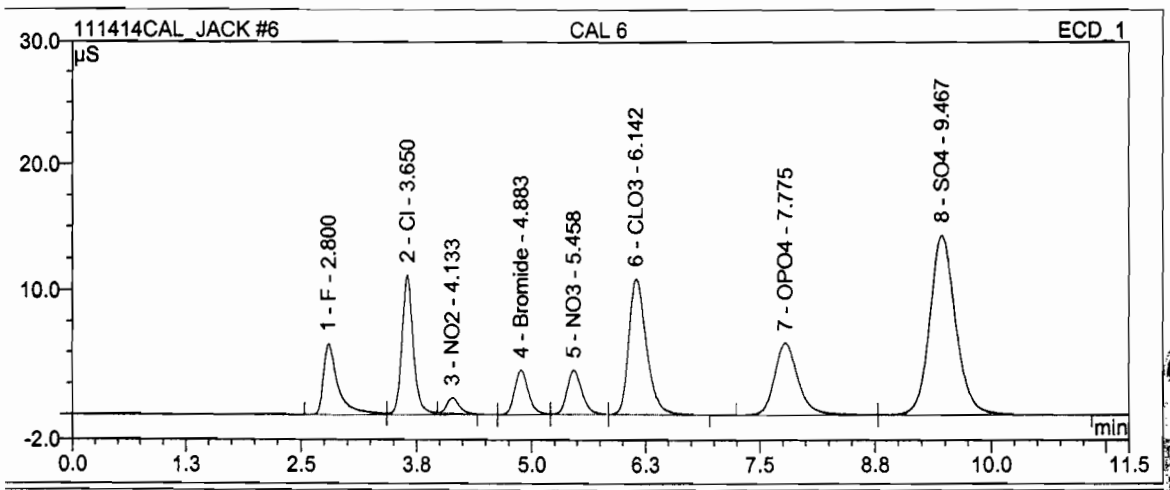


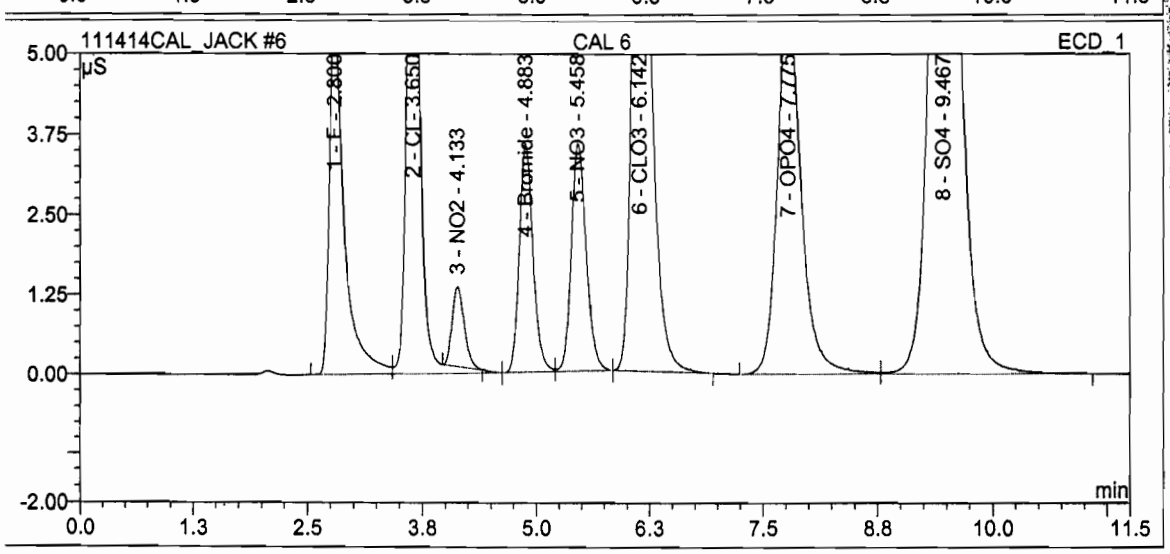


Integration Report - ECD_1

Sample Name:	**CAL 6**	*Inj. Vol.:*	**50.0**
Sample Type:	**standard**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 10:08**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BM	1.038	5.693	2494.3065
2	3.65	Cl	MB	1.652	11.237	5026.2630
3	4.13	NO2	Rd	0.193	1.251	401.8055
4	4.88	Bromide	bM	0.623	3.578	4985.5654
5	5.46	NO3	Mb	0.684	3.559	998.1990
6	6.14	CLO3	bMB	2.473	10.944	20080.0240
7	7.78	OPO4	BM	1.748	5.799	20237.2303
8	9.47	SO4	MB	4.742	14.370	20277.8023
		TOTAL:		13.15	56.43	74501.20





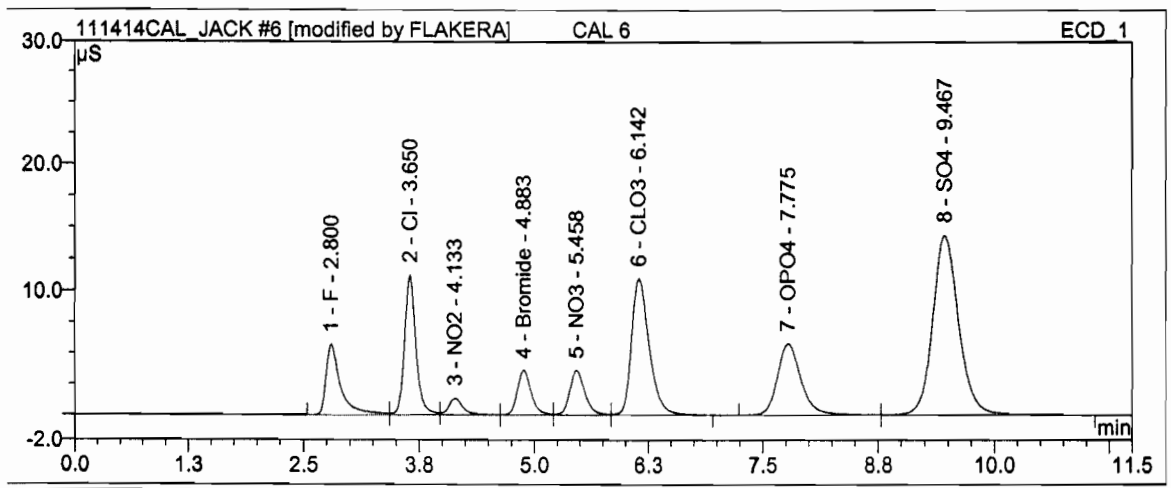
MI
AF 11-21-14

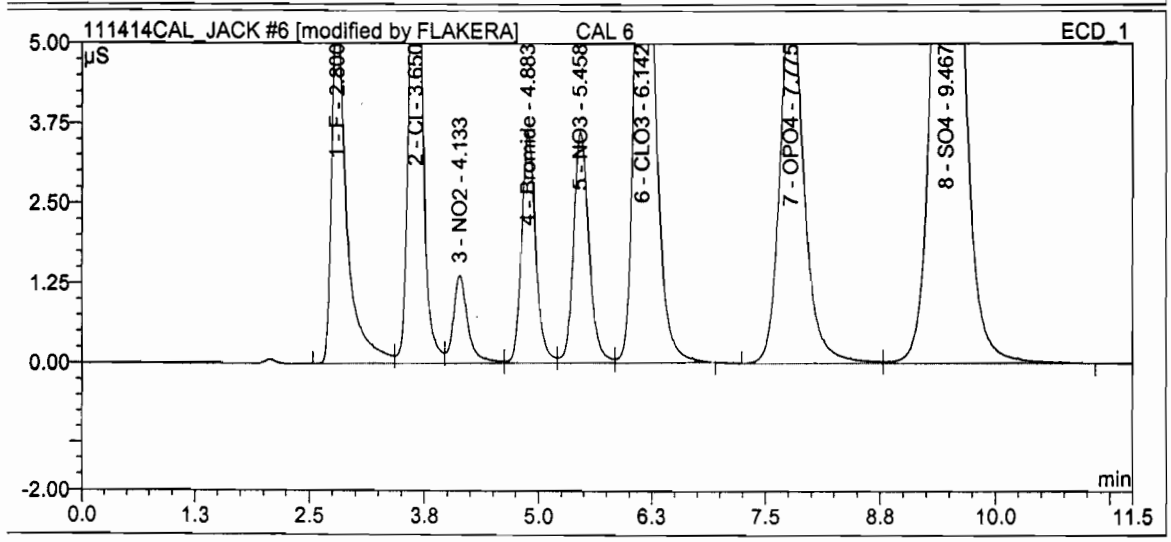
1. Peak Not Found
2. Incomplete Integration
3. Assign Peak
4. Wrong Peak
5. Baseline Smoothing all but OPO4 SO4
6. Split Peak
7. Other _____

Integration Report - ECD_1

Sample Name:	**CAL 6**	*Inj. Vol.:*	**50.0**
Sample Type:	**standard**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**14.11.14 10:08**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BM *	1.042	5.696	2509.7759
2	3.65	Cl	M *	1.615	11.249	5046.7364
3	4.13	NO2	M *	0.250	1.375	399.8247
4	4.88	Bromide	M *	0.641	3.608	5003.7382
5	5.46	NO3	M *	0.714	3.604	1002.2338
6	6.14	CLO3	MB*	2.503	10.984	20107.2656
7	7.78	OPO4	BM	1.748	5.799	20258.9760
8	9.47	SO4	MB	4.742	14.370	20280.3384
		TOTAL:		13.26	56.69	74608.89

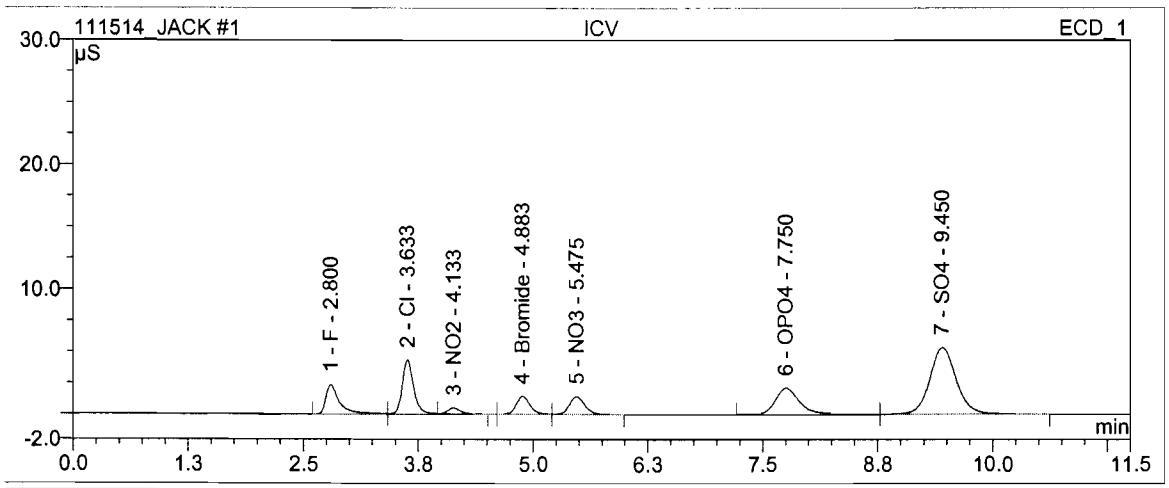


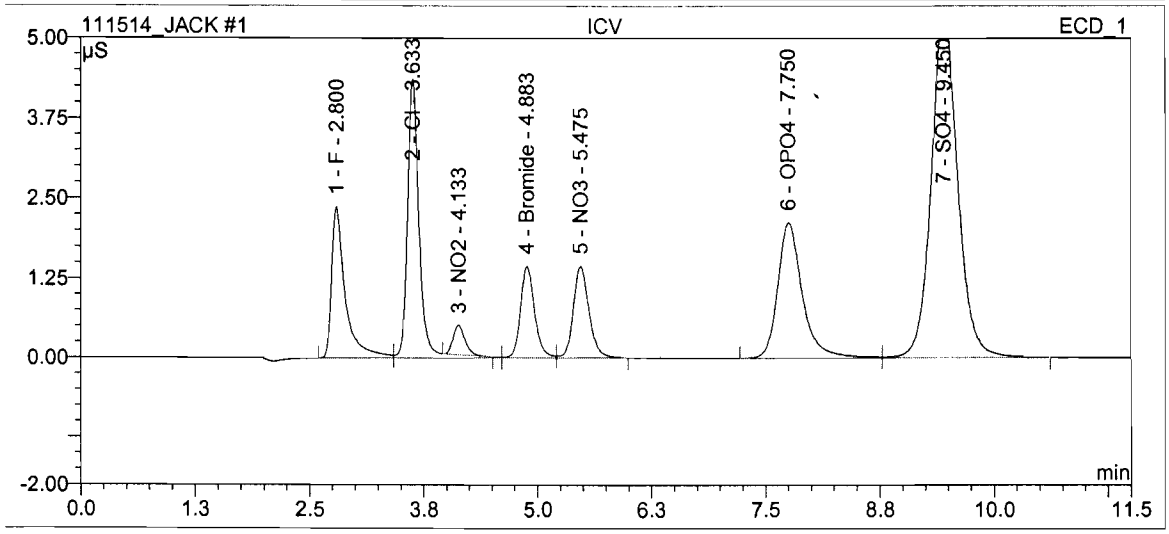


Integration Report - ECD_1

Sample Name:	**ICV**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 12:42**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BM	0.415	2.365	998.6689
2	3.63	Cl	M	0.649	4.360	2027.6642
3	4.13	NO2	Rd	0.071	0.464	113.6811
4	4.88	Bromide	M	0.258	1.444	2016.0632
5	5.48	NO3	MB	0.288	1.438	405.1048
6	7.75	OPO4	BM	0.669	2.124	7758.4066
7	9.45	SO4	MB	1.813	5.384	7754.0759
		TOTAL:		4.16	17.58	21073.66



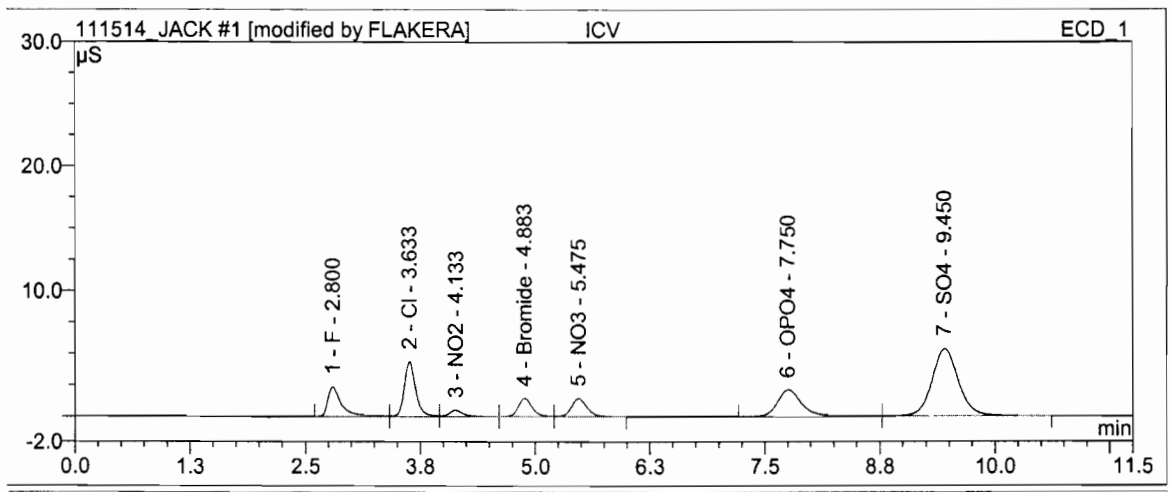


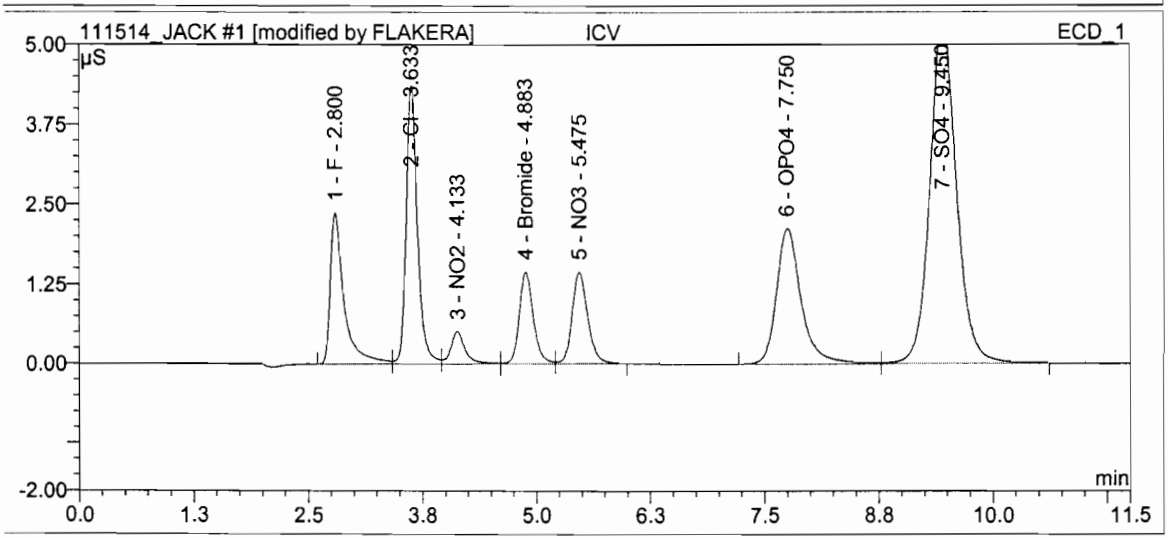
MT AF 11-21-14

Integration Report - ECD_1

Sample Name:	**ICV**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 12:42**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BM	0.415	2.365	998.6689
2	3.63	Cl	M *	0.627	4.360	1958.0653
3	4.13	NO2	M *	0.093	0.511	149.2648
4	4.88	Bromide	M	0.258	1.444	2016.0632
5	5.48	NO3	MB	0.288	1.438	405.1048
6	7.75	OPO4	BM	0.669	2.124	7758.4066
7	9.45	SO4	MB	1.813	5.384	7754.0759
		TOTAL:		4.16	17.63	21039.65

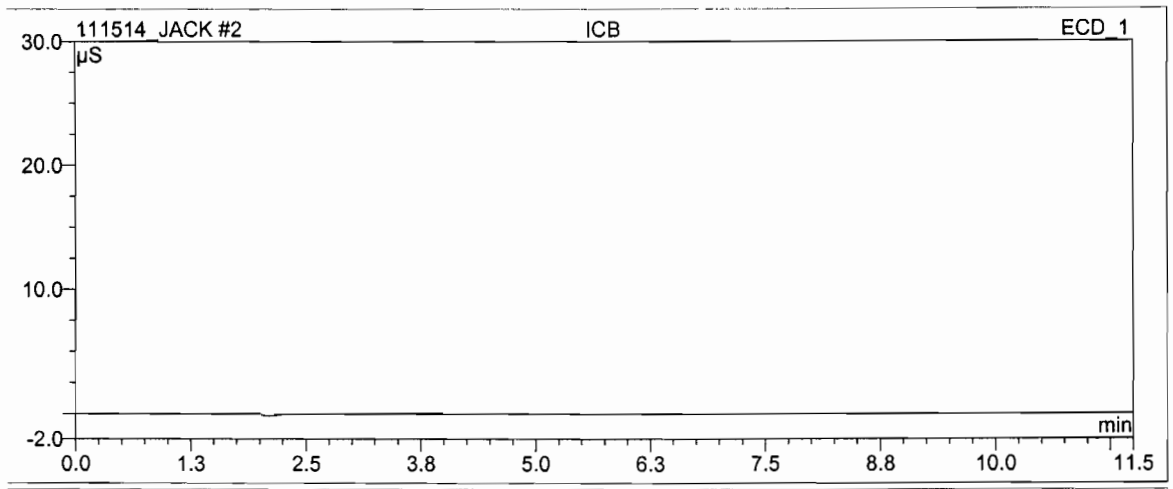


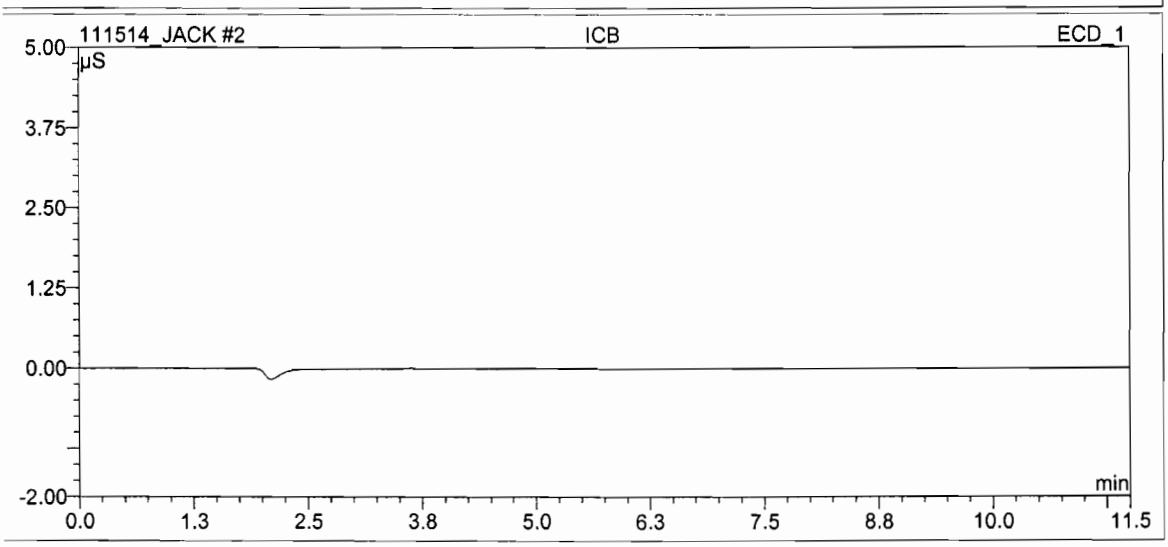


Integration Report - ECD_1

Sample Name:	**ICB**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 12:56**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
		TOTAL:		0.00	0.00	0.00

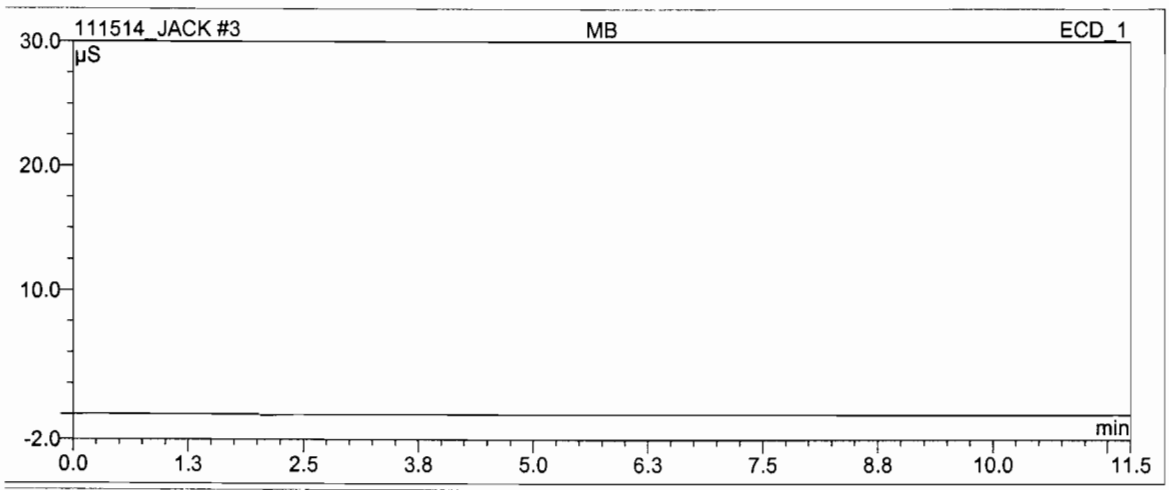


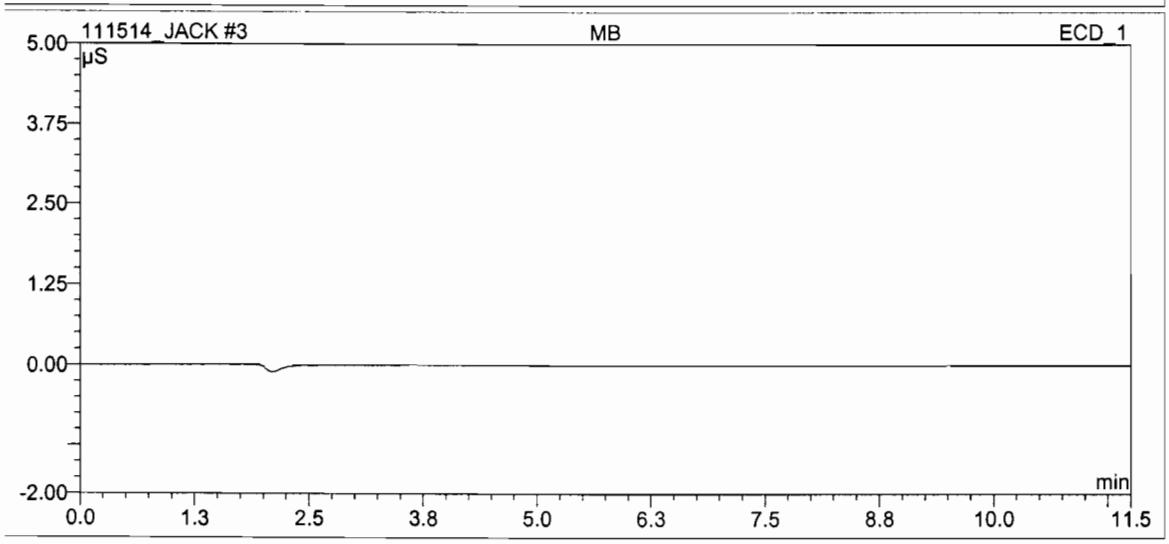


Integration Report - ECD_1

Sample Name:	**MB**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 13:10**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
		TOTAL:		0.00	0.00	0.00

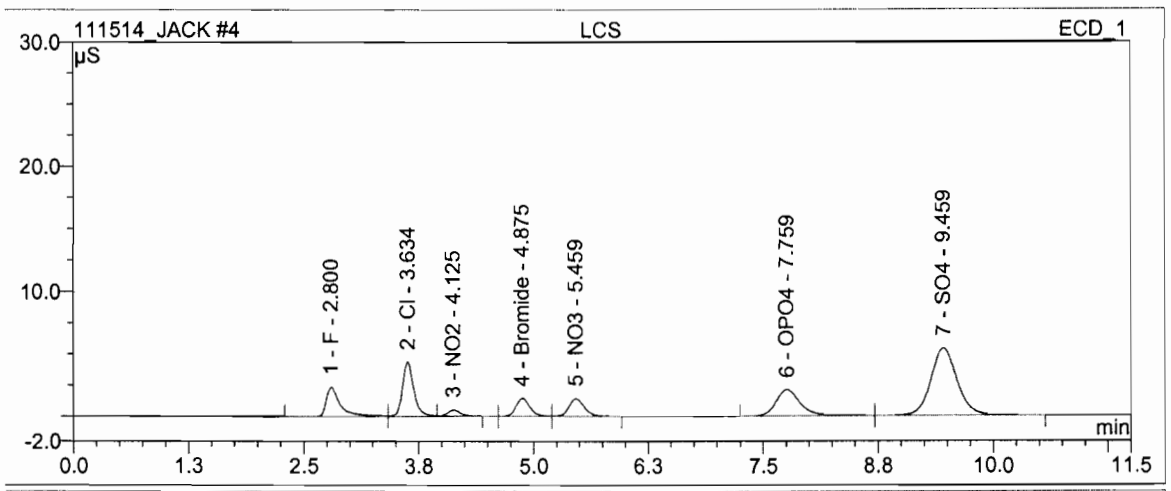


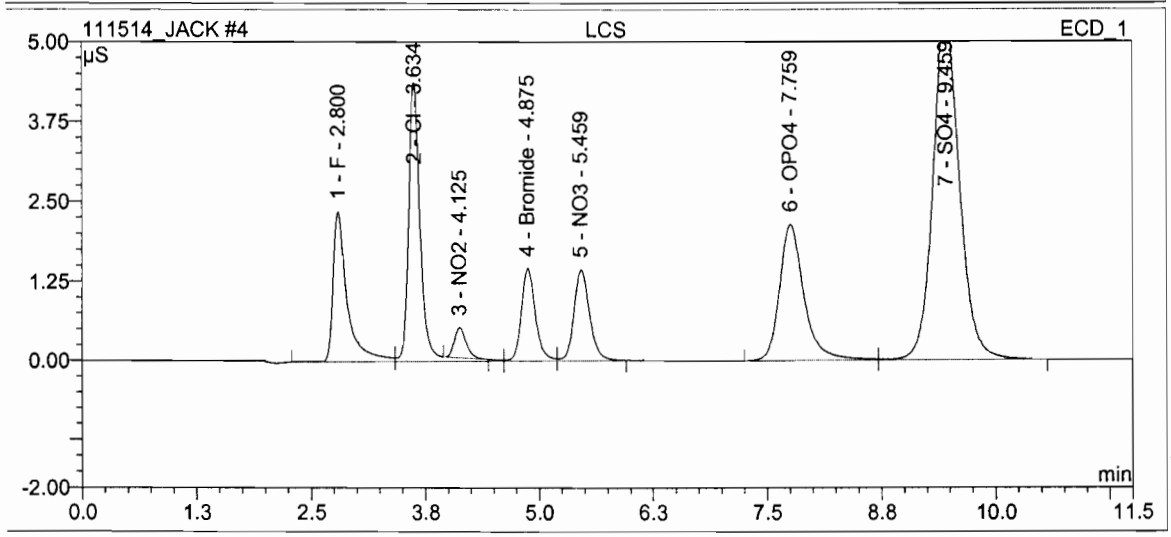


Integration Report - ECD_1

Sample Name:	**LCS**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 13:24**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BM	0.428	2.356	1030.7186
2	3.63	Cl	M	0.656	4.366	2050.9539
3	4.13	NO2	Rd	0.072	0.474	115.1703
4	4.88	Bromide	M	0.260	1.453	2027.0989
5	5.46	NO3	MB	0.286	1.431	401.0550
6	7.76	OPO4	BM	0.671	2.139	7776.9679
7	9.46	SO4	MB	1.819	5.407	7781.8031
		TOTAL:		4.19	17.63	21183.77





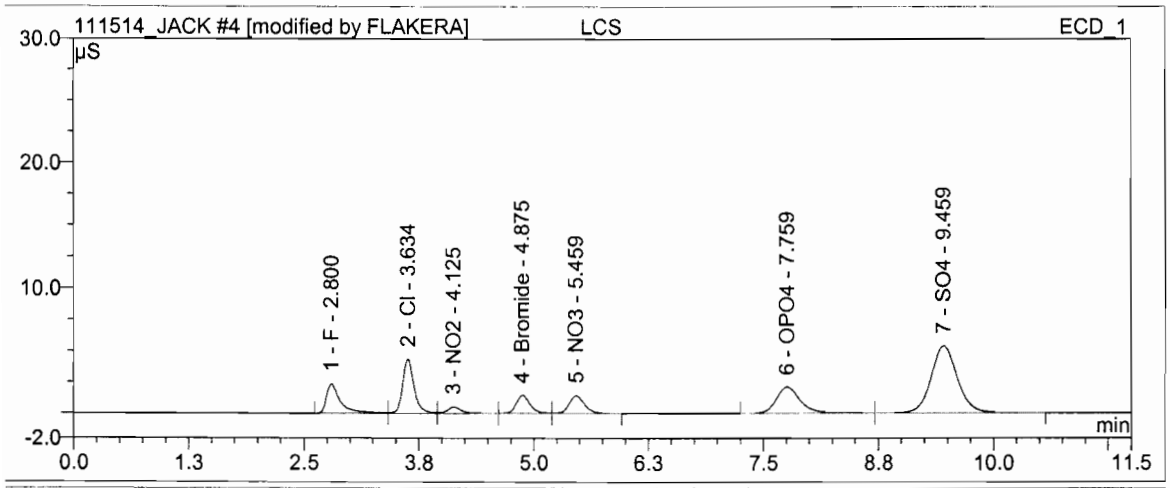
MI AF 11-21-14

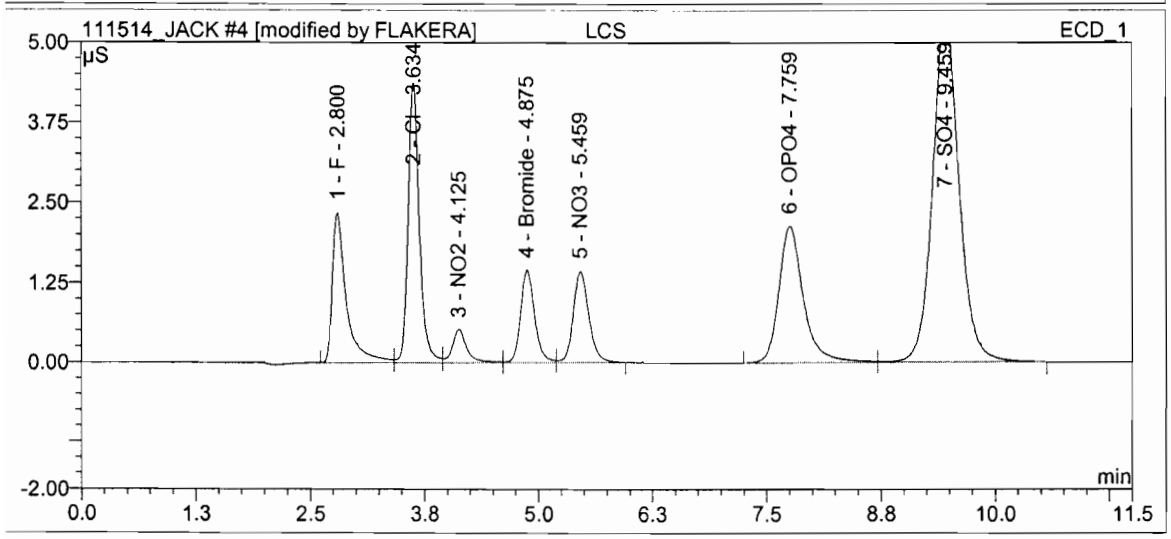
All but OPO4, SO4

Integration Report - ECD_1

Sample Name:	**LCS**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 13:24**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BM *	0.415	2.343	998.7804
2	3.63	Cl	M *	0.624	4.356	1951.0110
3	4.13	NO2	M *	0.094	0.520	150.5237
4	4.88	Bromide	M *	0.257	1.449	2006.8882
5	5.46	NO3	MB*	0.284	1.429	399.3486
6	7.76	OPO4	BM	0.671	2.139	7776.9679
7	9.46	SO4	MB	1.819	5.407	7781.8031
		TOTAL:		4.17	17.64	21065.32

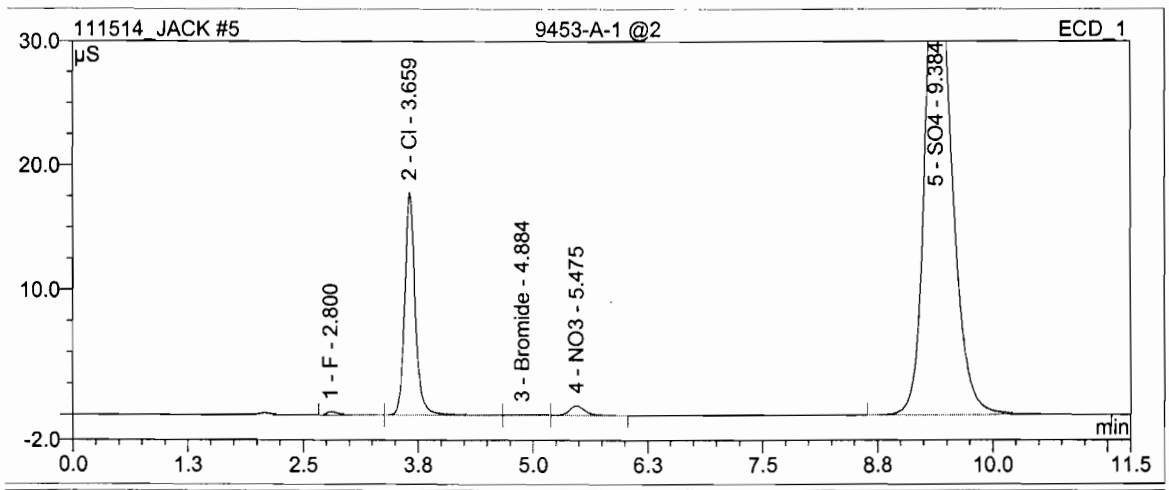


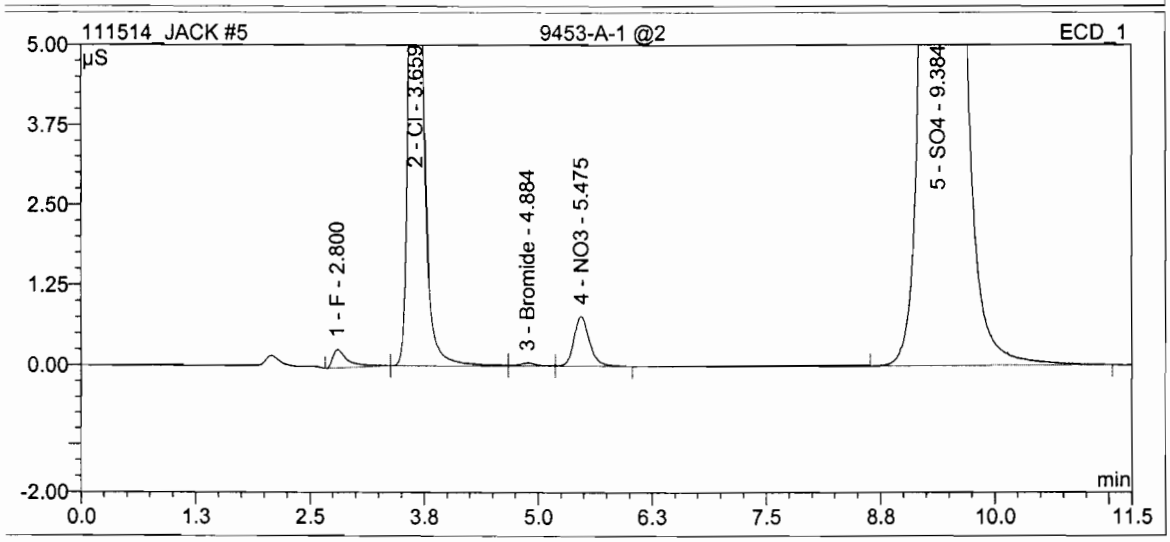


Integration Report - ECD_1

Sample Name:	**9453-A-1 @2**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 13:38**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BMB	0.056	0.289	135.2275
2	3.66	Cl	bM	2.367	17.847	7397.3305
3	4.88	Bromide	M	0.011	0.050	85.7850
4	5.48	NO3	MB	0.155	0.776	217.6788
5	9.38	SO4	BMB	13.390	41.537	57271.3841
		TOTAL:		15.98	60.50	65107.41

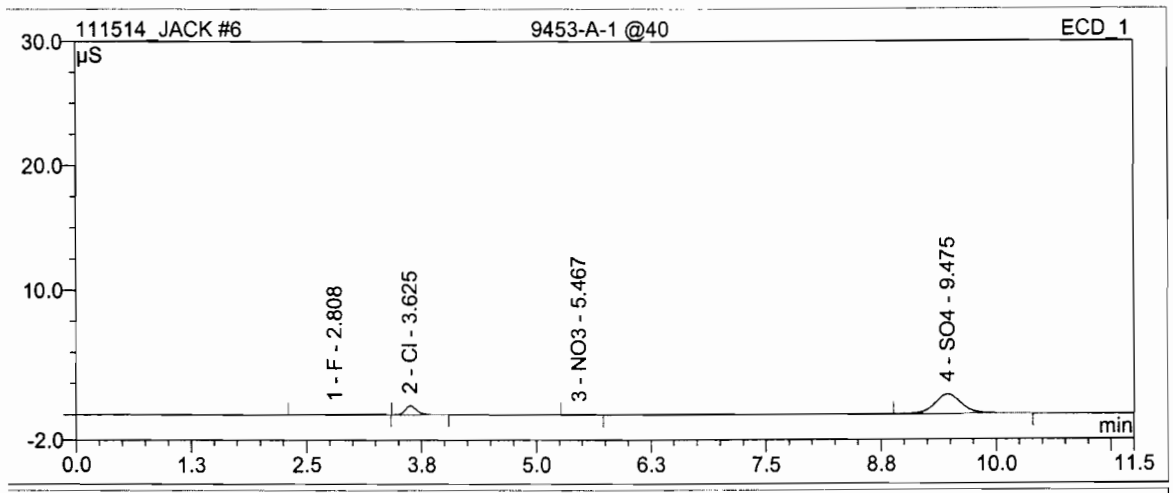


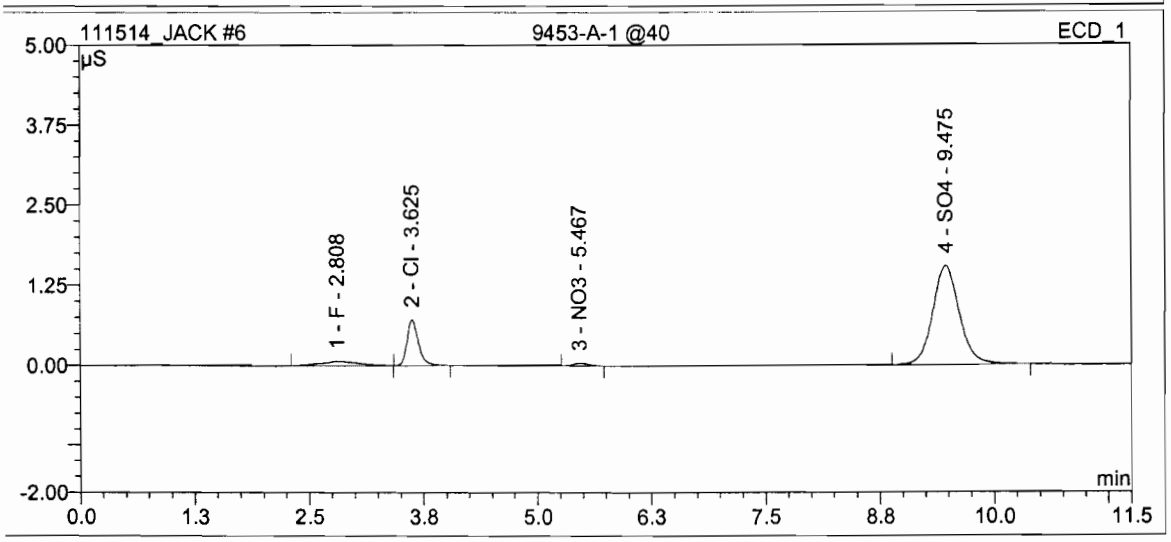


Integration Report - ECD_1

Sample Name:	**9453-A-1 @40**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 13:52**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.81	F	BMB	0.034	0.072	81.2051
2	3.63	Cl	BMB	0.104	0.714	323.6318
3	5.47	NO3	BMB	0.008	0.042	11.2641
4	9.48	SO4	BMB	0.525	1.539	2245.4987
TOTAL:				0.67	2.37	2661.60

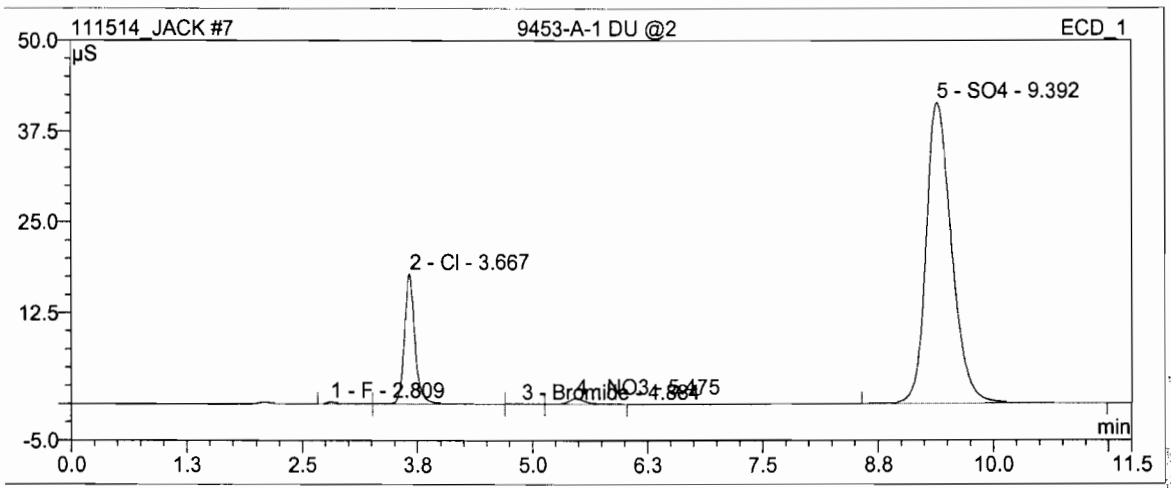


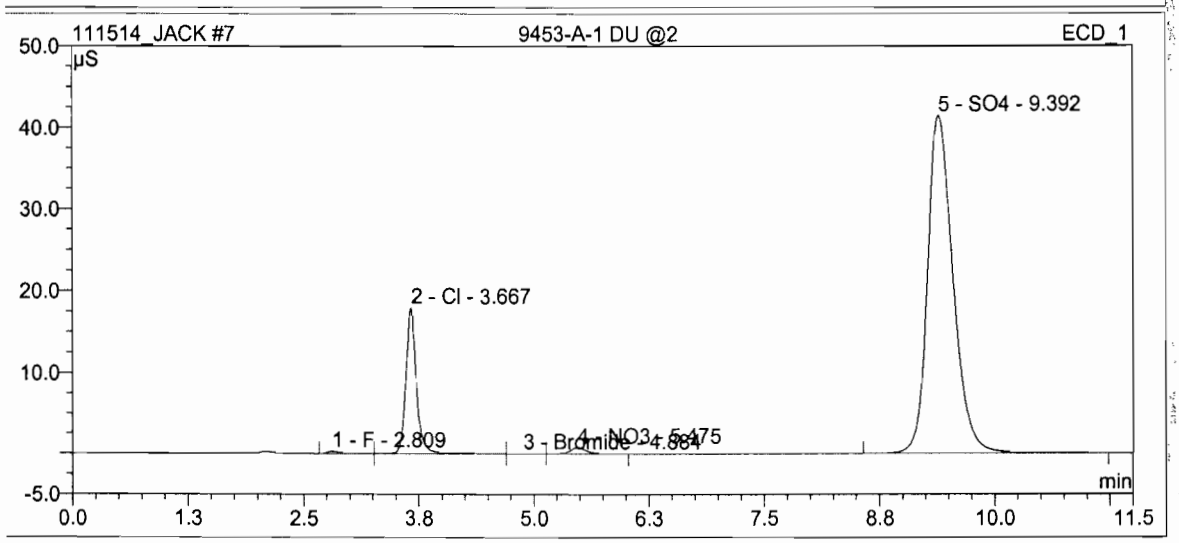


Integration Report - ECD_1

Sample Name:	**9453-A-1 DU @2**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 14:05**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.81	F	BM	0.062	0.289	150.4199
2	3.67	Cl	M	2.405	17.970	7516.5057
3	4.88	Bromide	M	0.015	0.060	119.6712
4	5.48	NO3	MB	0.160	0.783	224.6376
5	9.39	SO4	BMB	13.380	41.446	57230.3326
		TOTAL:		16.02	60.55	65241.57





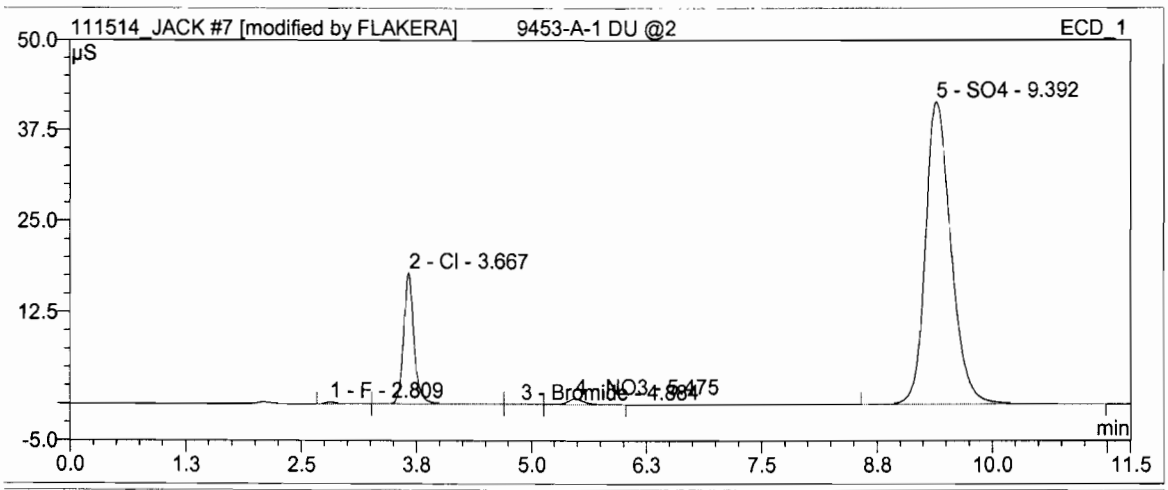
MI AF 11-2414

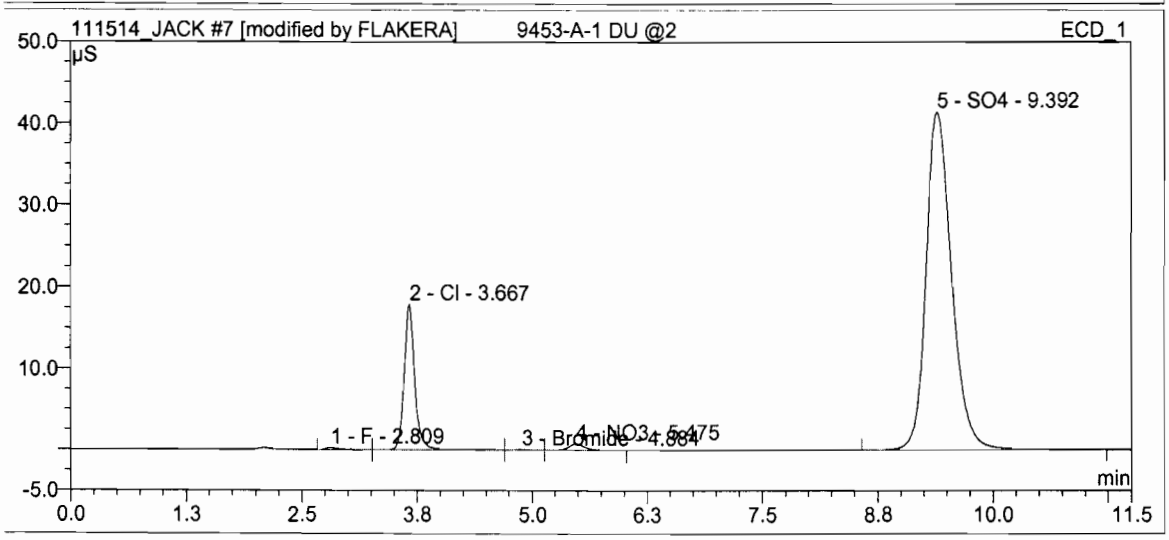
F, Cl, Br, NO3

Integration Report - ECD_1

Sample Name:	**9453-A-1 DU @2**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 14:05**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.81	F	BMb*	0.052	0.281	125.2253
2	3.67	Cl	bM *	2.368	17.940	7400.8473
3	4.88	Bromide	M *	0.009	0.045	72.2700
4	5.48	NO3	MB*	0.155	0.777	217.5751
5	9.39	SO4	BMB	13.380	41.446	57230.3326
		TOTAL:		15.96	60.49	65046.25

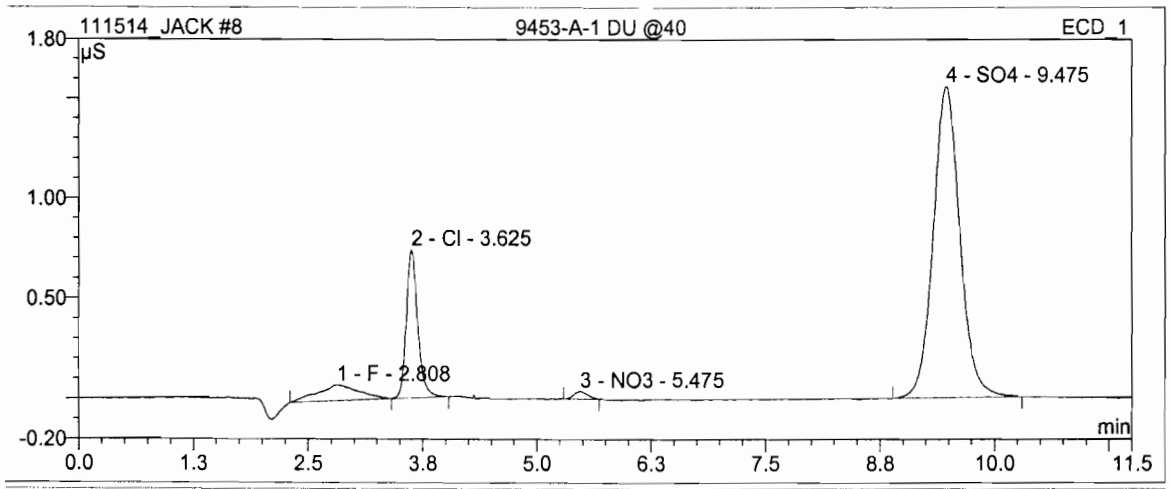


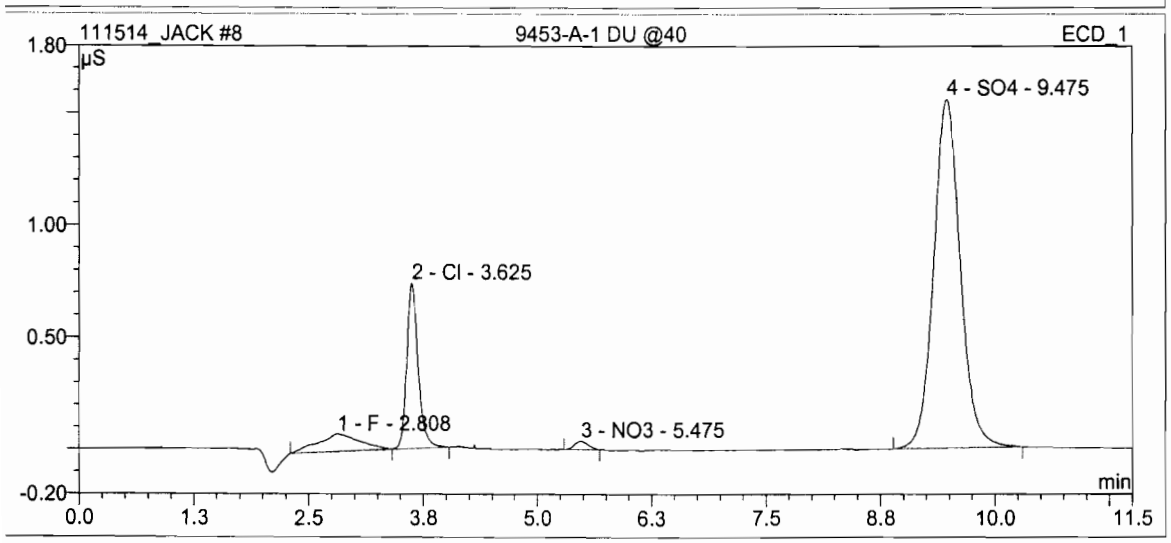


Integration Report - ECD_1

Sample Name:	**9453-A-1 DU @40**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 14:19**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.81	F	Ru	0.040	0.078	96.6177
2	3.63	Cl	BMB	0.109	0.739	340.9632
3	5.48	NO3	BMB	0.007	0.038	9.2841
4	9.48	SO4	BMB	0.528	1.556	2259.4737
		TOTAL:		0.68	2.41	2706.34





MI
AF 11-21-14

FCl

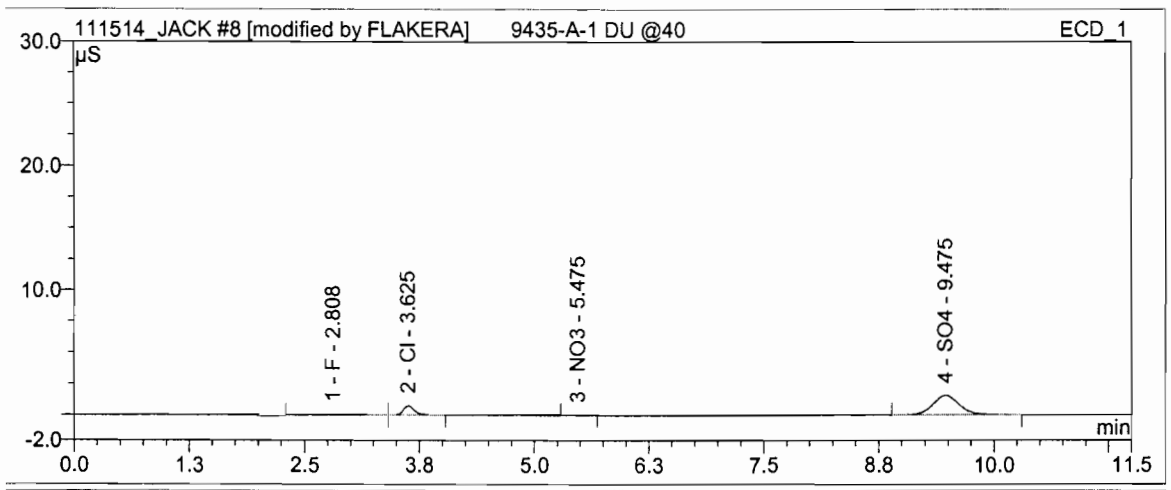
0

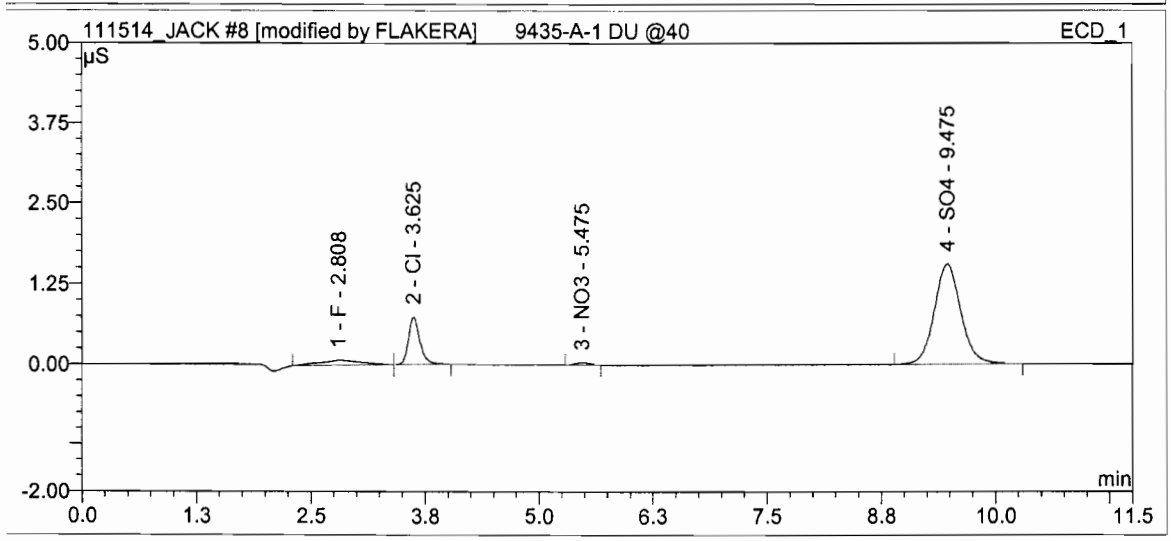
SBAF 11-21-14

Integration Report - ECD_1

Sample Name:	**9435-A-1 DU @40**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 14:19**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.81	F	BM *	0.042	0.079	100.6708
2	3.63	Cl	MB*	0.107	0.739	335.7054
3	5.48	NO3	BMB	0.007	0.038	9.2841
4	9.48	SO4	BMB	0.528	1.556	2259.4737
		TOTAL:		0.68	2.41	2705.13

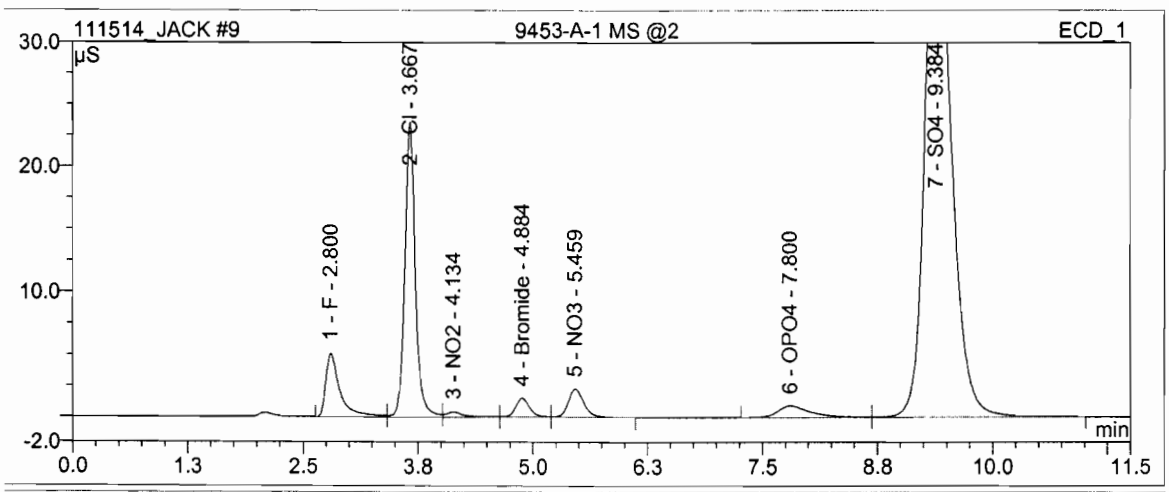


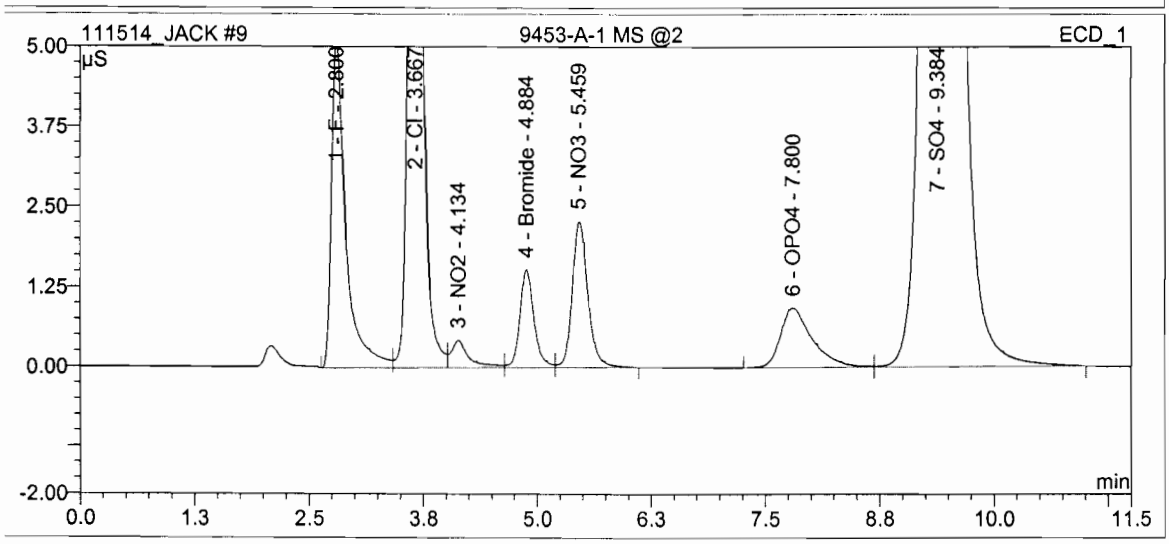


Integration Report - ECD_1

Sample Name:	**9453-A-1 MS @2**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 14:33**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BM	0.923	5.142	2222.3193
2	3.67	Cl	M	3.112	23.603	9724.4312
3	4.13	NO2	M	0.096	0.426	153.4539
4	4.88	Bromide	M	0.275	1.533	2148.4873
5	5.46	NO3	MB	0.455	2.277	639.1975
6	7.80	OPO4	BM	0.378	0.936	4384.6954
7	9.38	SO4	MB	14.392	44.646	61558.2771
		TOTAL:		19.63	78.56	80830.86

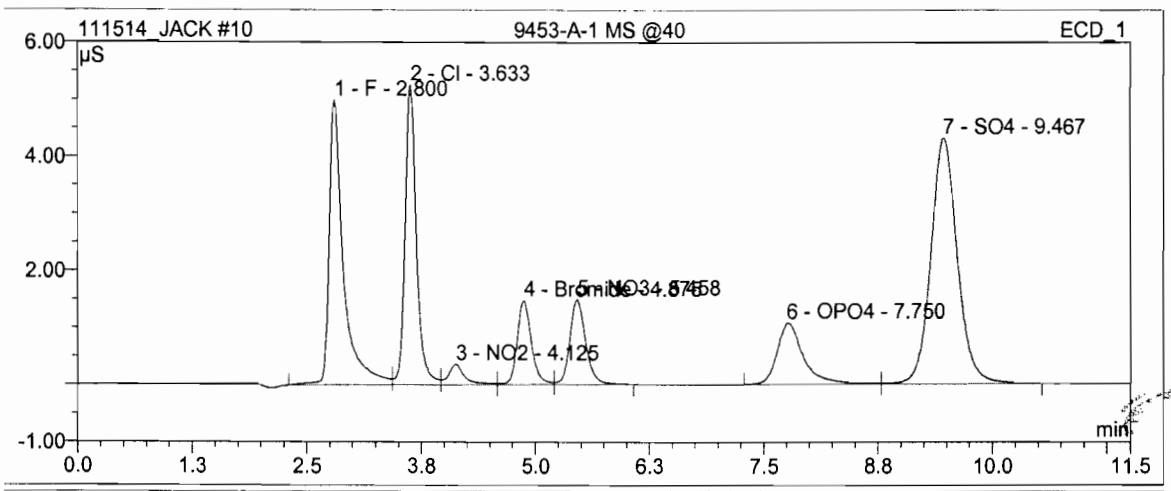


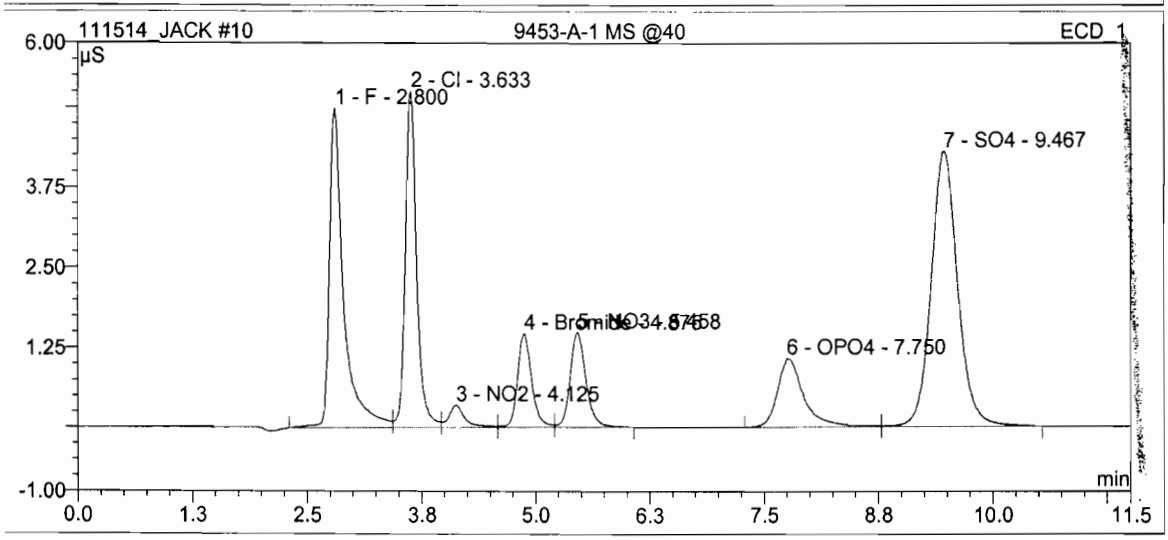


Integration Report - ECD_1

Sample Name:	**9453-A-1 MS @40**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 14:47**	*Run Time:*	**11.51**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BM	0.908	4.995	2185.3033
2	3.63	Cl	M	0.757	5.260	2366.0063
3	4.13	NO2	M	0.073	0.359	117.2410
4	4.88	Bromide	M	0.265	1.474	2071.4126
5	5.46	NO3	MB	0.300	1.493	421.6875
6	7.75	OPO4	BM	0.362	1.079	4201.6476
7	9.47	SO4	MB	1.456	4.302	6226.7197
		TOTAL:		4.12	18.96	17590.02





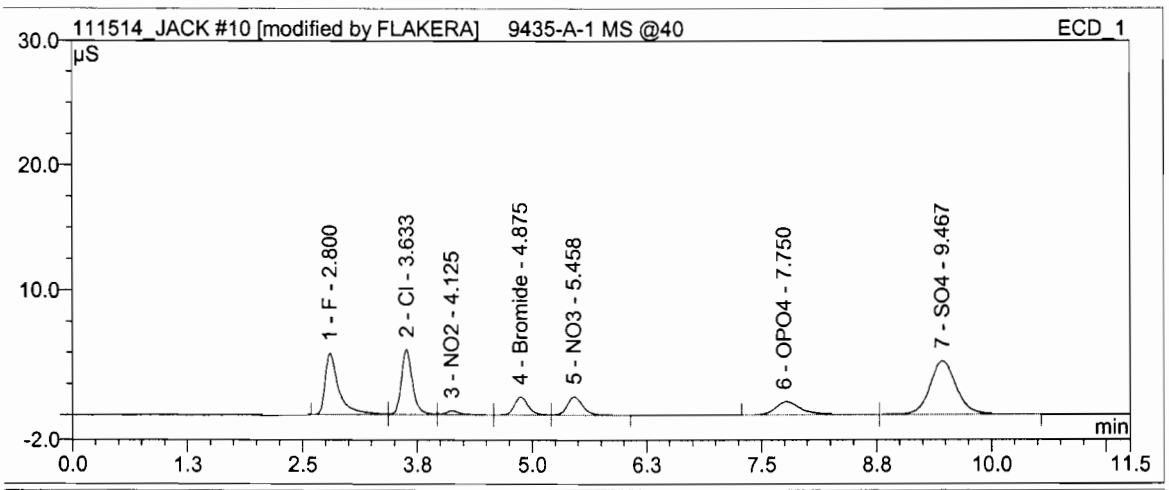
all but OPO4, SO4

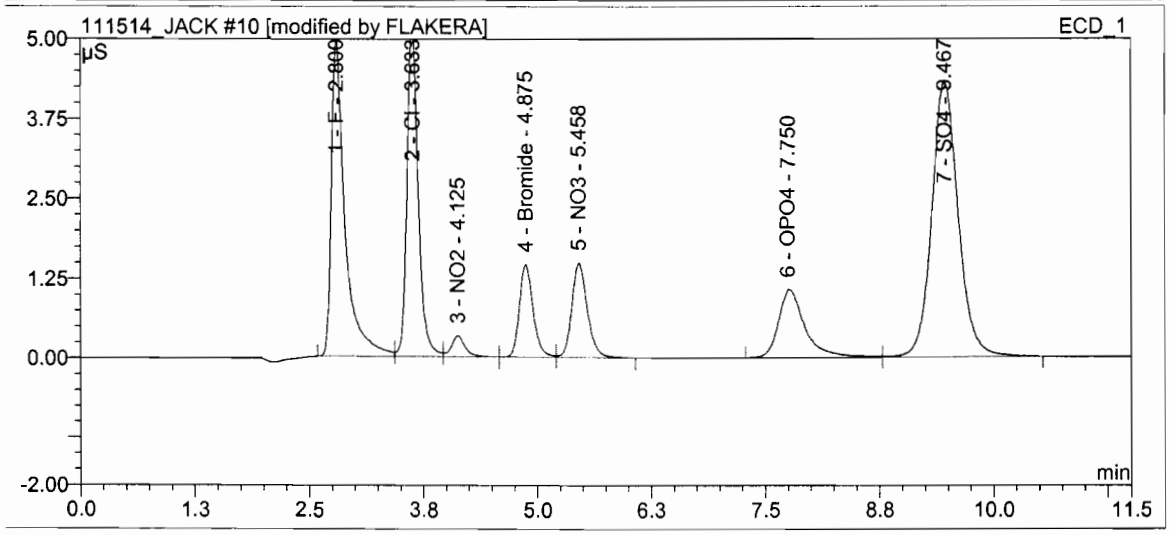
53 µF 11-21-14

Integration Report - ECD_1

Sample Name:	**9435-A-1 MS @40**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 14:47**	*Run Time:*	**11.51**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BM *	0.868	4.953	2088.9544
2	3.63	Cl	M *	0.741	5.228	2315.1938
3	4.13	NO2	M *	0.059	0.333	94.4755
4	4.88	Bromide	M *	0.256	1.459	1997.5879
5	5.46	NO3	MB*	0.295	1.485	414.9143
6	7.75	OPO4	BM	0.362	1.079	4201.6476
7	9.47	SO4	MB	1.456	4.302	6226.7197
		TOTAL:		4.04	18.84	17339.49

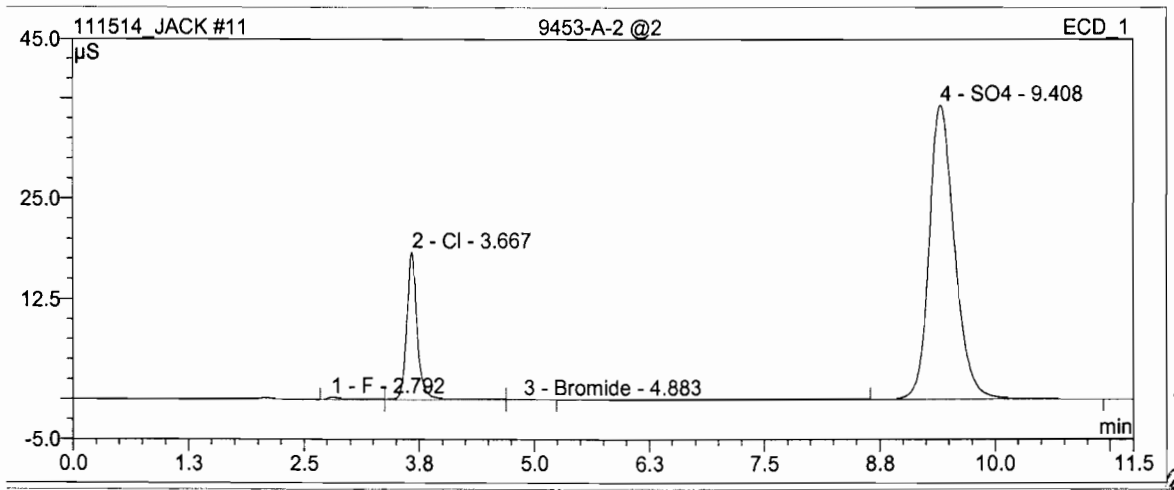


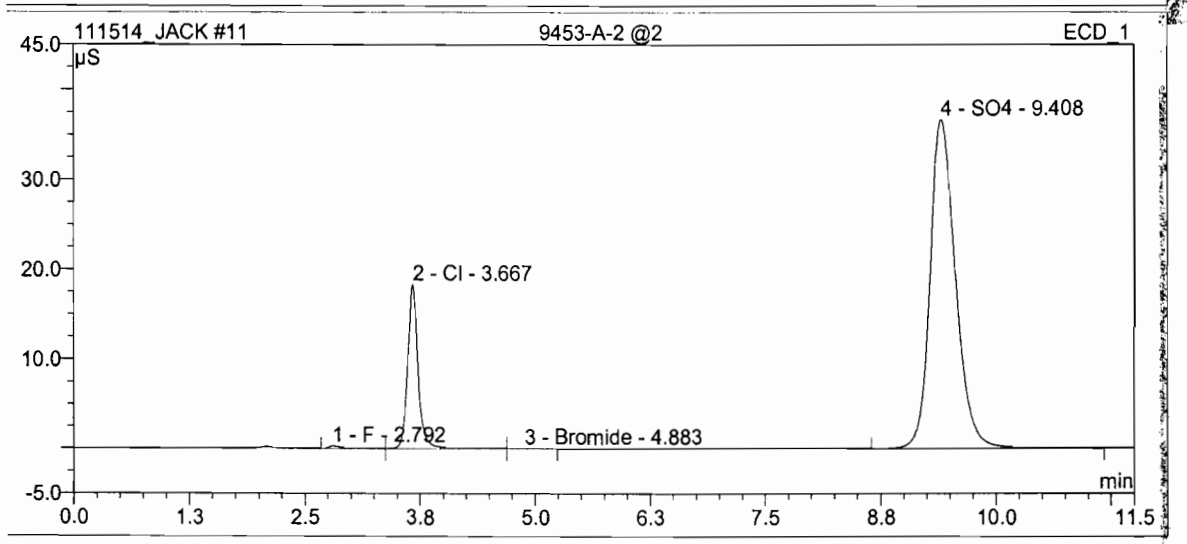


Integration Report - ECD_1

Sample Name:	**9453-A-2 @2**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 15:01**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.79	F	BM	0.073	0.319	175.1006
2	3.67	Cl	M	2.438	18.365	7620.3531
3	4.88	Bromide	MB	0.013	0.054	102.6469
4	9.41	SO4	BMB	11.812	36.692	50520.0739
		TOTAL:		14.34	55.43	58418.17





MI AF 11-21-14

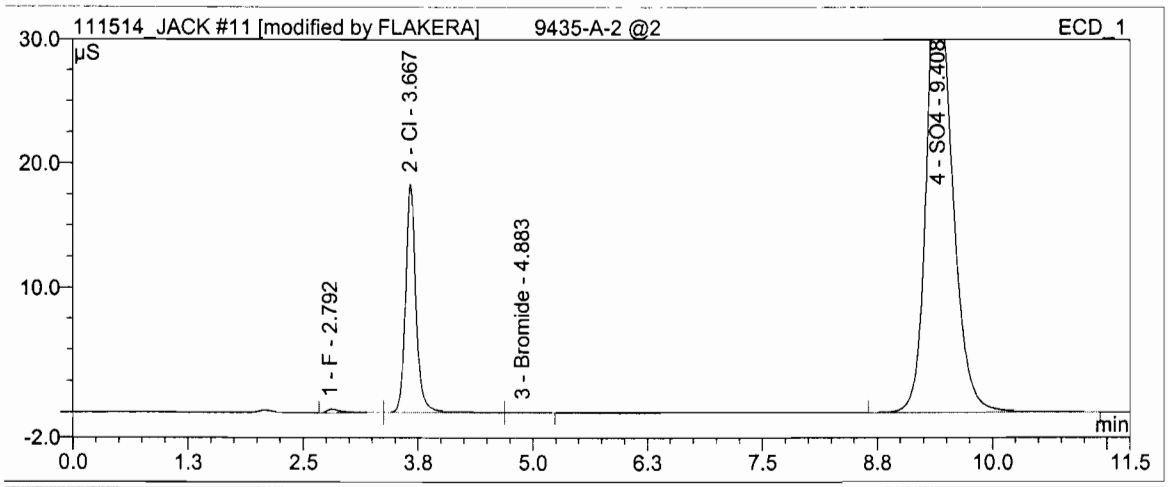
F, Cl, Br

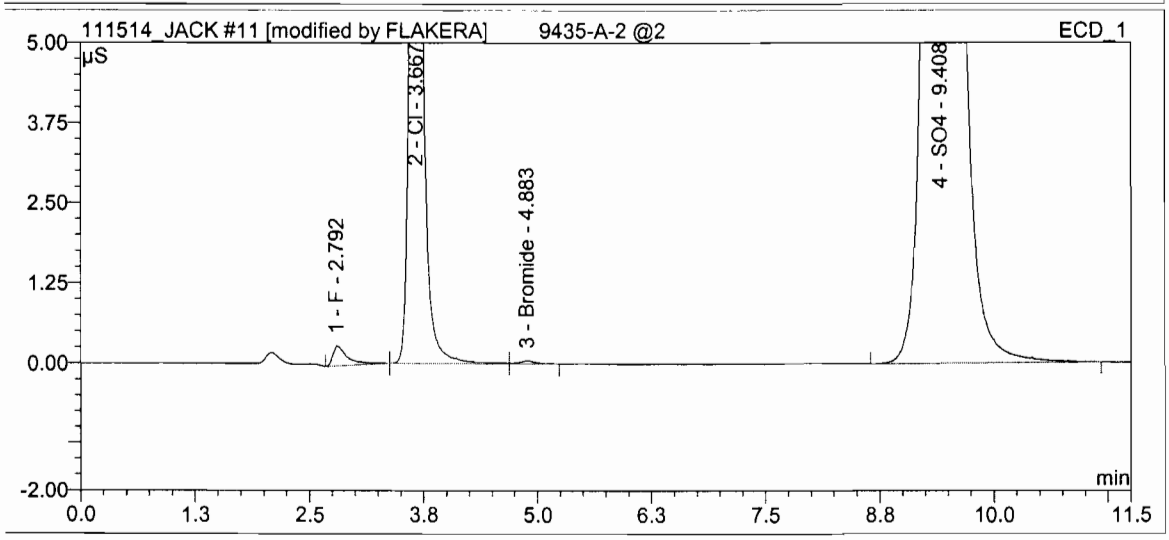
CJAF 11-21-14

Integration Report - ECD_1

Sample Name:	**9435-A-2 @2**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 15:01**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.79	F	BMb*	0.058	0.313	140.5720
2	3.67	Cl	bM *	2.404	18.331	7511.2037
3	4.88	Bromide	MB*	0.010	0.046	76.7284
4	9.41	SO4	BMB	11.812	36.692	50520.0739
		TOTAL:		14.28	55.38	58248.58

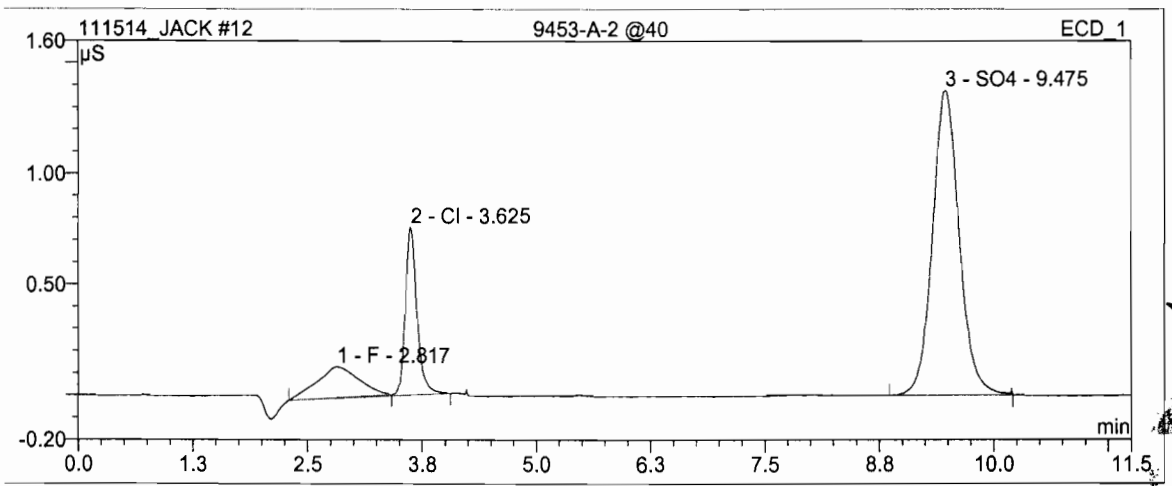


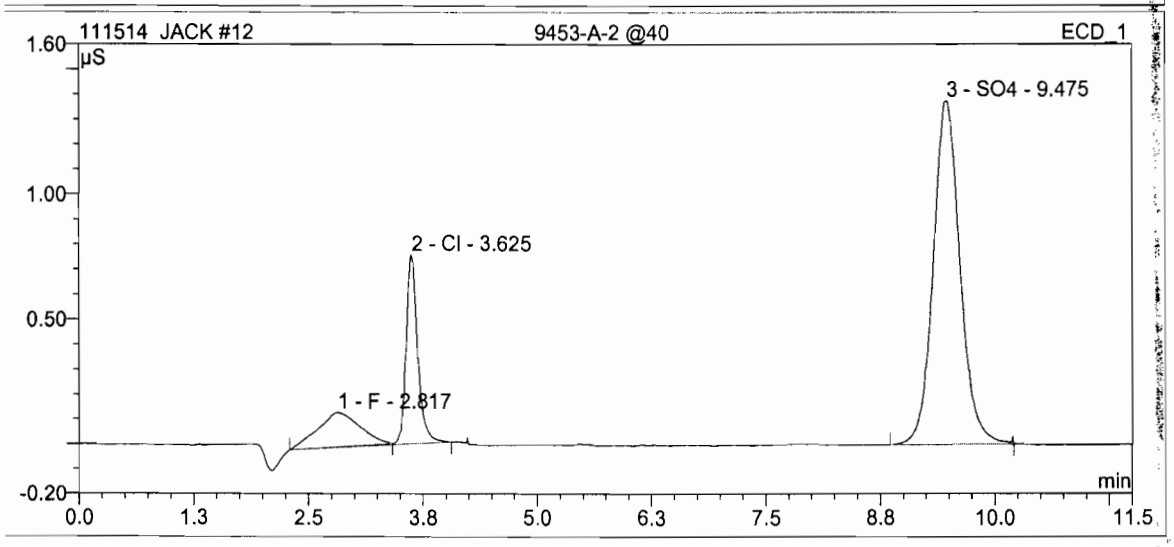


Integration Report - ECD_1

Sample Name:	**9453-A-2 @40**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 15:15**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.82	F	Ru	0.074	0.139	178.1171
2	3.63	Cl	BMB	0.115	0.757	359.6400
3	9.48	SO4	BMB	0.470	1.377	2010.5799
		TOTAL:		0.66	2.27	2548.34





MI AF 11-21-14

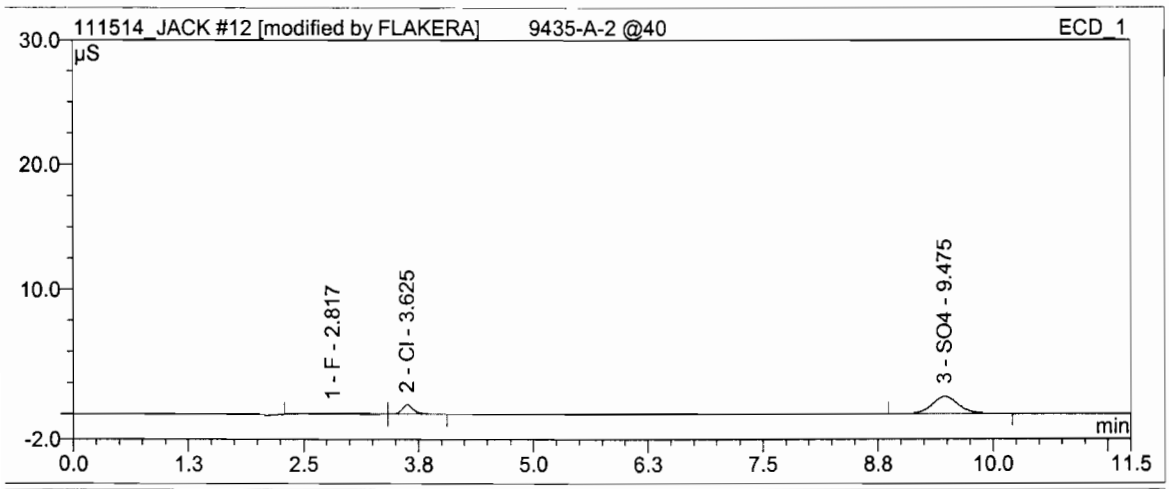
F.C1

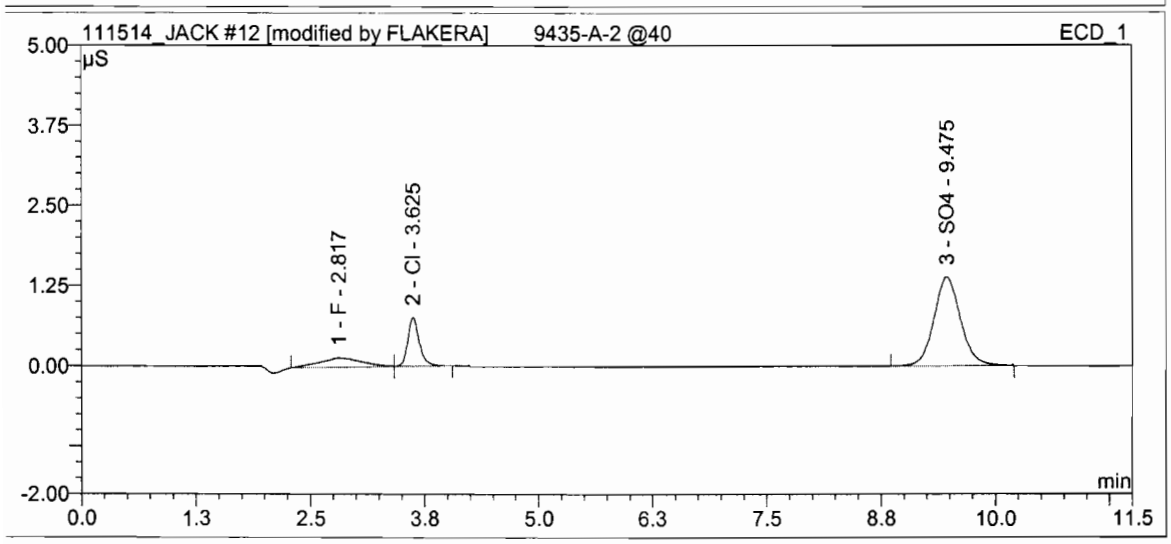
AF 11-21-14

Integration Report - ECD_1

Sample Name:	**9435-A-2 @40**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 15:15**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.82	F	BM *	0.077	0.141	185.6221
2	3.63	Cl	MB*	0.112	0.757	349.8990
3	9.48	SO4	BMB	0.470	1.377	2010.5799
		TOTAL:		0.66	2.27	2546.10

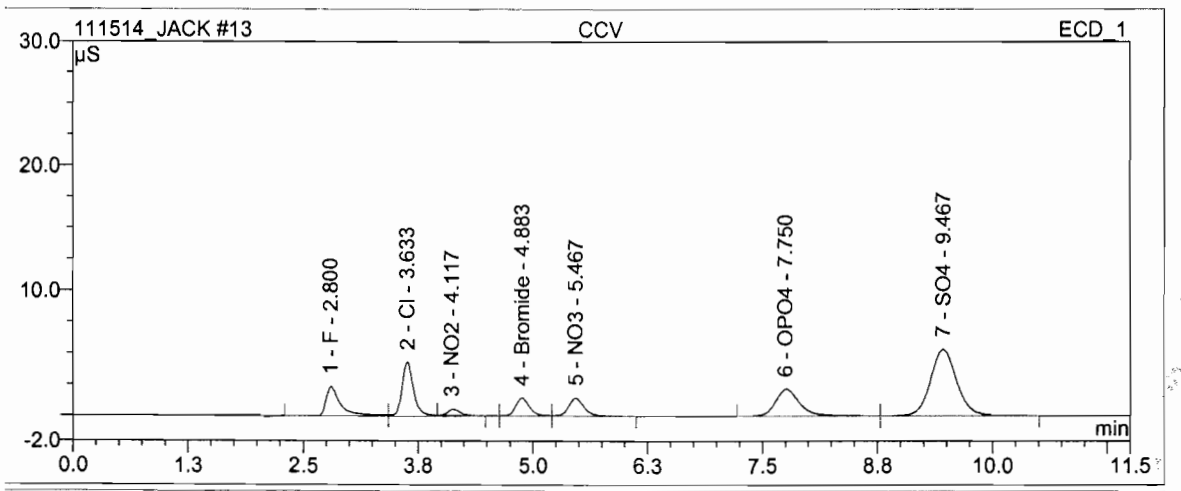


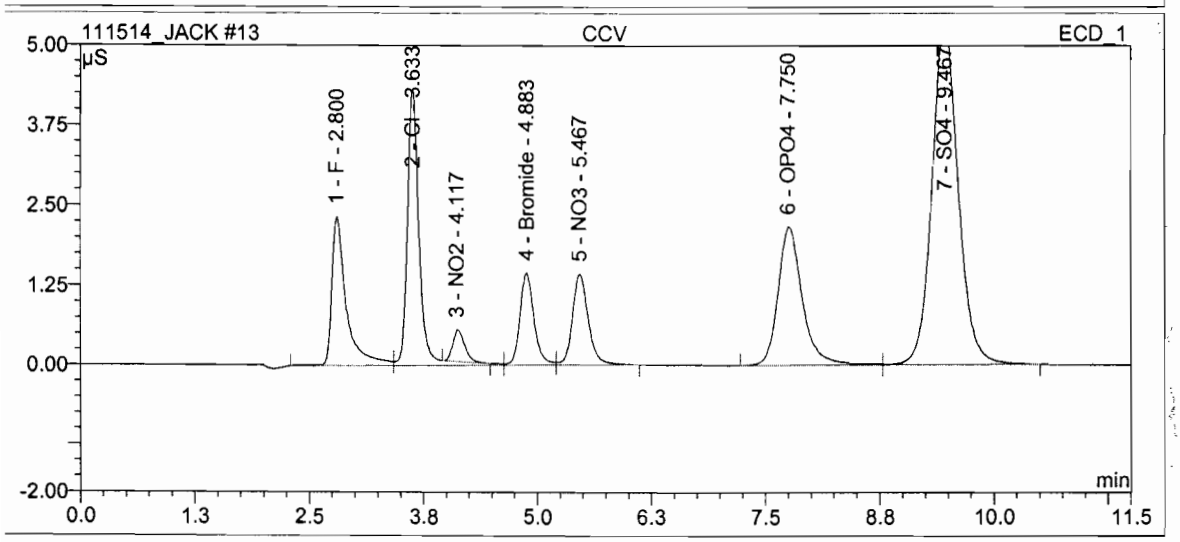


Integration Report - ECD_1

Sample Name:	**CCV**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 15:29**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BM	0.433	2.331	1042.4566
2	3.63	Cl	M	0.655	4.325	2047.6780
3	4.12	NO2	Rd	0.076	0.503	120.7446
4	4.88	Bromide	M	0.260	1.444	2029.2143
5	5.47	NO3	MB	0.290	1.426	407.6020
6	7.75	OPO4	BM	0.675	2.169	7825.0288
7	9.47	SO4	MB	1.791	5.338	7658.7442
		TOTAL:		4.18	17.54	21131.47





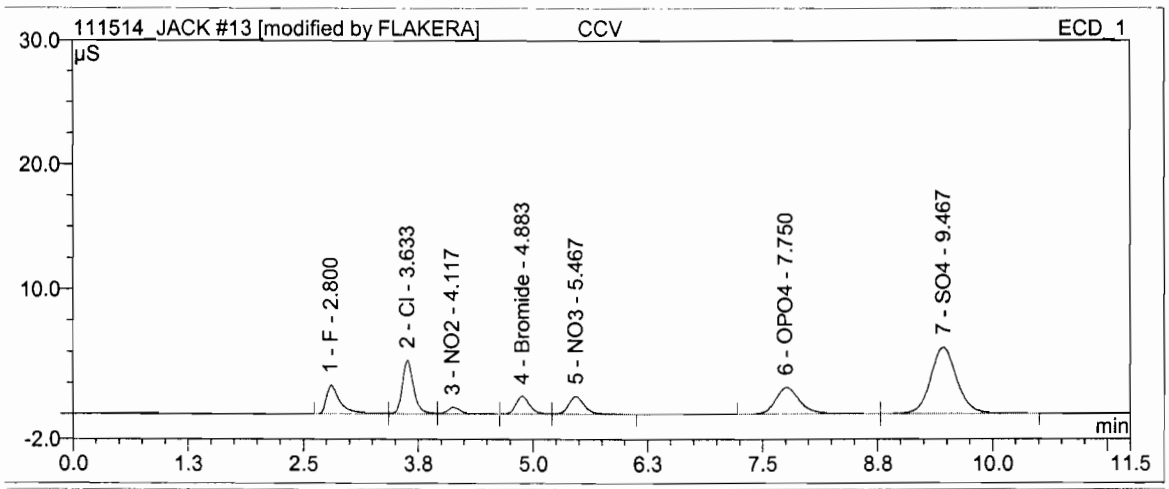
MI AF 11-21-14

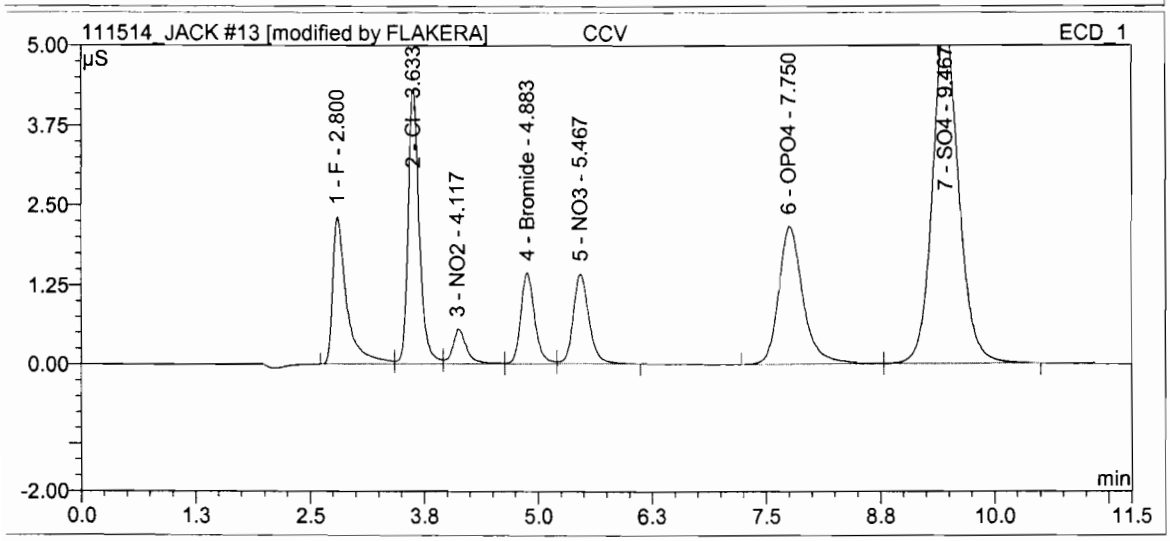
all but OPO4, SO4

Integration Report - ECD_1

Sample Name:	**CCV**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 15:29**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BM *	0.416	2.313	1000.6312
2	3.63	Cl	M *	0.618	4.312	1931.5903
3	4.12	NO2	M *	0.099	0.553	158.2999
4	4.88	Bromide	M *	0.256	1.437	2000.1076
5	5.47	NO3	MB*	0.288	1.423	404.4230
6	7.75	OPO4	BM	0.675	2.169	7825.0288
7	9.47	SO4	MB	1.791	5.338	7658.7442
		TOTAL:		4.14	17.54	20978.83

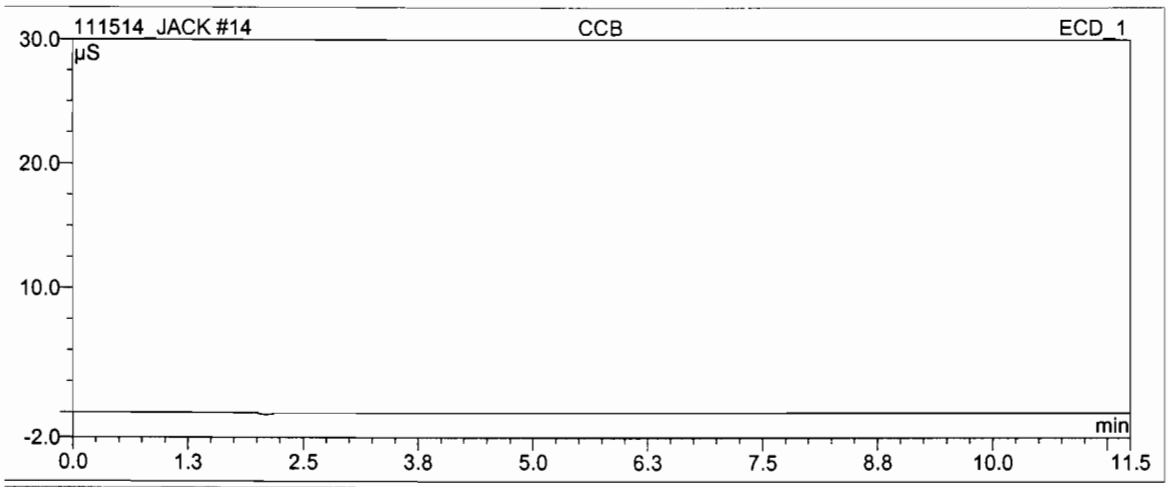


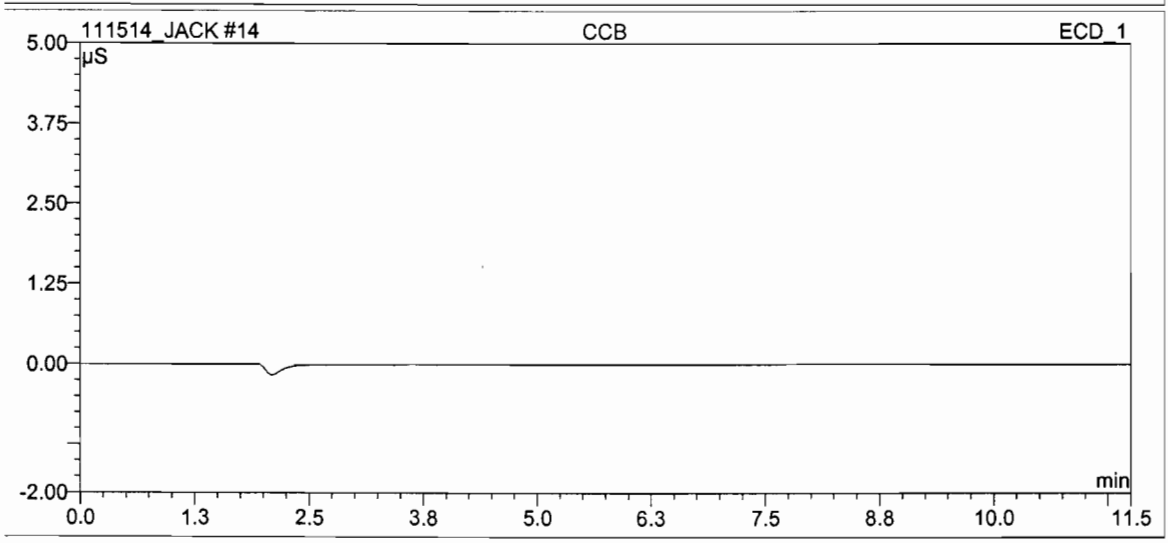


Integration Report - ECD_1

Sample Name:	**CCB**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 15:43**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
		TOTAL:		0.00	0.00	0.00

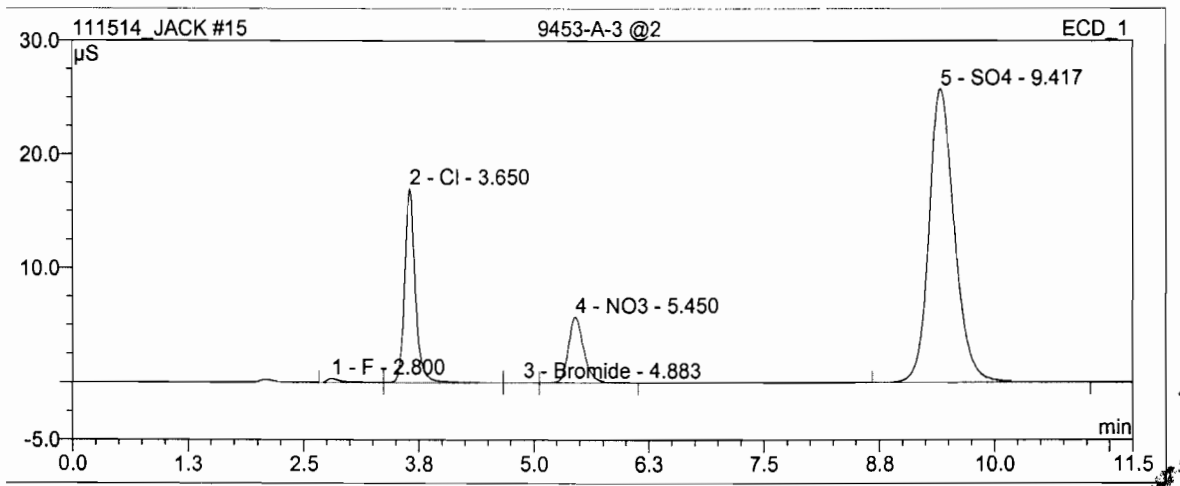


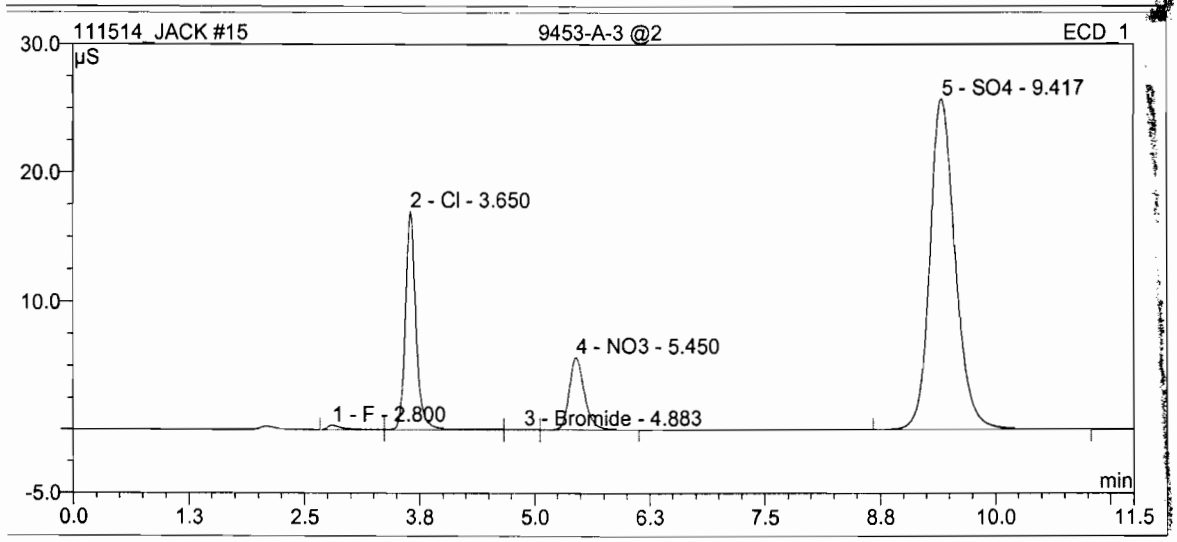


Integration Report - ECD_1

Sample Name:	**9453-A-3 @2**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 15:57**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BM	0.080	0.367	191.9637
2	3.65	Cl	M	2.294	16.991	7168.9396
3	4.88	Bromide	M	0.011	0.048	87.5475
4	5.45	NO3	MB	1.109	5.704	1558.3741
5	9.42	SO4	BMB	8.305	25.726	35520.0264
		TOTAL:		11.80	48.84	44526.85





MI AF 11-21-14

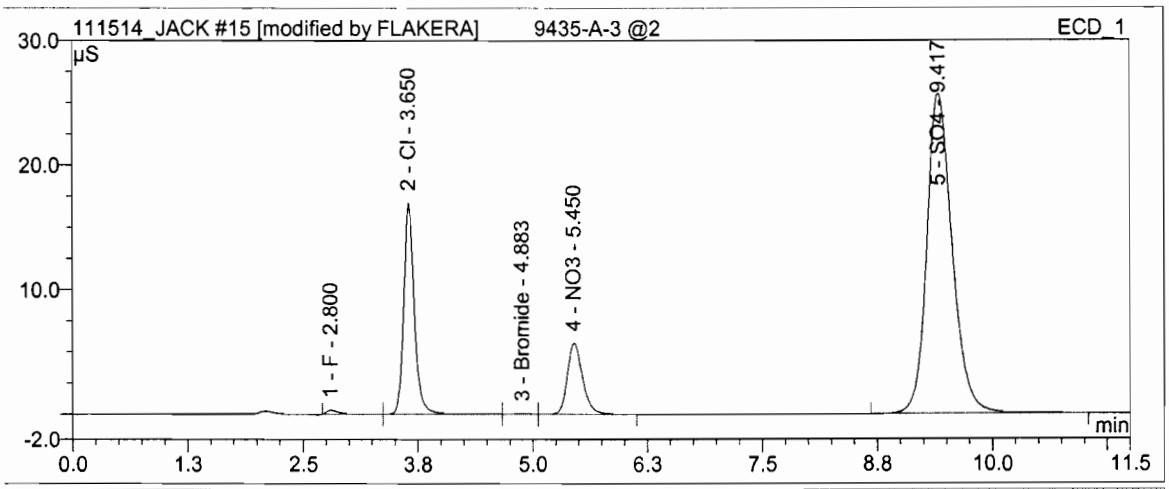
F, Cl, Br, NO3

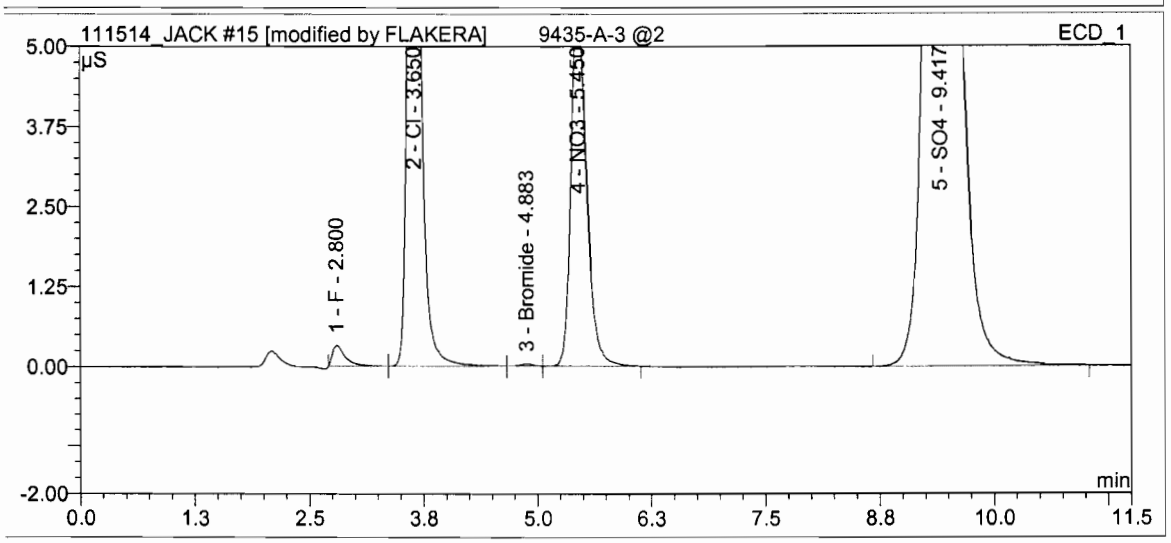
53 AF 11-21-14

Integration Report - ECD_1

Sample Name:	**9435-A-3 @2**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 15:57**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BM *	0.053	0.324	127.1653
2	3.65	Cl	M *	2.258	16.959	7057.8406
3	4.88	Bromide	M *	0.005	0.032	37.3659
4	5.45	NO3	MB*	1.102	5.696	1547.8890
5	9.42	SO4	BMB	8.305	25.726	35520.0264
		TOTAL:		11.72	48.74	44290.29

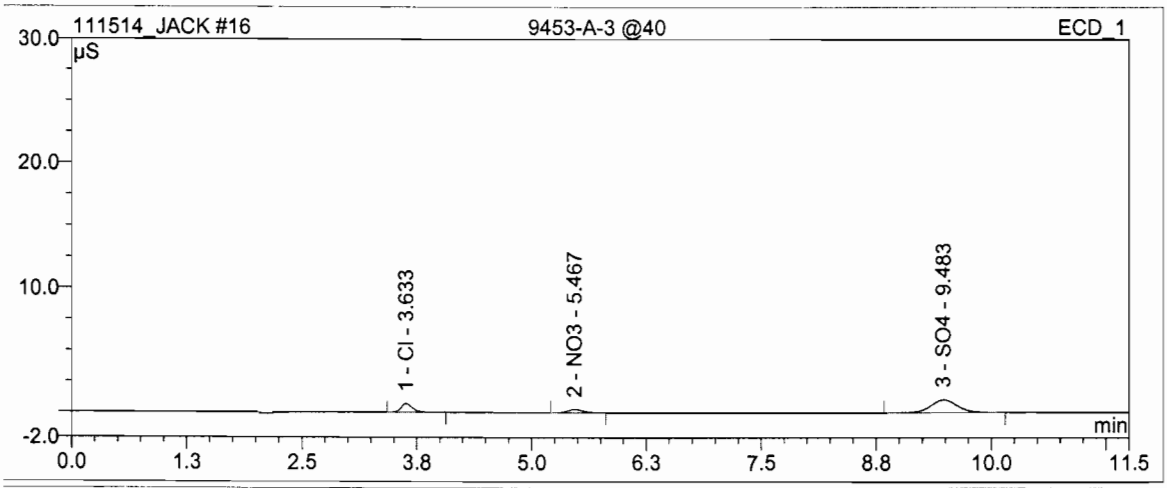


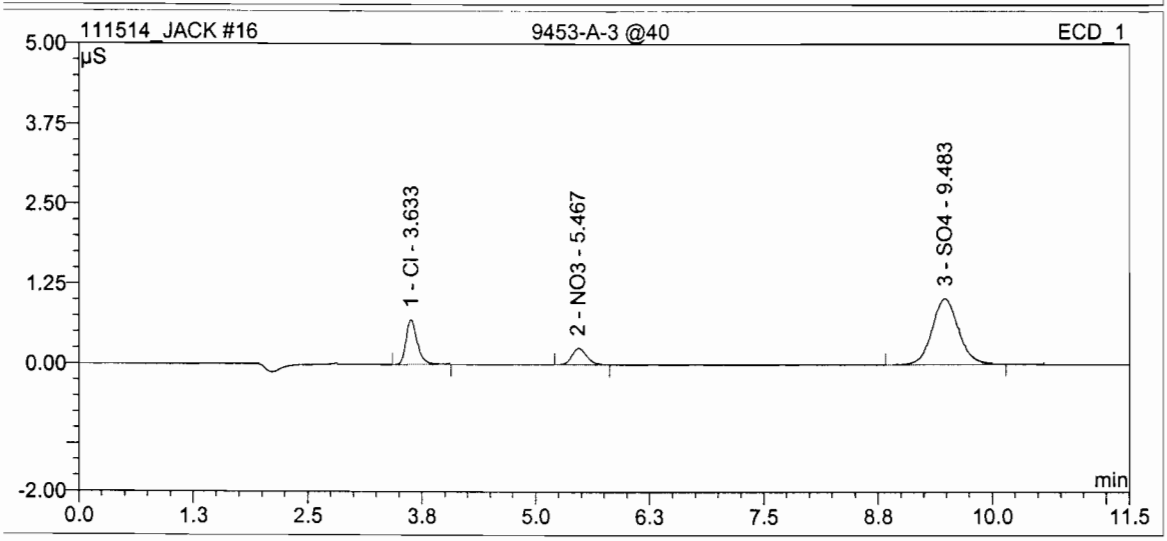


Integration Report - ECD_1

Sample Name:	**9453-A-3 @40**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 16:11**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	3.63	Cl	BMB	0.102	0.700	319.7281
2	5.47	NO3	BMB	0.051	0.259	70.9486
3	9.48	SO4	BMB	0.348	1.029	1487.9349
		TOTAL:		0.50	1.99	1878.61

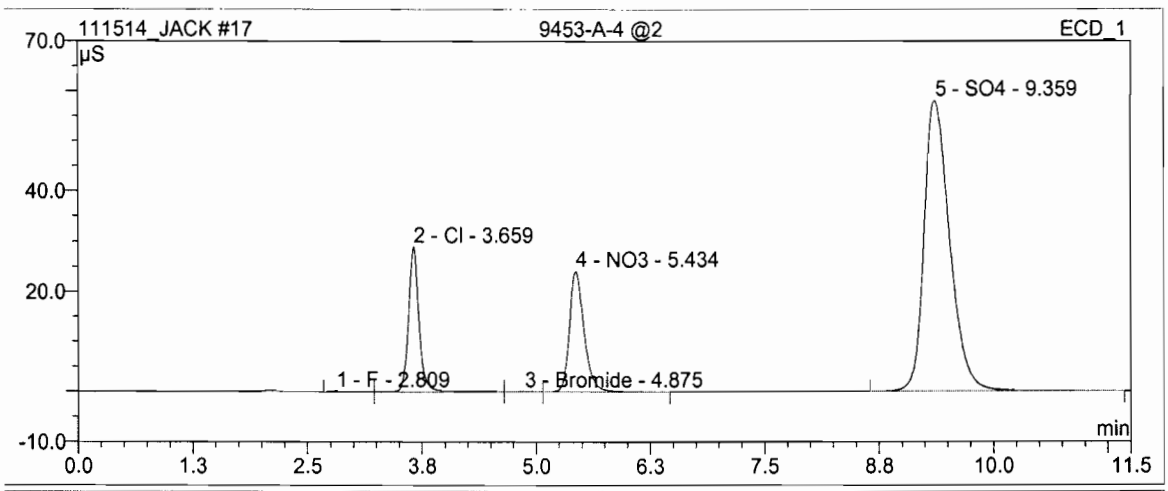


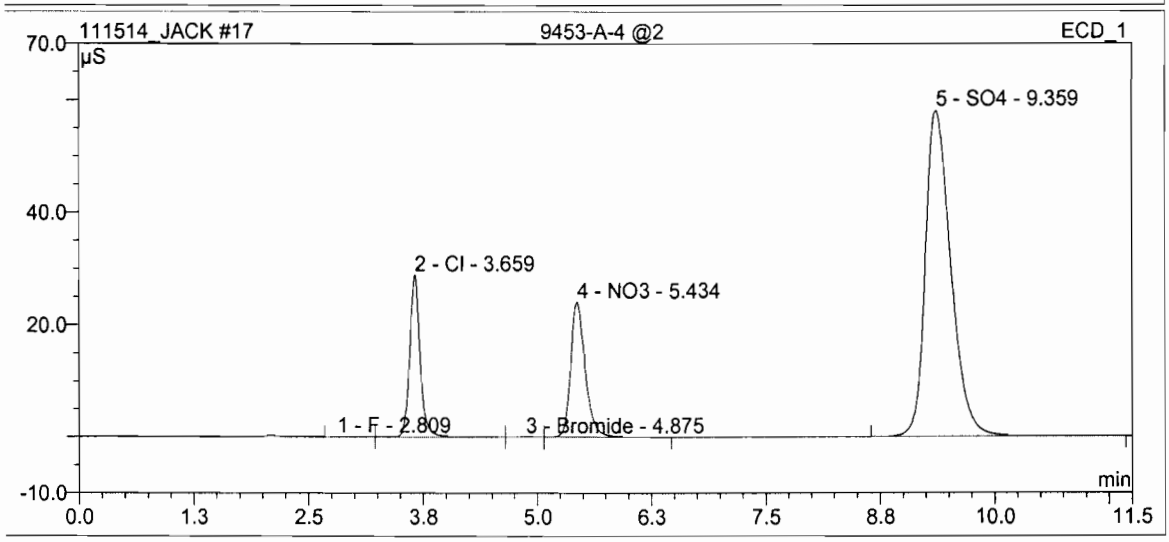


Integration Report - ECD_1

Sample Name:	**9453-A-4 @2**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 16:25**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.81	F	BM	0.038	0.160	92.2268
2	3.66	Cl	M	3.886	28.925	12142.4628
3	4.88	Bromide	M	0.020	0.086	153.3974
4	5.43	NO3	MB	4.504	24.122	6326.1665
5	9.36	SO4	BMB	18.977	58.100	81169.3448
		TOTAL:		27.42	111.39	99883.60





MI AF 11-21-14

F, Cl, Br, NO3

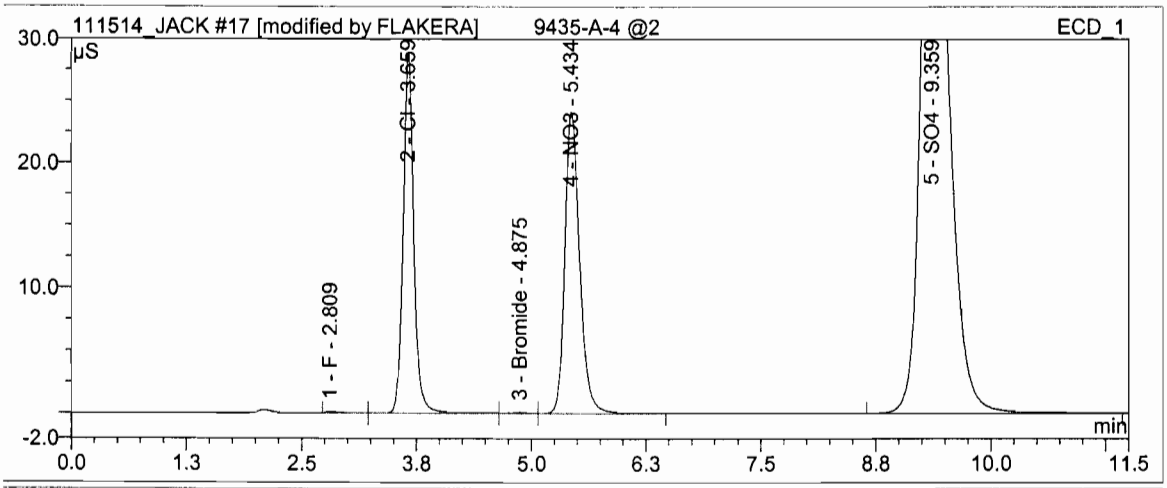
0

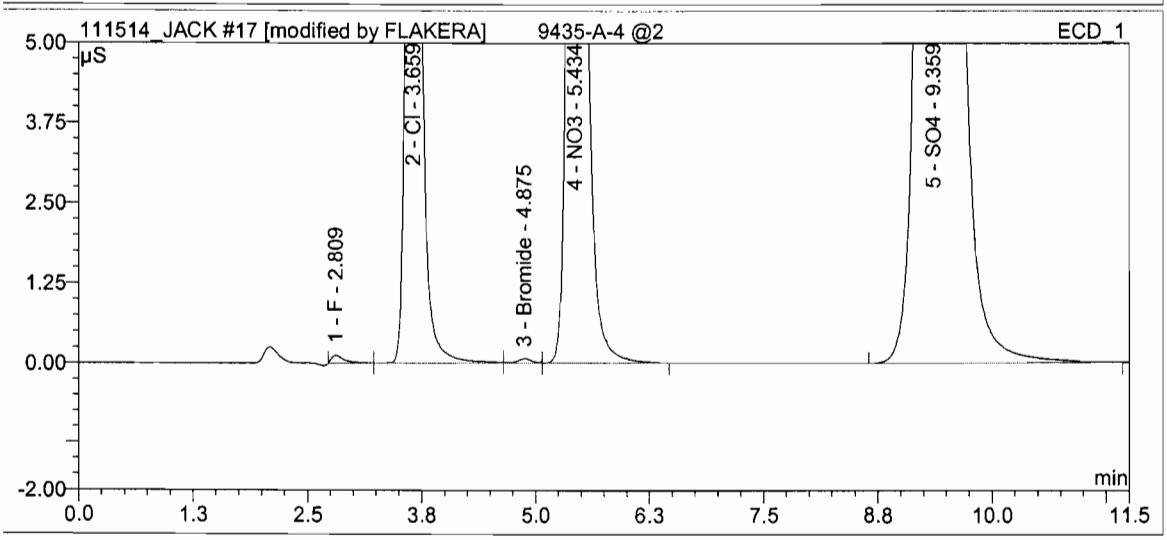
53 AF 11-21-14

Integration Report - ECD_1

Sample Name:	**9435-A-4 @2**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 16:25**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.81	F	BM *	0.019	0.122	46.8346
2	3.66	Cl	M *	3.848	28.896	12024.8316
3	4.88	Bromide	M *	0.013	0.069	97.8339
4	5.43	NO3	MB*	4.494	24.111	6311.9613
5	9.36	SO4	BMB	18.977	58.100	81169.3448
		TOTAL:		27.35	111.30	99650.81

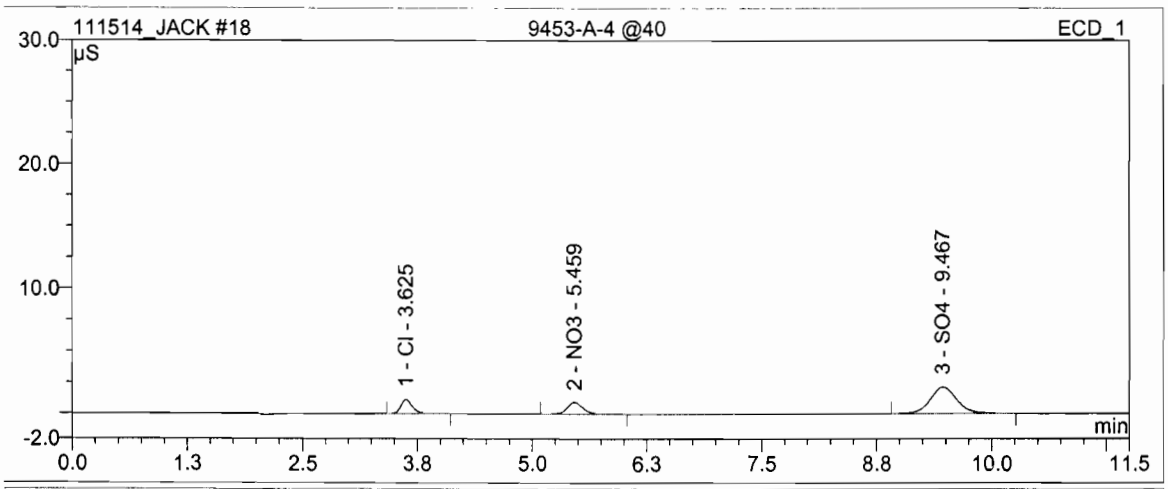


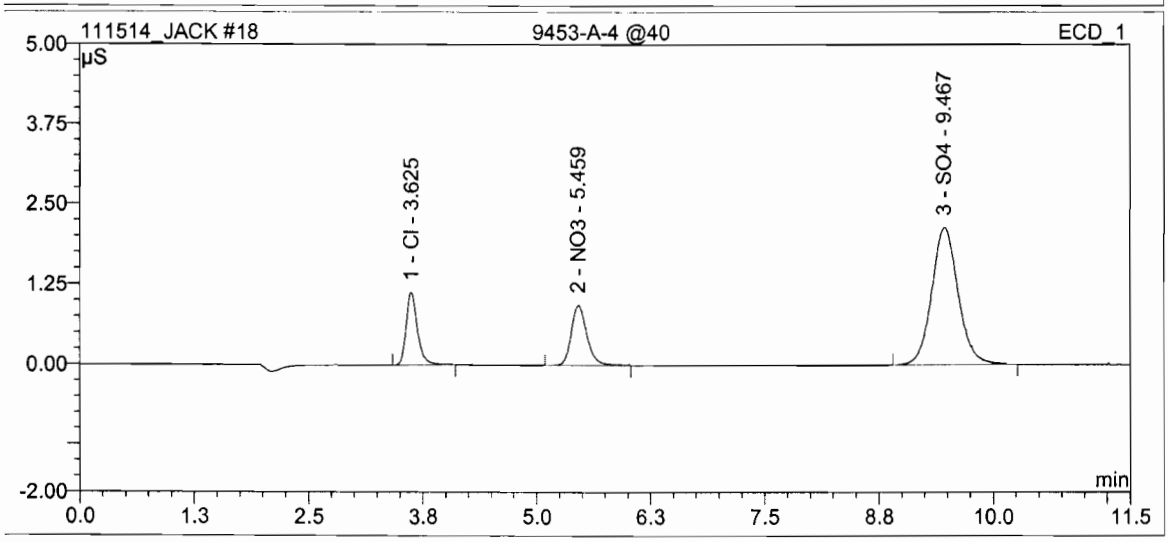


Integration Report - ECD_1

Sample Name:	**9453-A-4 @40**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 16:39**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	3.63	Cl	BMB	0.164	1.130	512.8270
2	5.46	NO3	BMB	0.190	0.938	266.5535
3	9.47	SO4	BMB	0.722	2.132	3089.3406
		TOTAL:		1.08	4.20	3868.72

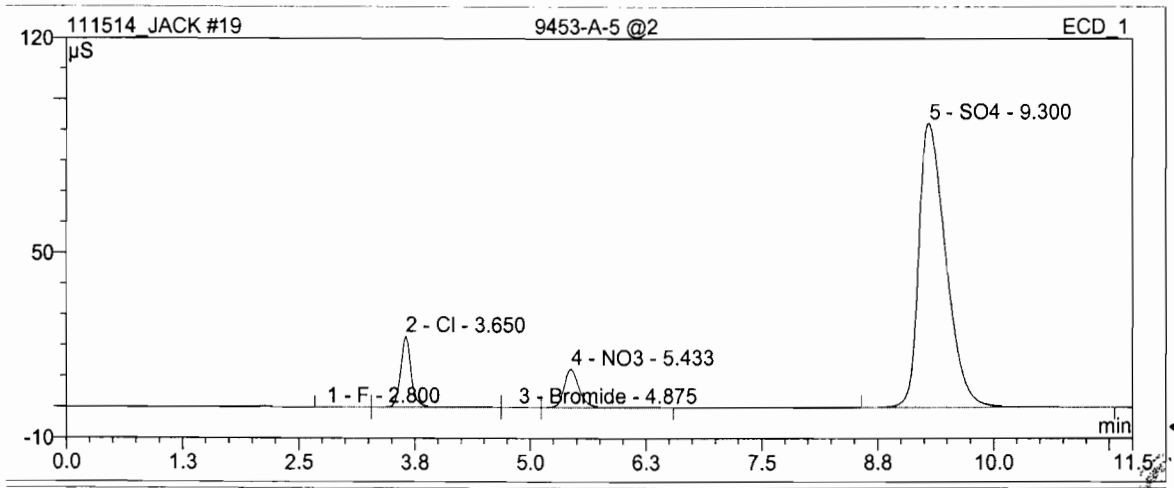


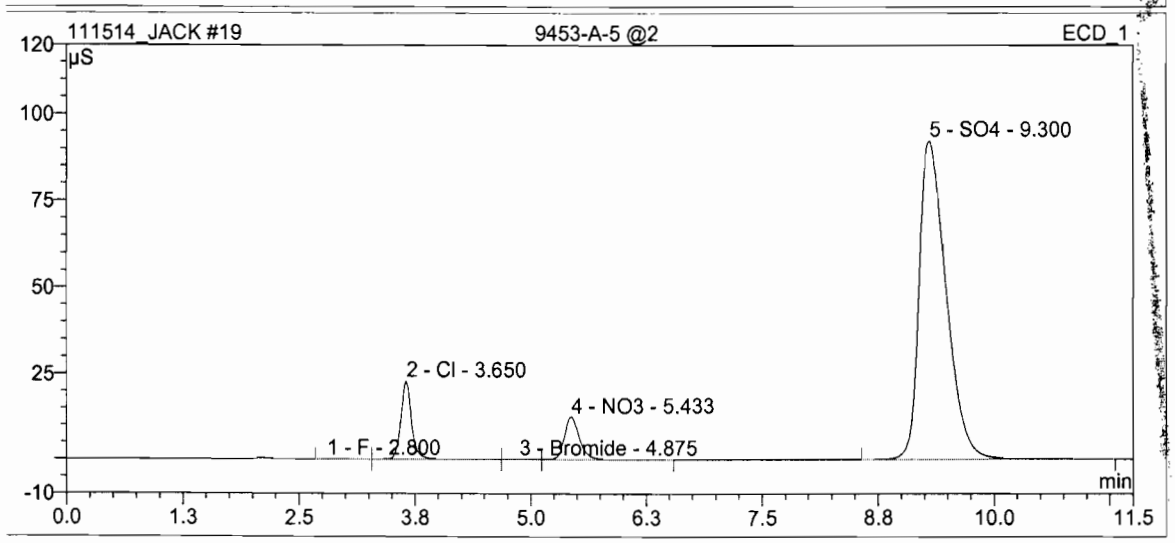


Integration Report - ECD_1

Sample Name:	**9453-A-5 @2**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 16:53**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BM	0.048	0.181	115.5015
2	3.65	Cl	M	3.123	22.977	9760.9590
3	4.88	Bromide	M	0.022	0.082	169.3469
4	5.43	NO3	MB	2.391	12.501	3358.2598
5	9.30	SO4	BMB	31.402	92.390	134314.1274
TOTAL:				36.99	128.13	147718.19





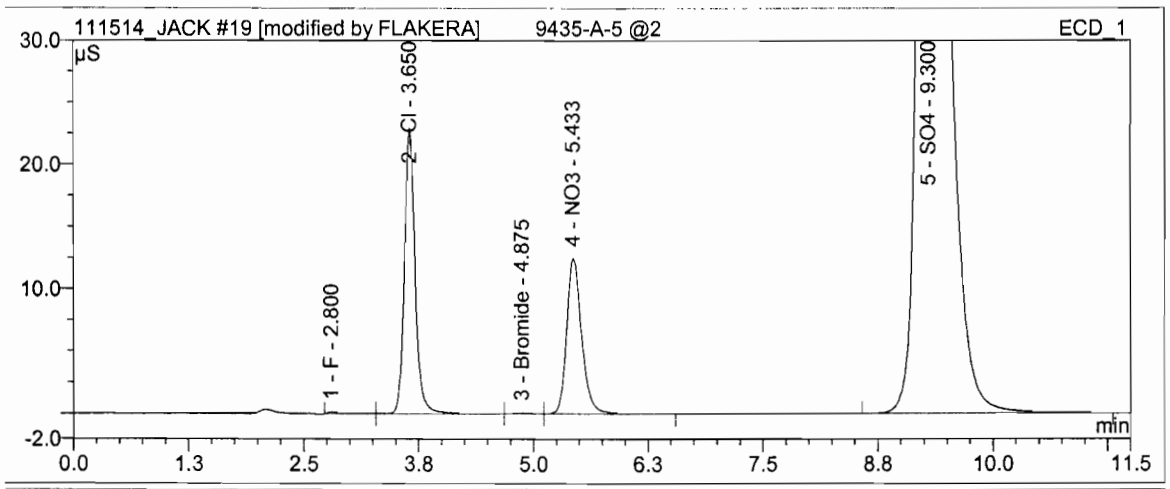
MT AF 11-21-14

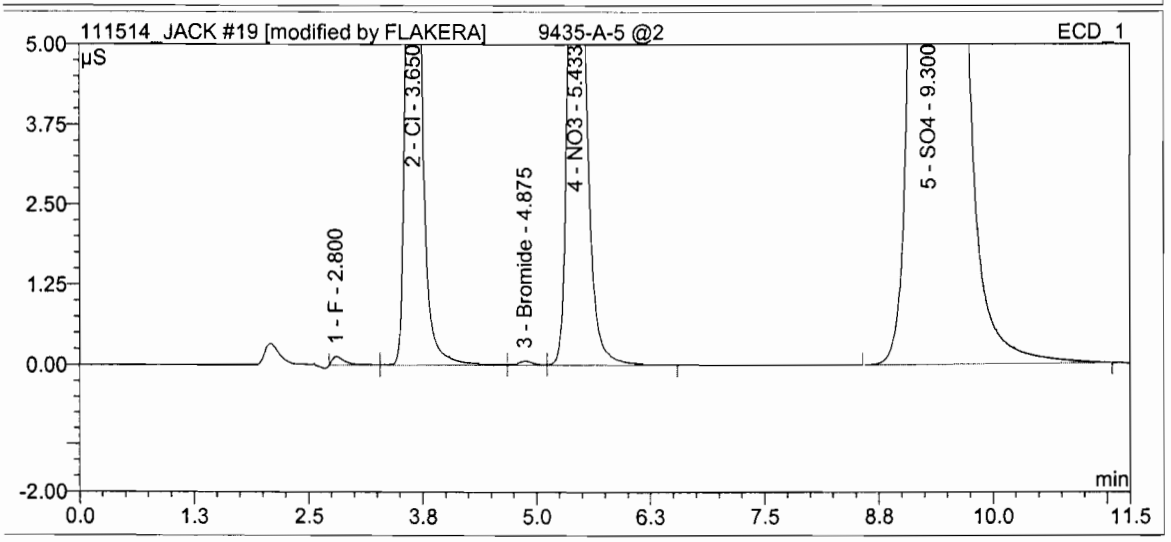
AF 11-21-14

Integration Report - ECD_1

Sample Name:	**9435-A-5 @2**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 16:53**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BM *	0.022	0.134	52.8669
2	3.65	Cl	M *	3.078	22.940	9617.7716
3	4.88	Bromide	M *	0.013	0.061	98.2045
4	5.43	NO3	MB*	2.378	12.487	3339.8625
5	9.30	SO4	BMB	31.402	92.390	134314.1274
		TOTAL:		36.89	128.01	147422.83

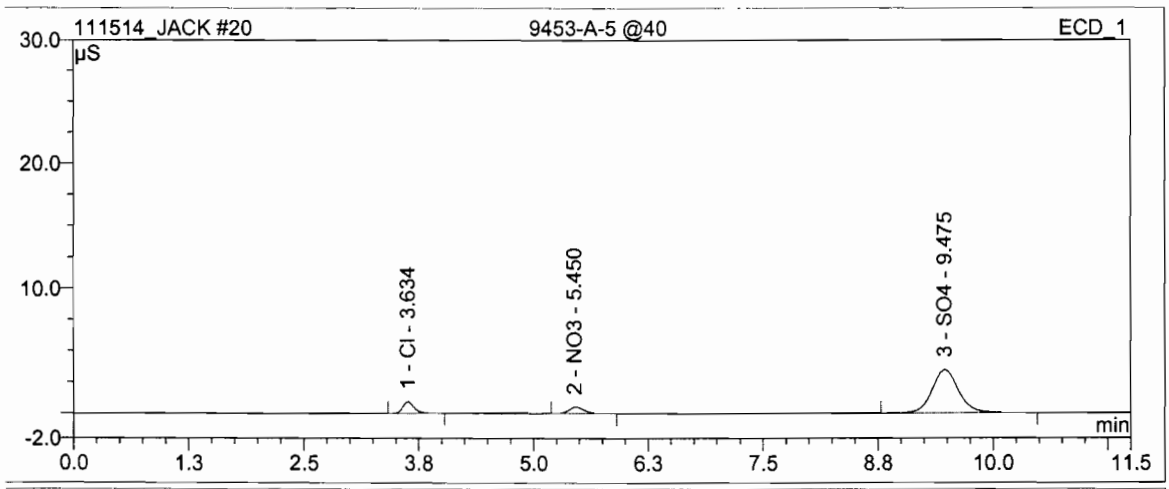


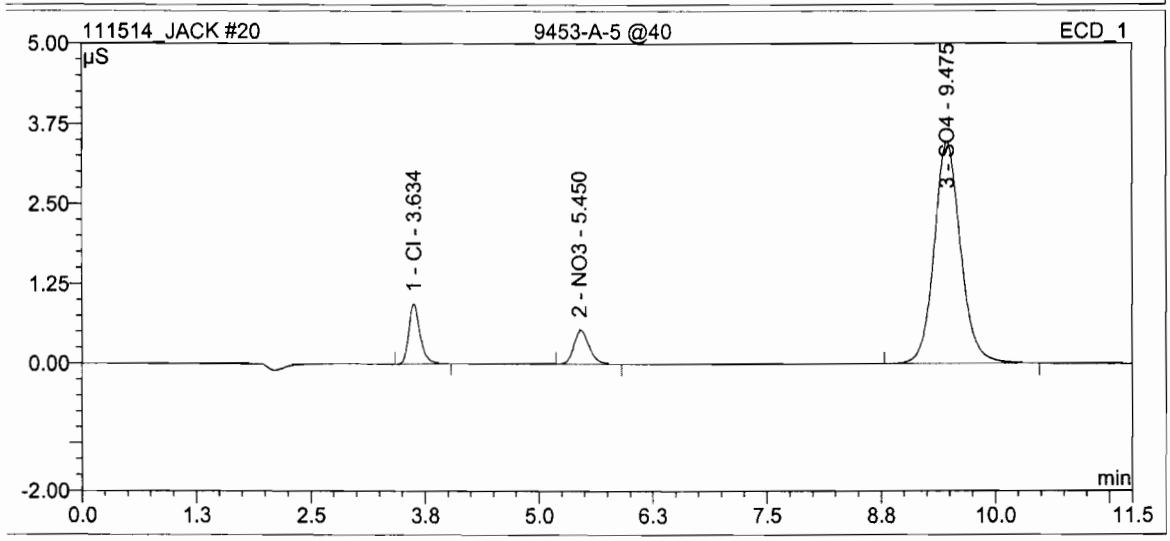


Integration Report - ECD_1

Sample Name:	**9453-A-5 @40**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 17:06**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	3.63	Cl	BMB	0.137	0.940	426.9703
2	5.45	NO3	BMB	0.104	0.545	145.9333
3	9.48	SO4	BMB	1.169	3.461	4998.5725
TOTAL:				1.41	4.95	5571.48

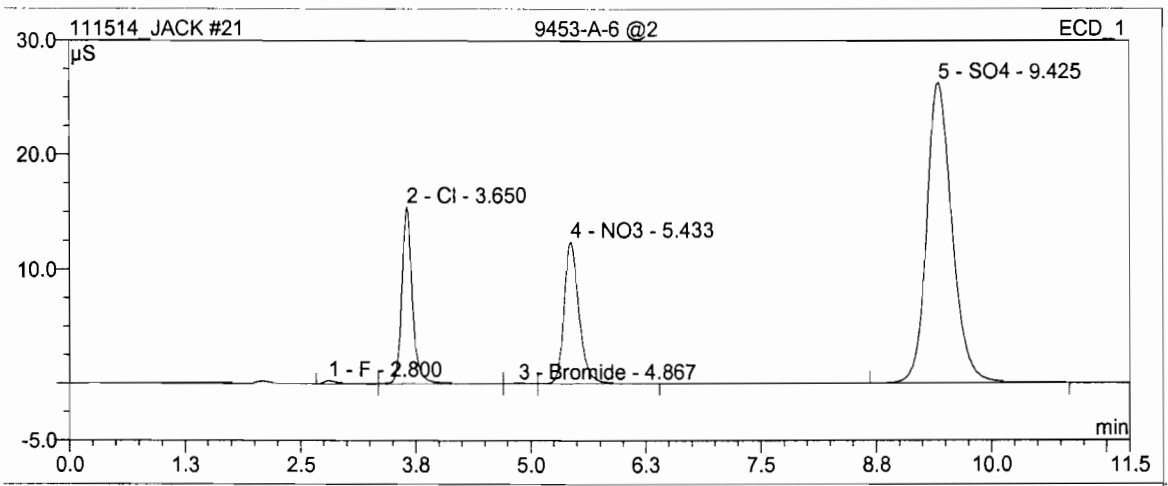


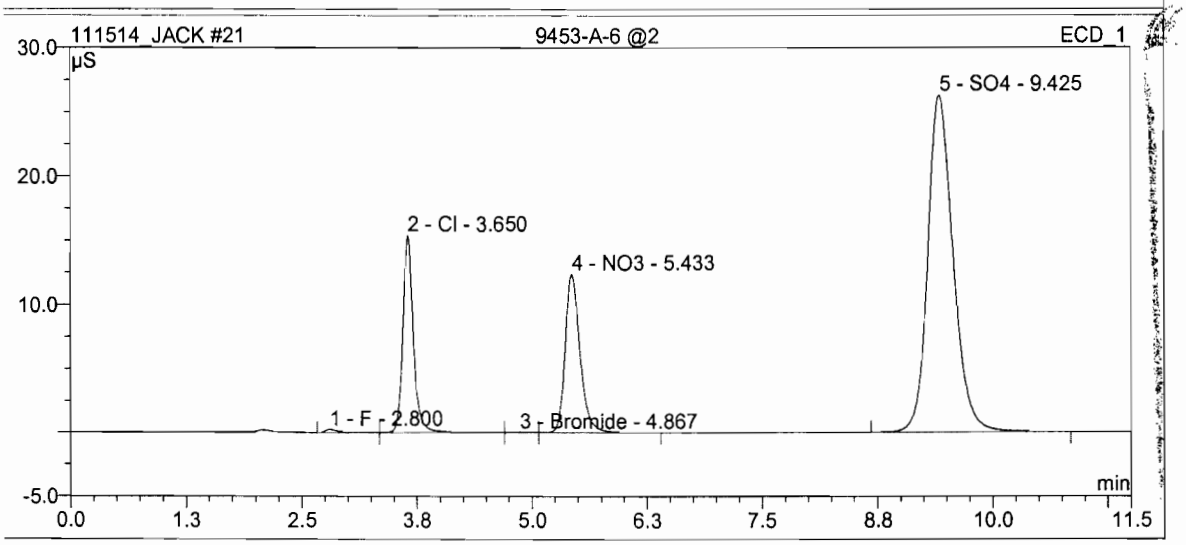


Integration Report - ECD_1

Sample Name:	**9453-A-6 @2**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 17:20**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BM	0.063	0.272	152.0954
2	3.65	Cl	M	2.087	15.447	6522.3926
3	4.87	Bromide	M	0.011	0.044	86.6627
4	5.43	NO3	MB	2.361	12.427	3316.4121
5	9.43	SO4	BMB	8.461	26.266	36188.4598
		TOTAL:		12.98	54.46	46266.02





MI AF 11-21-14

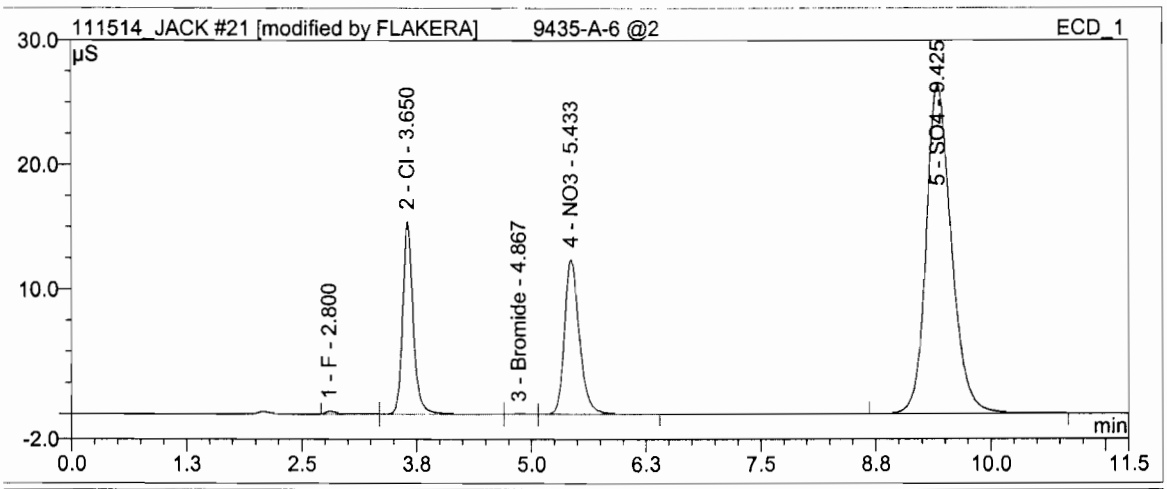
F, Cl, Br, NO3, SO4

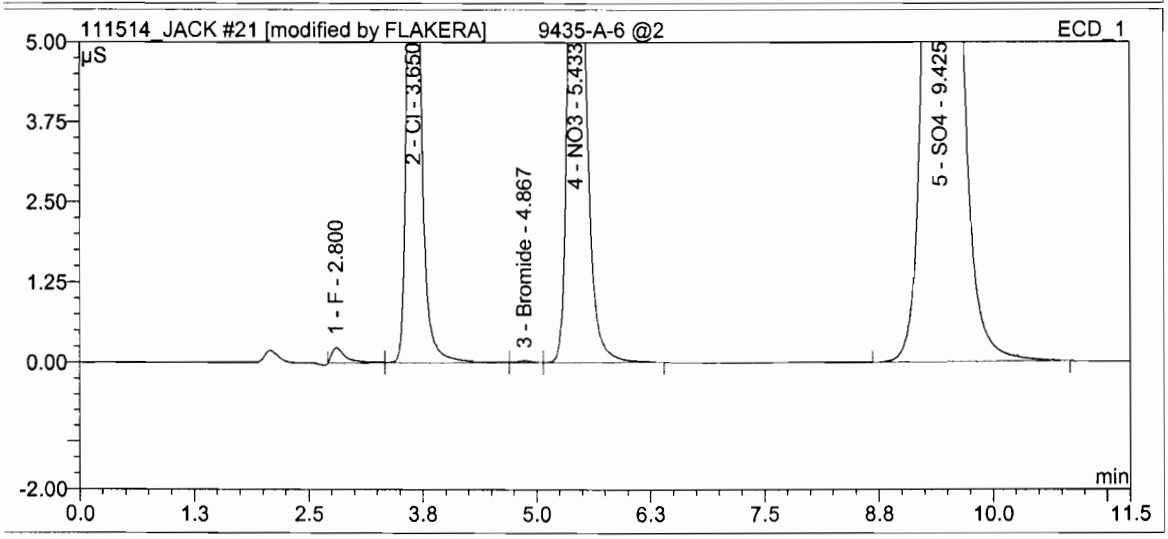
AF 11-21-14

Integration Report - ECD_1

Sample Name:	**9435-A-6 @2**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 17:20**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BM *	0.043	0.240	104.4602
2	3.65	Cl	M *	2.058	15.422	6430.9031
3	4.87	Bromide	M *	0.006	0.030	46.5671
4	5.43	NO3	MB*	2.353	12.419	3305.2417
5	9.43	SO4	BMB	8.461	26.266	36188.4598
		TOTAL:		12.92	54.38	46075.63

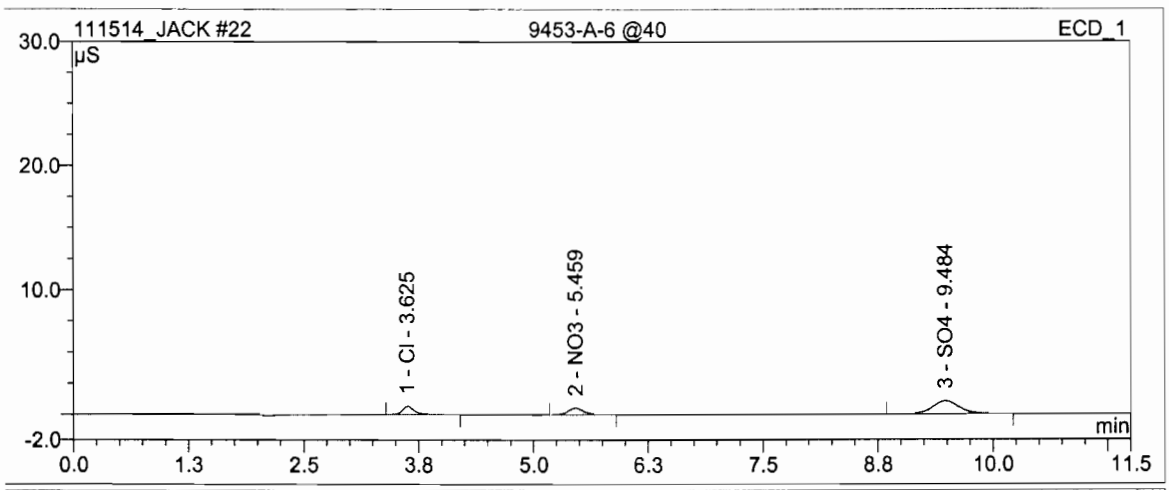


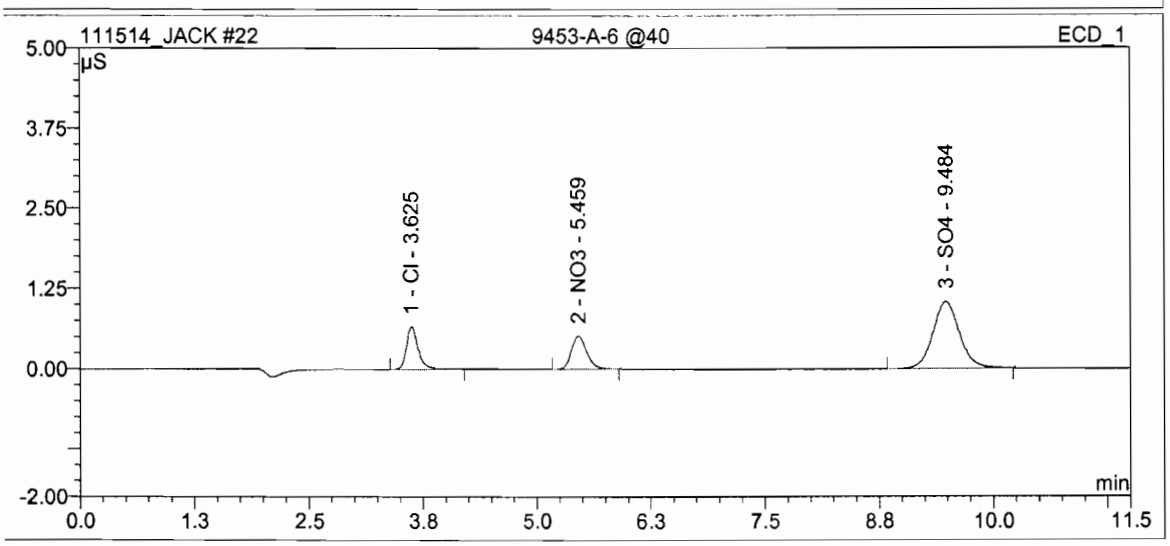


Integration Report - ECD_1

Sample Name:	**9453-A-6 @40**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 17:34**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	3.63	Cl	BMB	0.102	0.666	318.2340
2	5.46	NO3	BMB	0.102	0.519	143.5055
3	9.48	SO4	BMB	0.354	1.039	1512.0780
		TOTAL:		0.56	2.22	1973.82

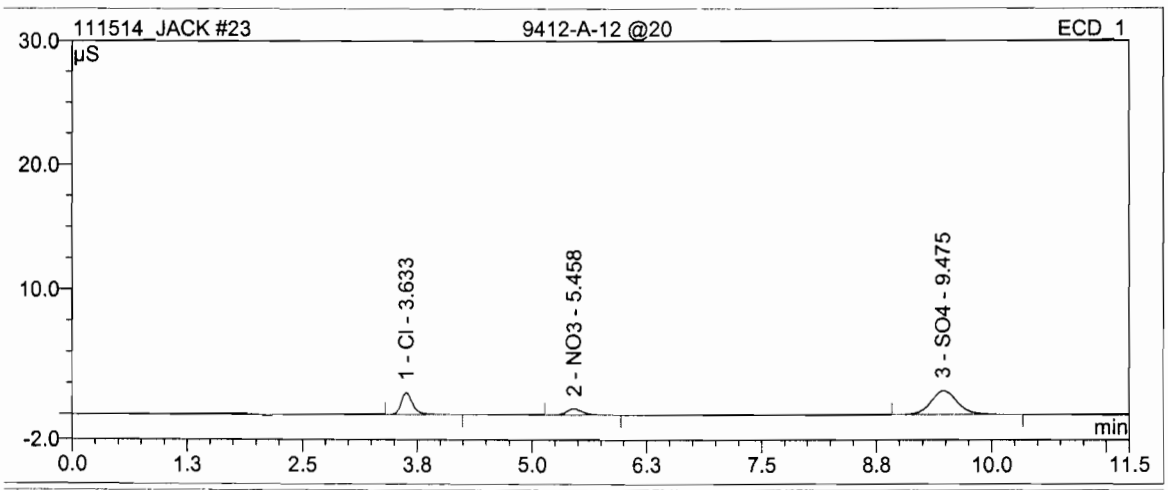


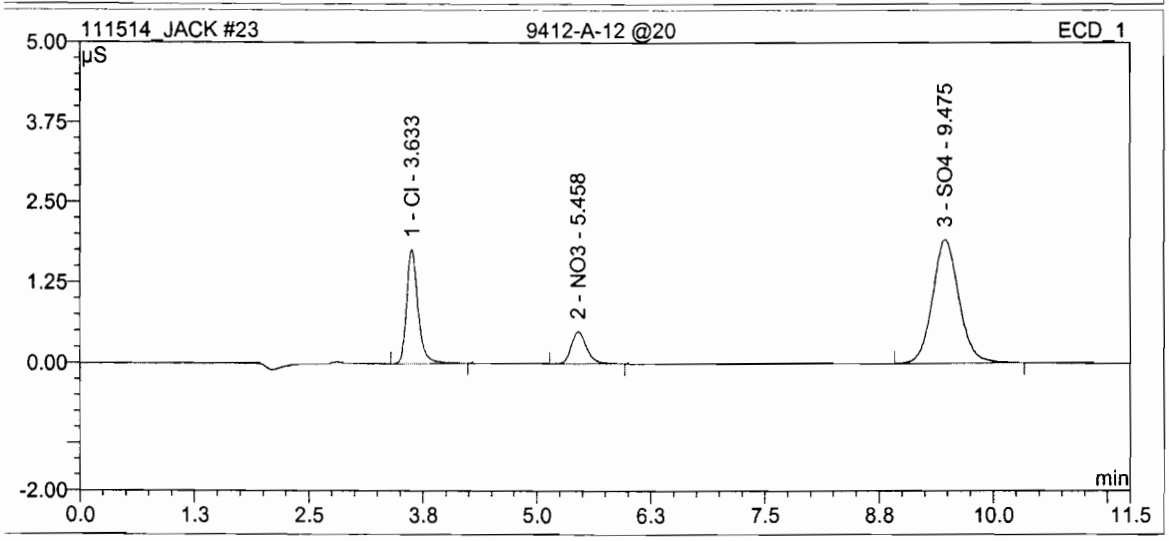


Integration Report - ECD_1

Sample Name:	**9412-A-12 @20**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 17:48**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	3.63	Cl	BMB	0.257	1.762	804.0850
2	5.46	NO3	BMB	0.099	0.498	138.7826
3	9.48	SO4	BMB	0.648	1.912	2769.8654
		TOTAL:		1.00	4.17	3712.73

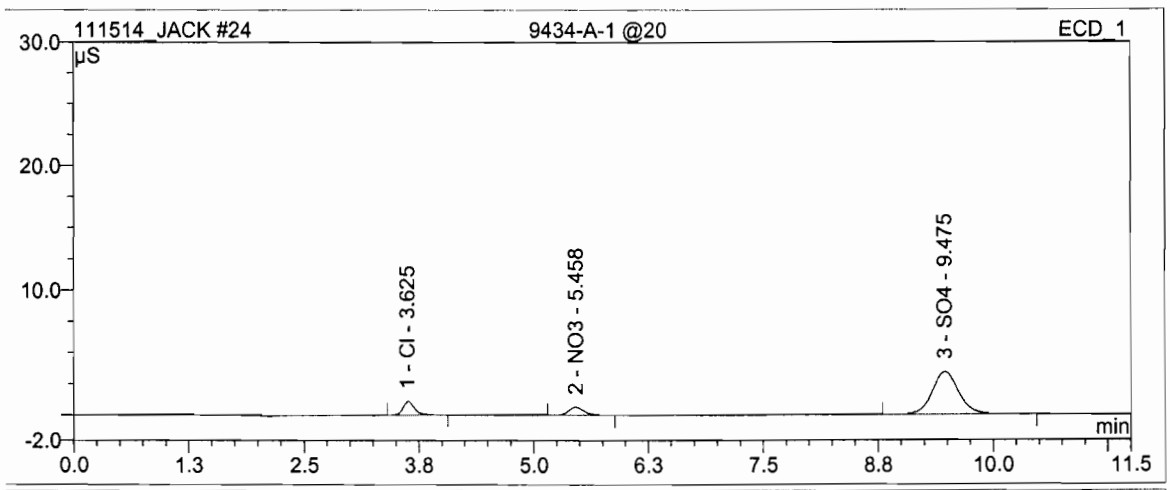


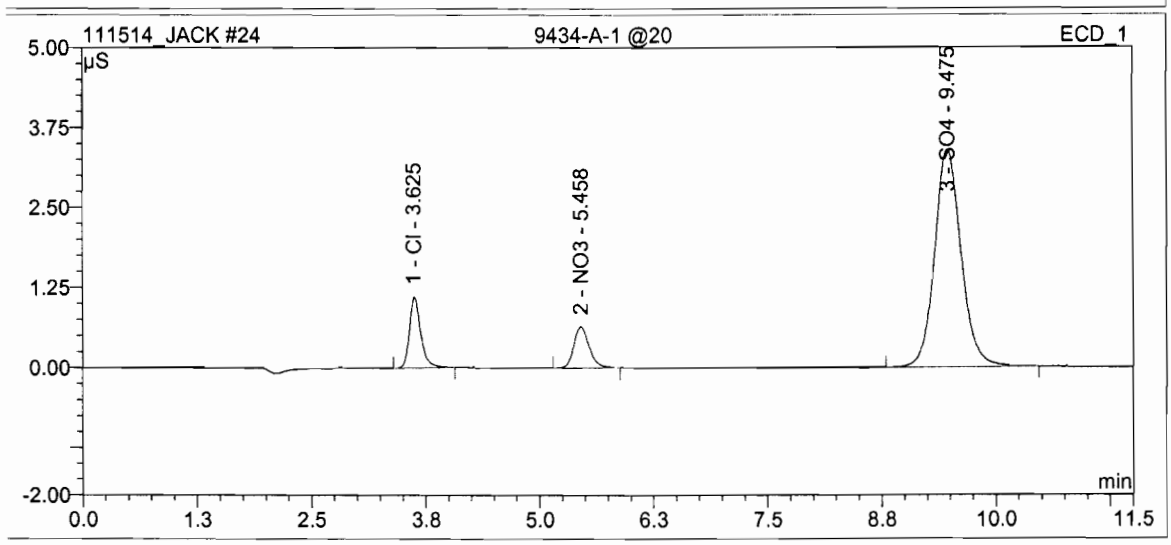


Integration Report - ECD_1

Sample Name:	**9434-A-1 @20**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 18:02**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	3.63	Cl	BMB	0.160	1.104	498.6989
2	5.46	NO3	BMB	0.126	0.642	177.4028
3	9.48	SO4	BMB	1.148	3.401	4909.9889
		TOTAL:		1.43	5.15	5586.09

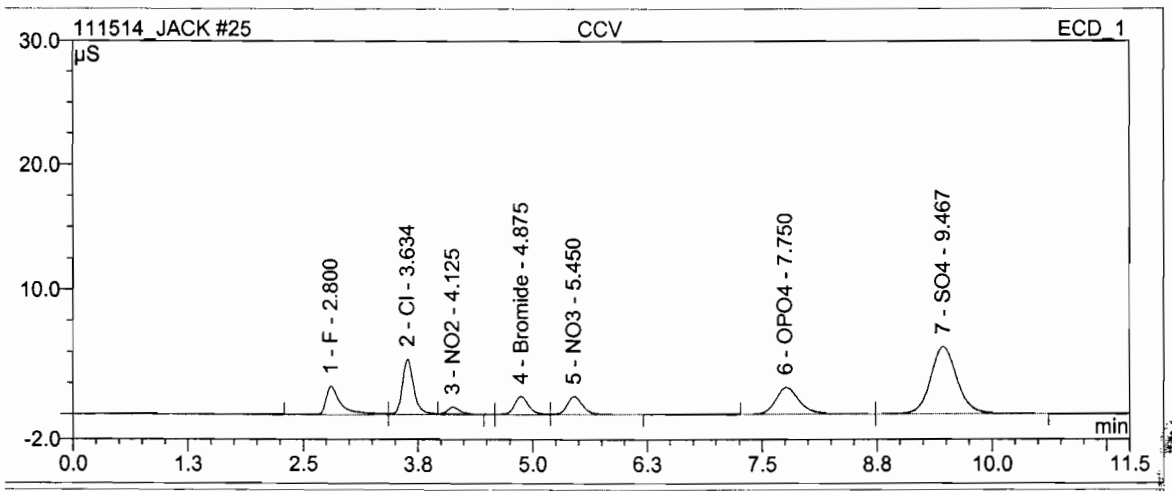


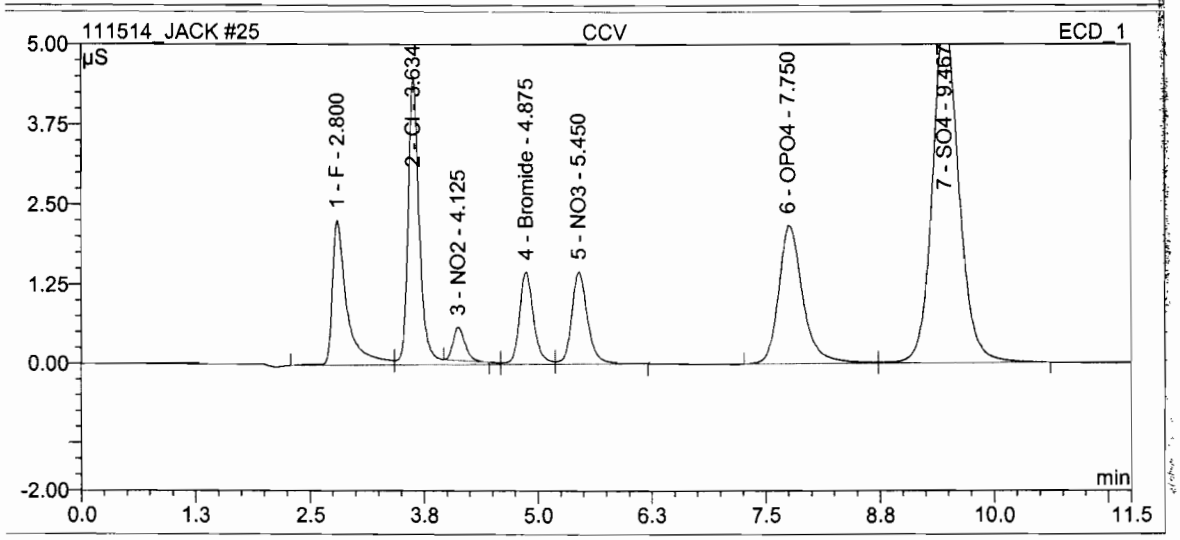


Integration Report - ECD_1

Sample Name:	**CCV**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 18:16**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BM	0.431	2.274	1037.8277
2	3.63	Cl	M	0.680	4.465	2125.9869
3	4.13	NO2	Rd	0.079	0.520	126.2923
4	4.88	Bromide	M	0.265	1.459	2067.1091
5	5.45	NO3	MB	0.298	1.458	418.8296
6	7.75	OPO4	BM	0.673	2.169	7801.5914
7	9.47	SO4	MB	1.814	5.399	7759.0667
		TOTAL:		4.24	17.74	21336.70





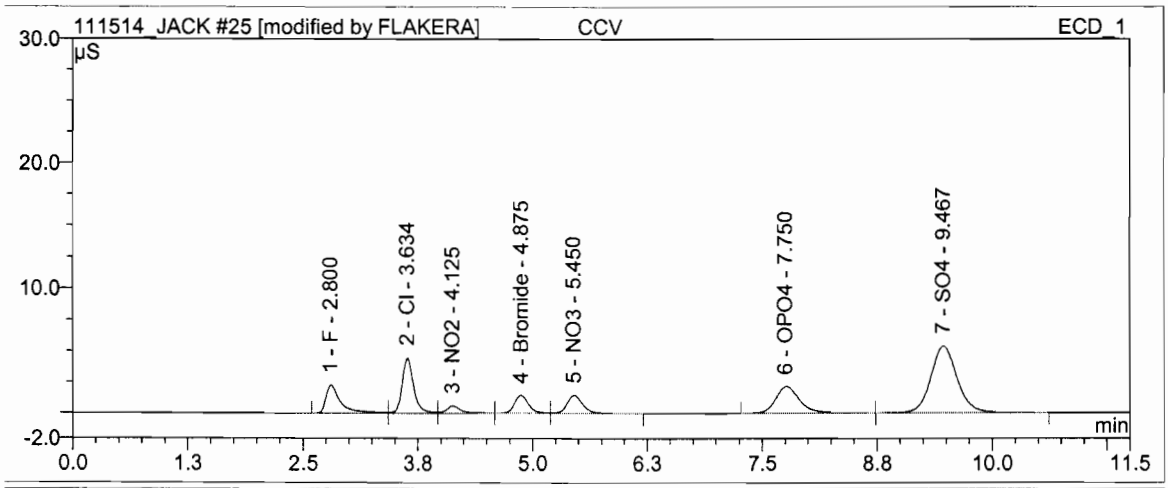
MI AF 11-21-14

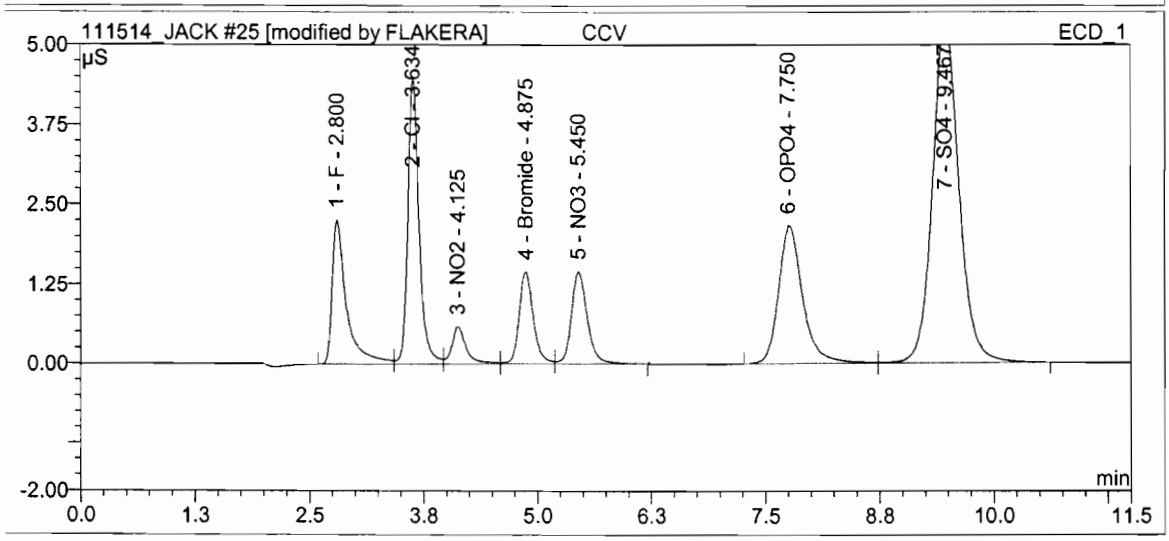
all but OPO4 SO4

Integration Report - ECD_1

Sample Name:	**CCV**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 18:16**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BM *	0.414	2.257	997.3468
2	3.63	Cl	M *	0.639	4.452	1998.0624
3	4.13	NO2	M *	0.107	0.580	171.3975
4	4.88	Bromide	M *	0.261	1.452	2036.5964
5	5.45	NO3	MB*	0.296	1.454	415.2367
6	7.75	OPO4	BM	0.673	2.169	7801.5914
7	9.47	SO4	MB	1.814	5.399	7759.0667
		TOTAL:		4.20	17.76	21179.30

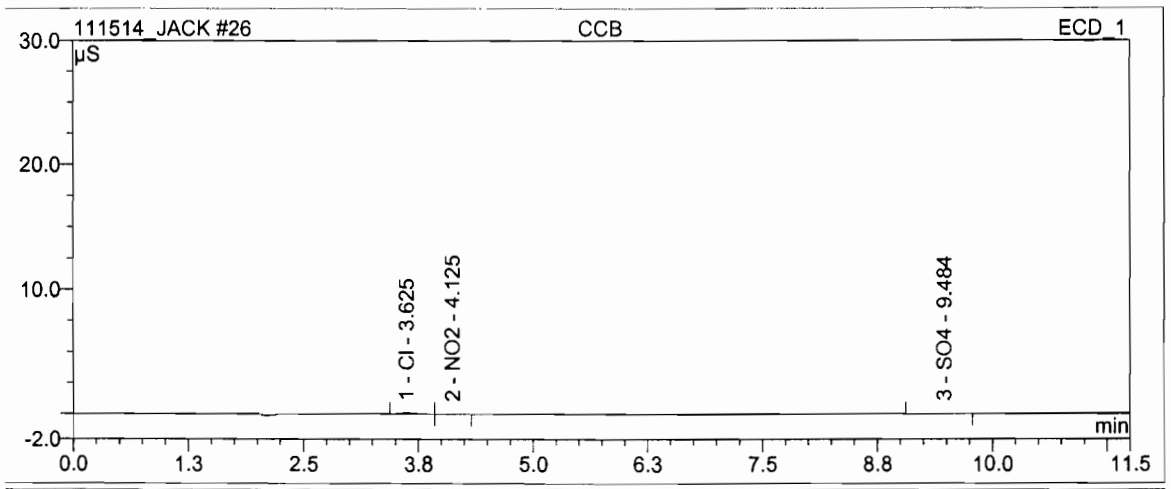


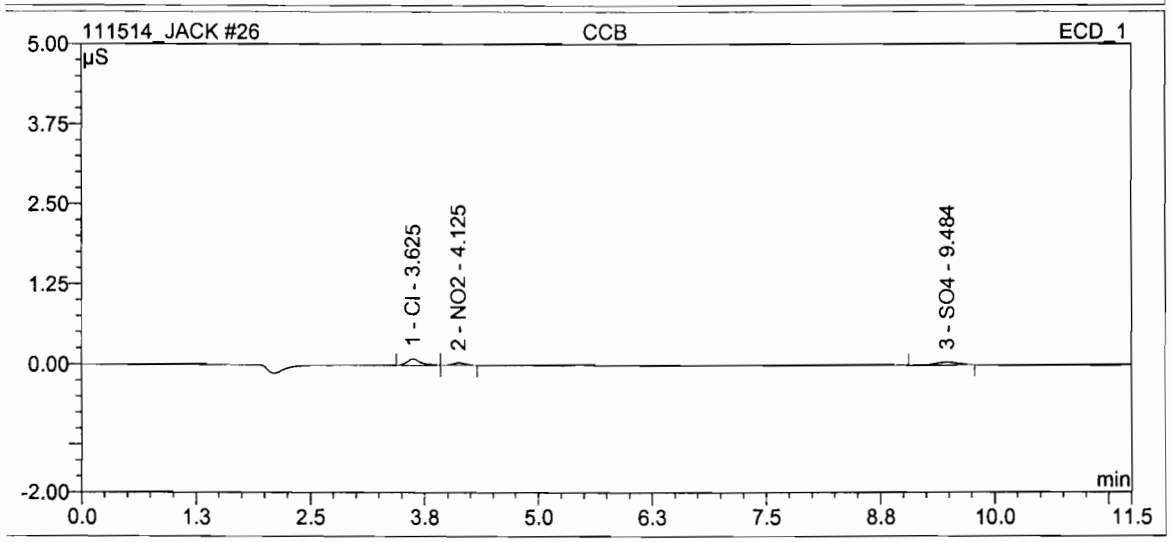


Integration Report - ECD_1

Sample Name:	**CCB**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 18:30**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	3.63	Cl	BM	0.018	0.101	56.9578
2	4.13	NO2	MB	0.007	0.038	10.5775
3	9.48	SO4	BMB	0.013	0.046	57.6510
		TOTAL:		0.04	0.19	125.19

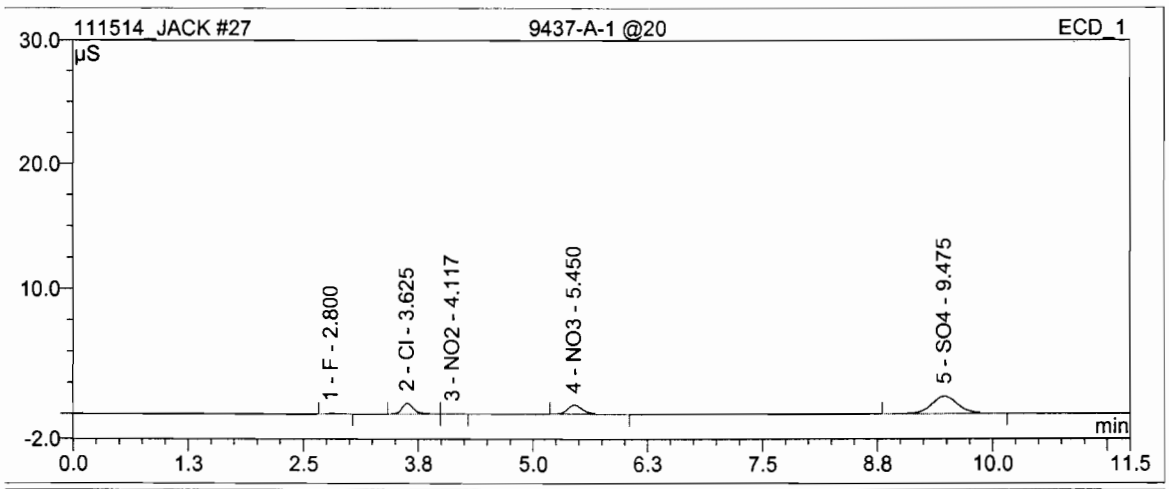


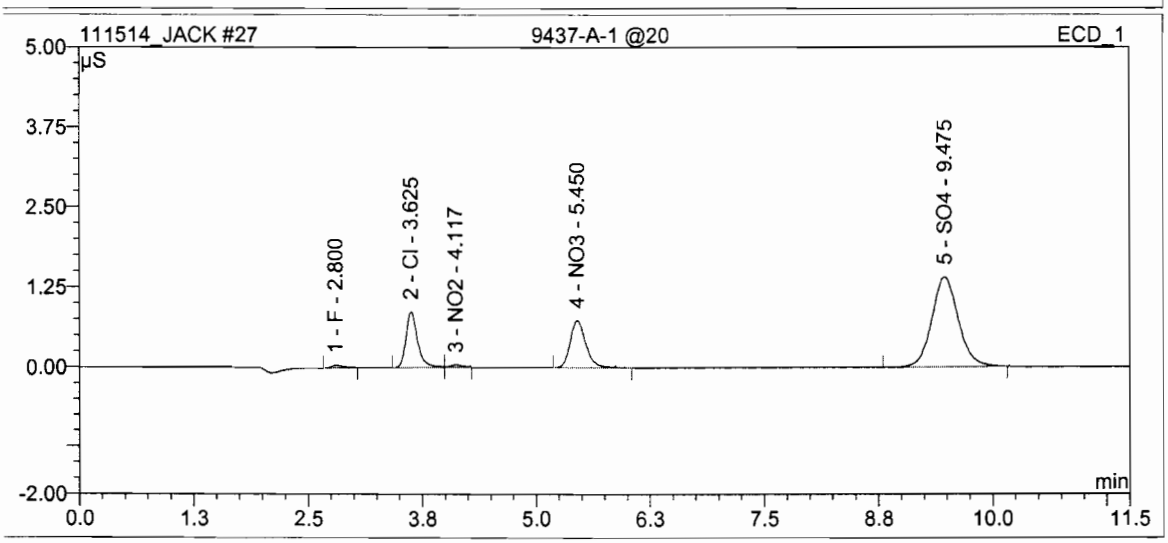


Integration Report - ECD_1

Sample Name:	**9437-A-1 @20**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 18:44**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BMB	0.006	0.040	14.6103
2	3.63	Cl	BM	0.131	0.872	408.4846
3	4.12	NO2	MB	0.007	0.039	11.2822
4	5.45	NO3	BMB	0.148	0.738	208.3063
5	9.48	SO4	BMB	0.475	1.402	2033.0594
		TOTAL:		0.77	3.09	2675.74

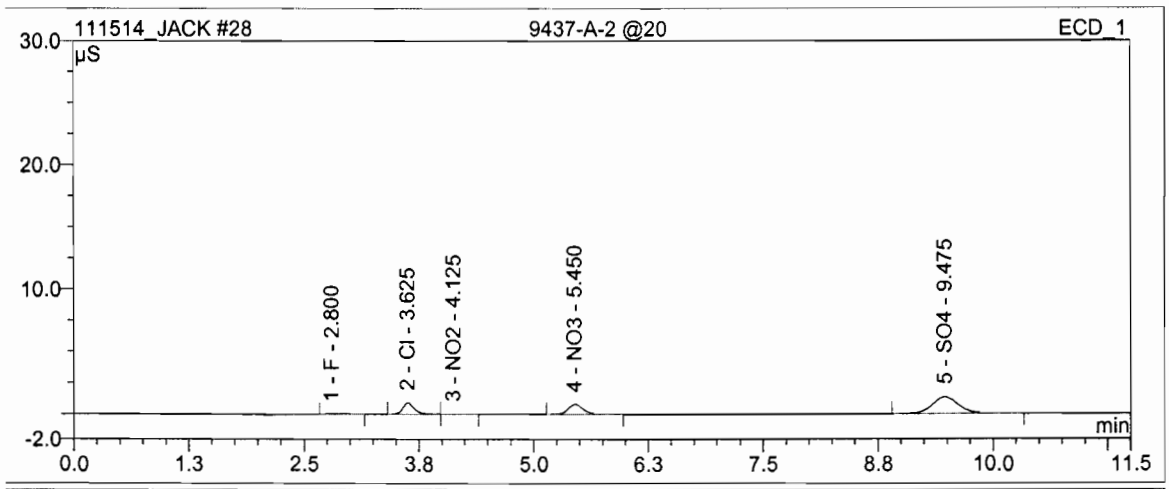


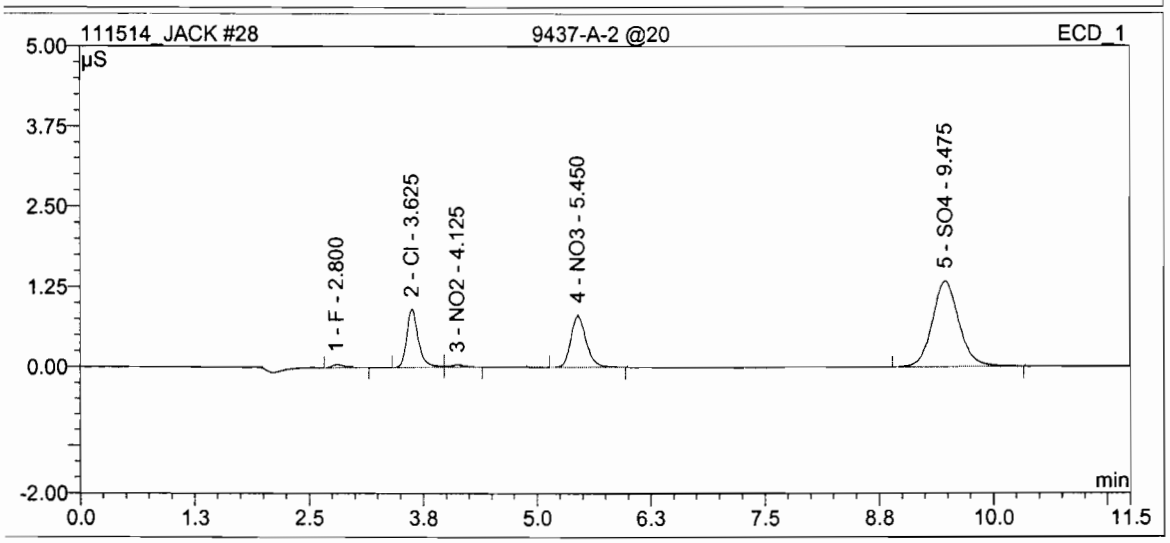


Integration Report - ECD_1

Sample Name:	**9437-A-2 @20**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 18:58**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BMB	0.009	0.051	21.0567
2	3.63	Cl	BM	0.135	0.907	422.8186
3	4.13	NO2	MB	0.007	0.037	10.9585
4	5.45	NO3	BMB	0.159	0.823	223.5478
5	9.48	SO4	BMB	0.456	1.335	1949.2450
TOTAL:				0.77	3.15	2627.63

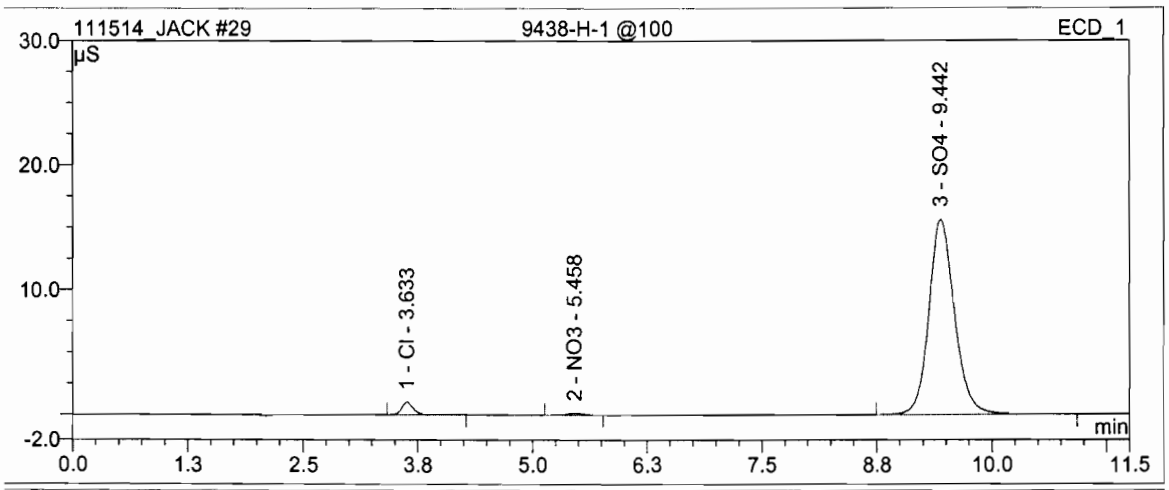


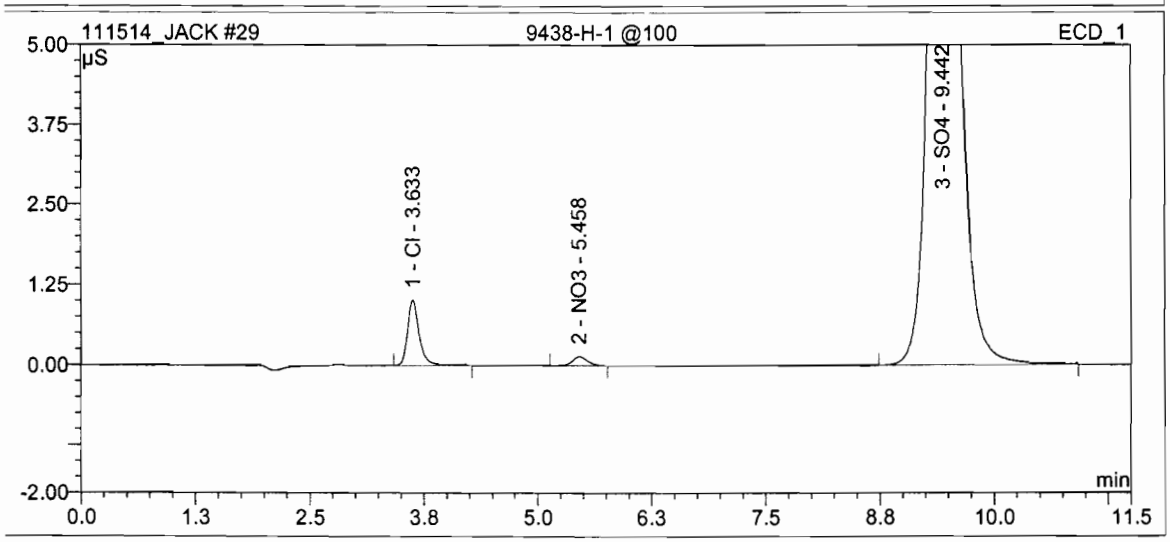


Integration Report - ECD_1

Sample Name:	**9438-H-1 @100**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 19:12**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	3.63	Cl	BMB	0.153	1.011	477.7021
2	5.46	NO3	BMB	0.028	0.144	39.7785
3	9.44	SO4	BMB	5.096	15.606	21797.0428
		TOTAL:		5.28	16.76	22314.52

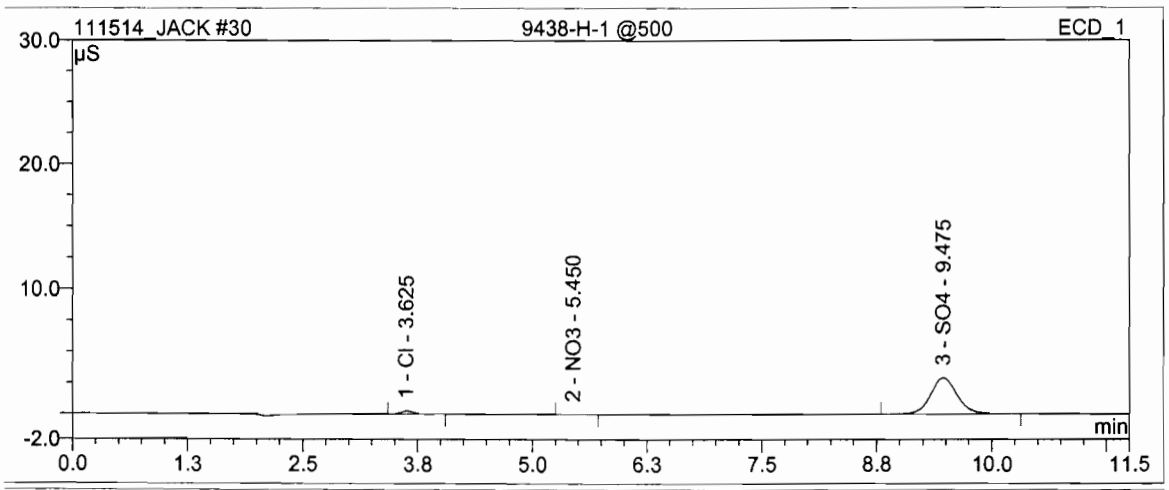


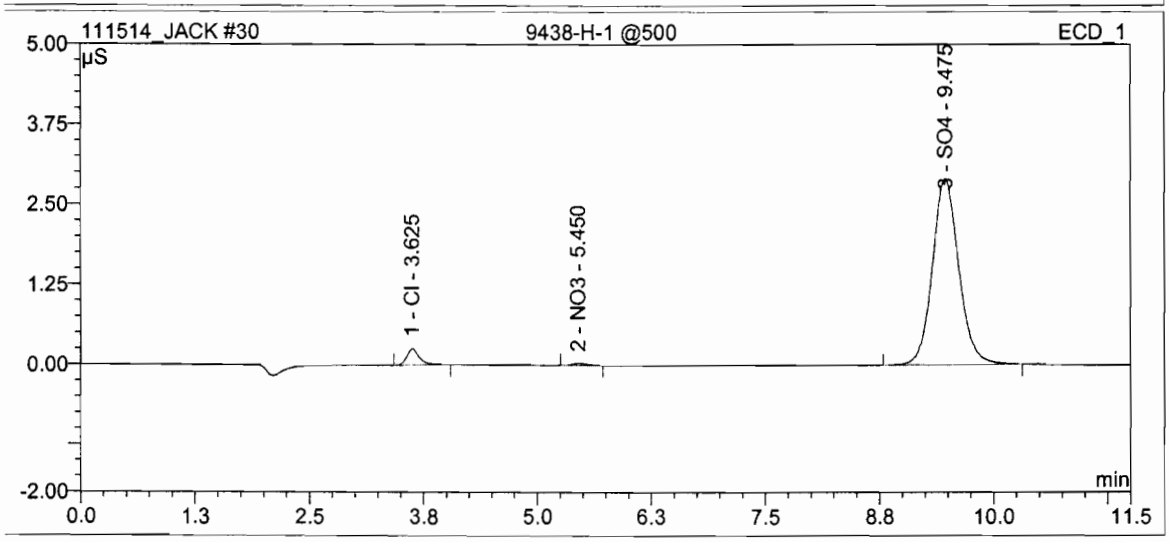


Integration Report - ECD_1

Sample Name:	**9438-H-1 @500**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 19:26**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	3.63	Cl	BMB	0.041	0.255	128.8369
2	5.45	NO3	BMB	0.006	0.033	8.7218
3	9.48	SO4	BMB	0.975	2.896	4169.2013
TOTAL:				1.02	3.18	4306.76

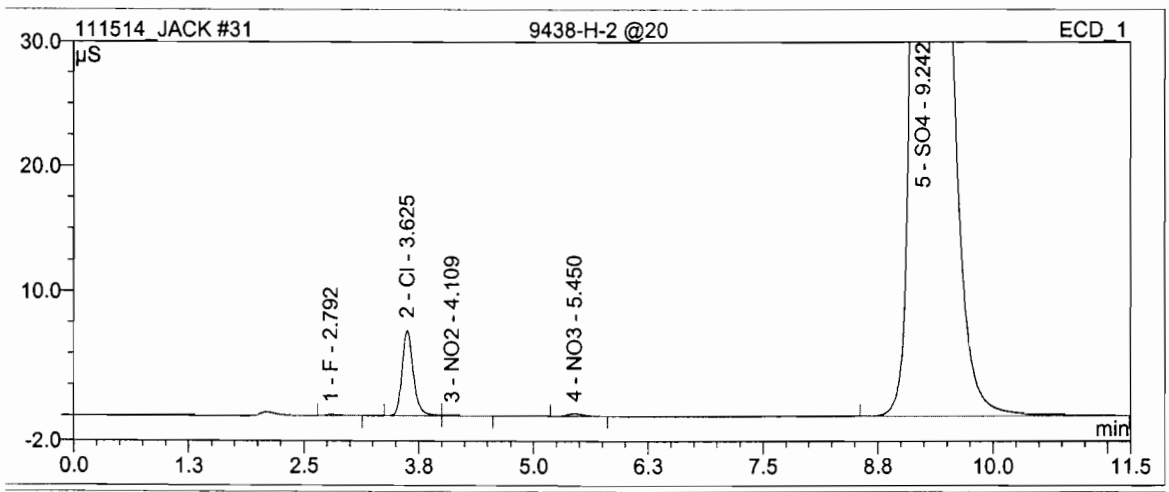


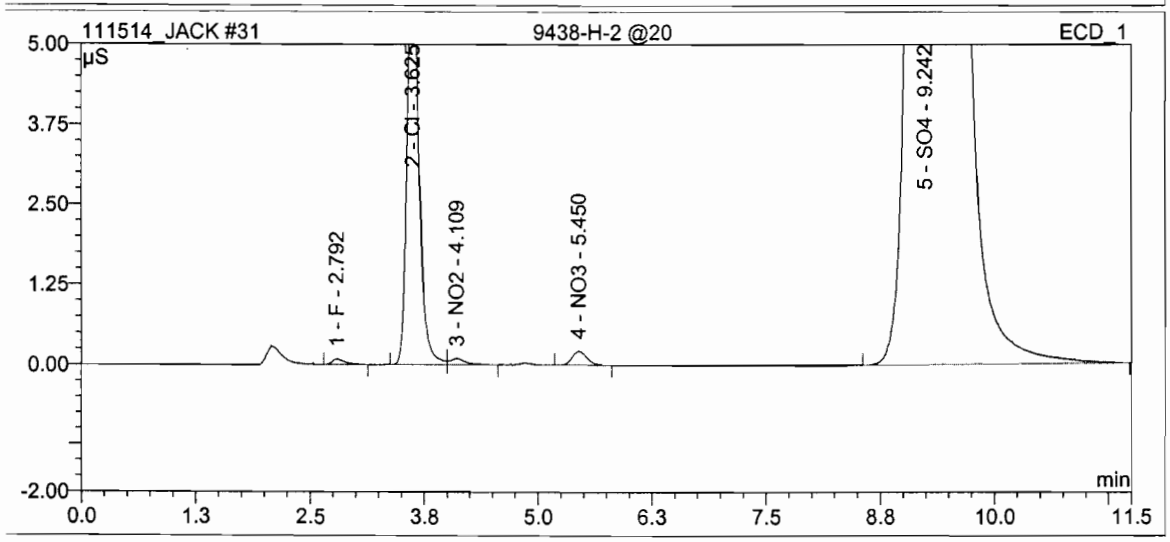


Integration Report - ECD_1

Sample Name:	**9438-H-2 @20**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 19:40**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.79	F	BMB	0.014	0.087	34.4766
2	3.63	Cl	BM	0.979	6.879	3059.0929
3	4.11	NO2	MB	0.019	0.096	30.3592
4	5.45	NO3	BMB	0.042	0.217	59.2279
5	9.24	SO4	BMB	43.980	123.177	188111.7486
		TOTAL:		45.03	130.46	191294.91

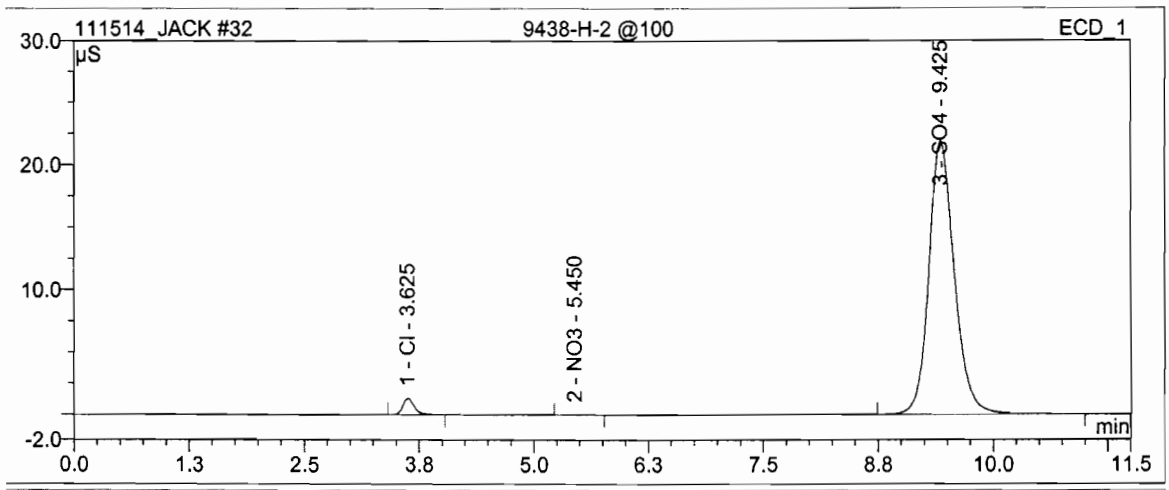


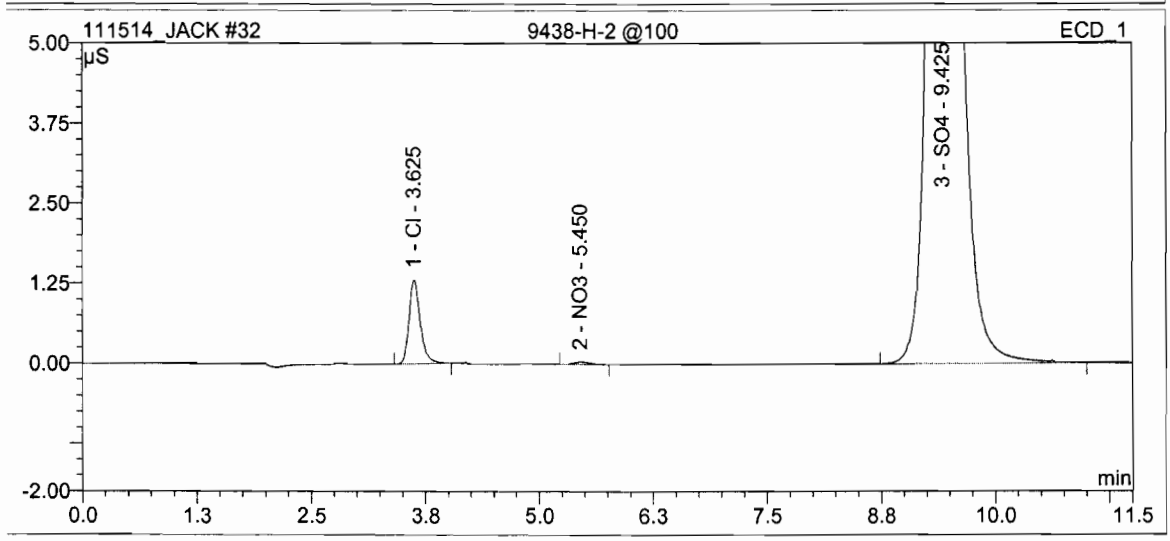


Integration Report - ECD_1

Sample Name:	**9438-H-2 @100**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 19:53**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	3.63	Cl	BMB	0.188	1.302	587.6481
2	5.45	NO3	BMB	0.008	0.041	11.8862
3	9.43	SO4	BMB	7.082	21.870	30291.7671
		TOTAL:		7.28	23.21	30891.30

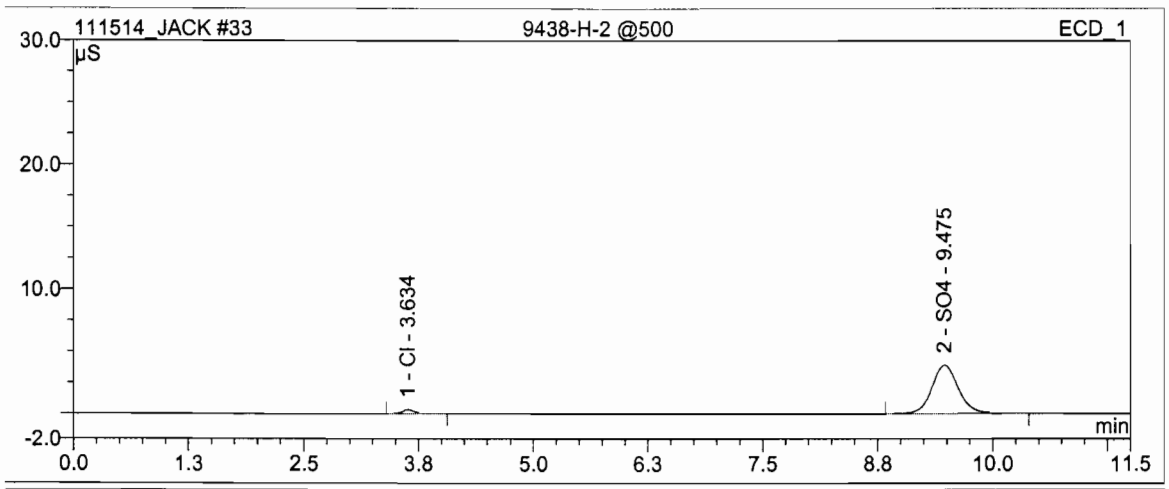


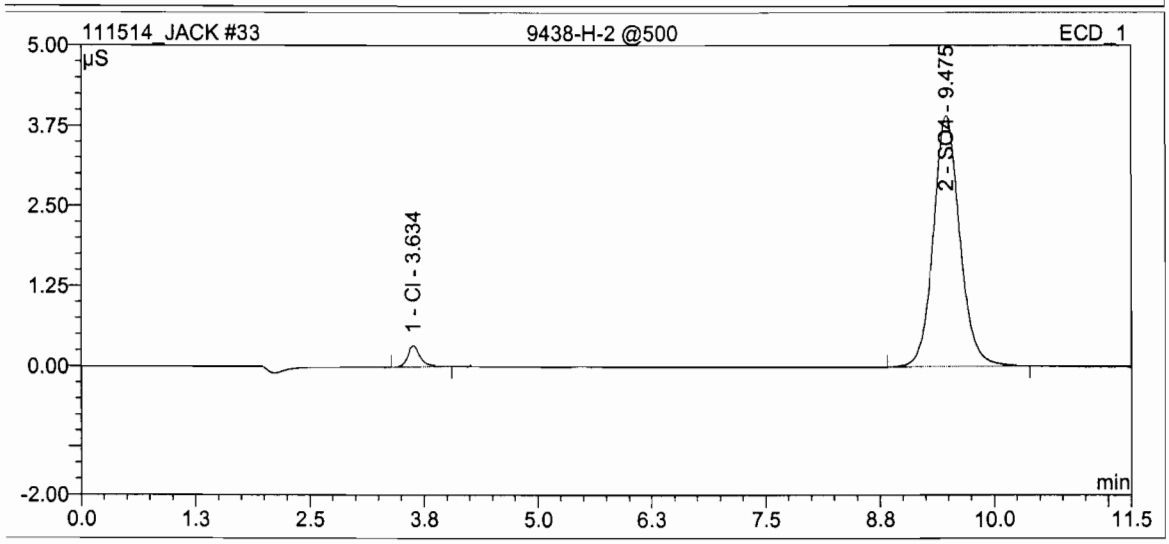


Integration Report - ECD_1

Sample Name:	**9438-H-2 @500**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 20:07**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	3.63	Cl	BMB	0.053	0.330	166.1464
2	9.48	SO4	BMB	1.313	3.906	5614.2547
TOTAL:				1.37	4.24	5780.40

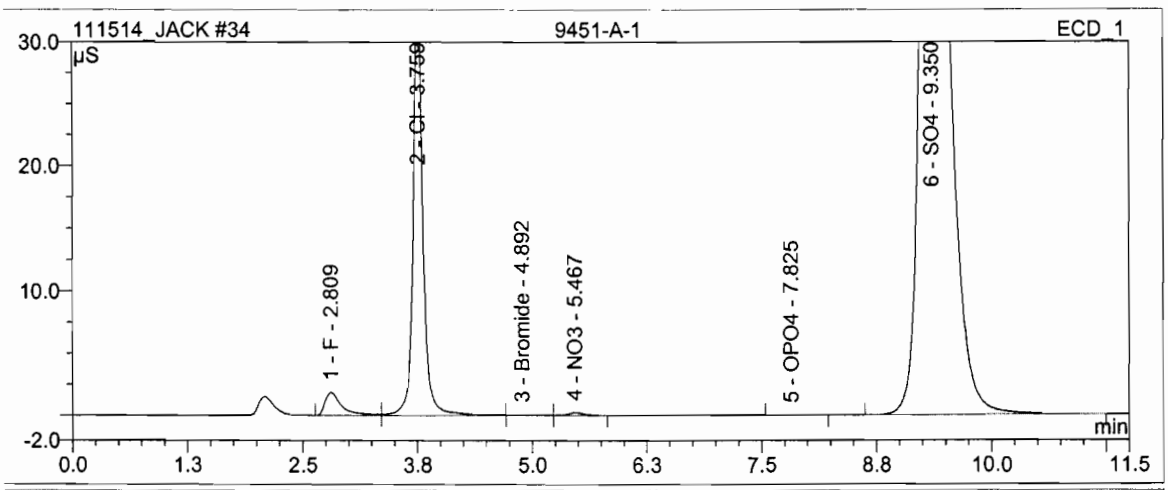


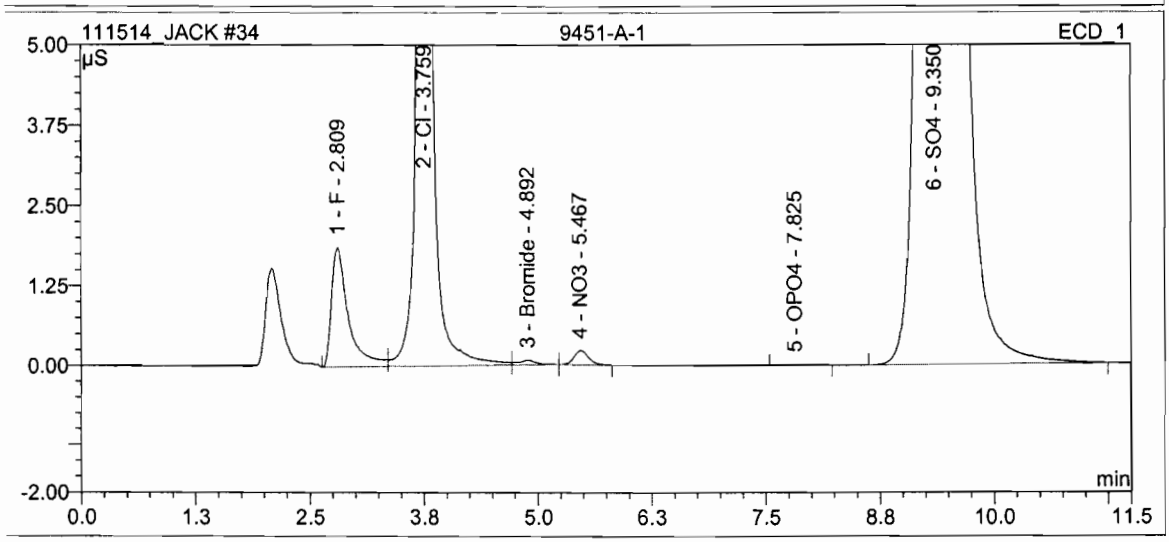


Integration Report - ECD_1

Sample Name:	**9451-A-1**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 20:21**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.81	F	BM	0.403	1.869	970.9767
2	3.76	Cl	M	4.229	35.804	13214.6767
3	4.89	Bromide	MB	0.016	0.074	127.9804
4	5.47	NO3	bMB	0.042	0.227	59.3507
5	7.83	OPO4	BMB	0.006	0.018	71.1623
6	9.35	SO4	BMB	24.028	72.866	102771.5846
		TOTAL:		28.72	110.86	117215.73

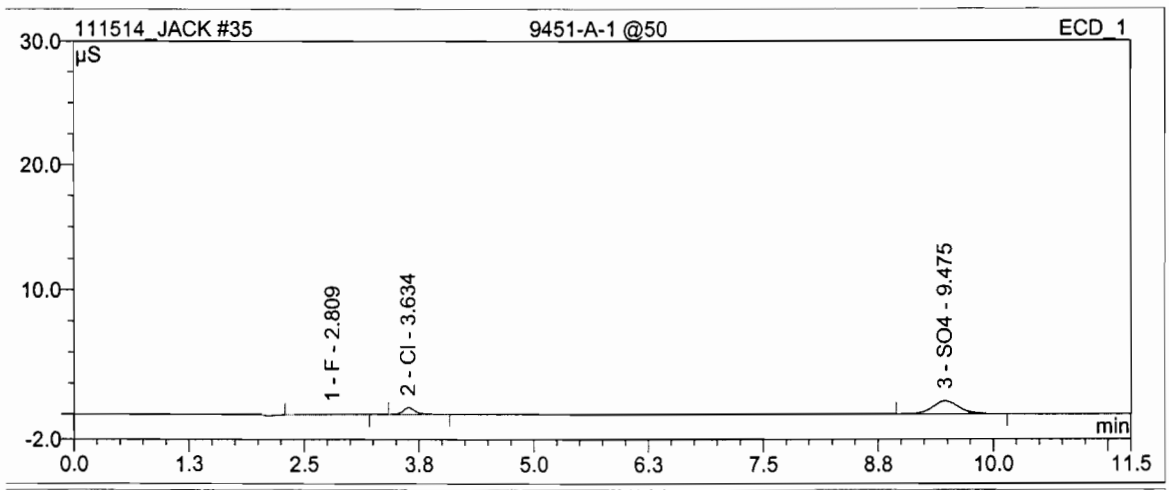


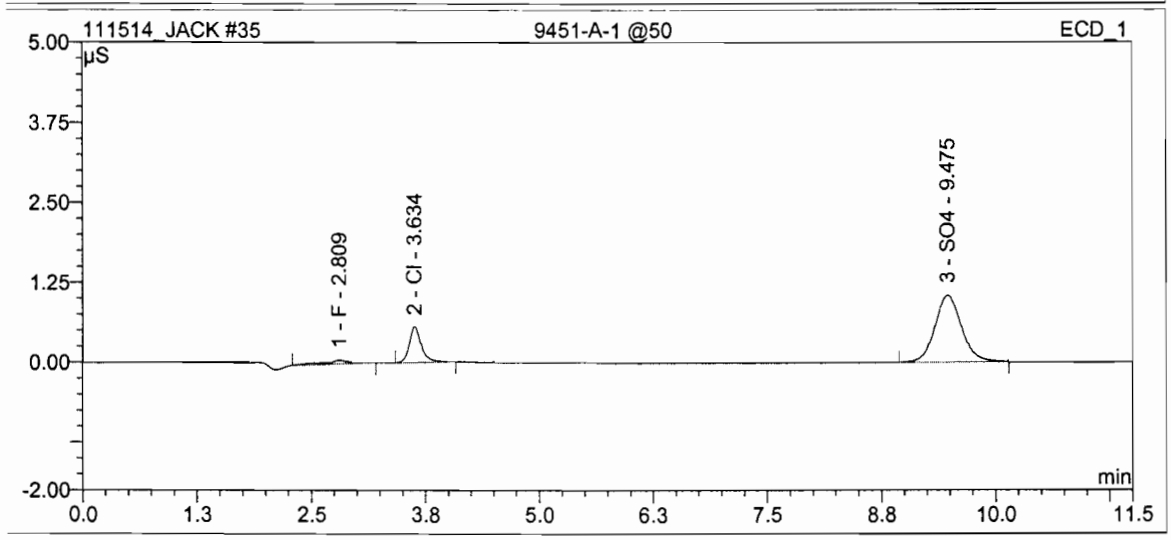


Integration Report - ECD_1

Sample Name:	**9451-A-1 @50**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 20:35**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.81	F	BMB	0.019	0.056	45.5755
2	3.63	Cl	BMB	0.086	0.552	268.9011
3	9.48	SO4	BMB	0.354	1.041	1512.2133
		TOTAL:		0.46	1.65	1826.69

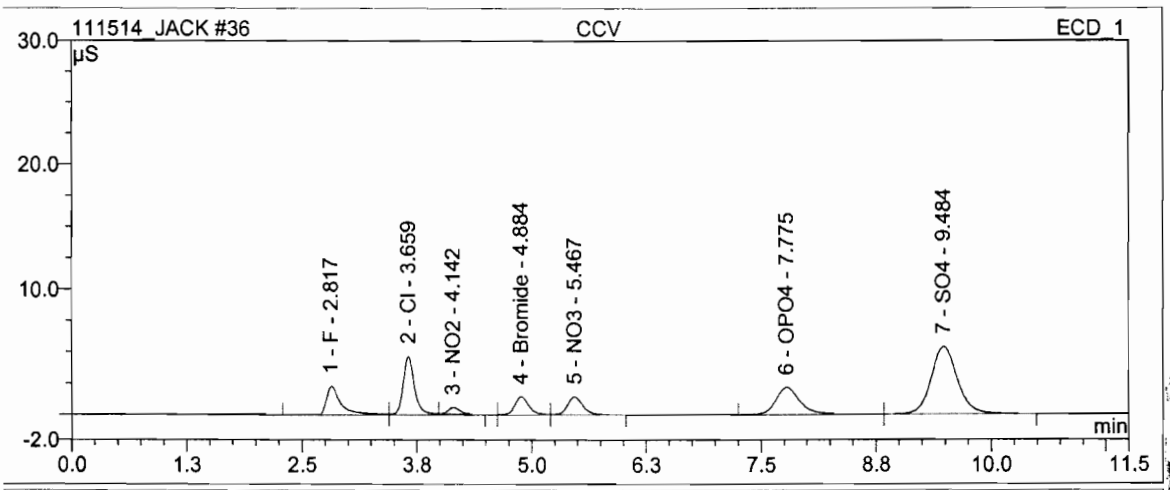


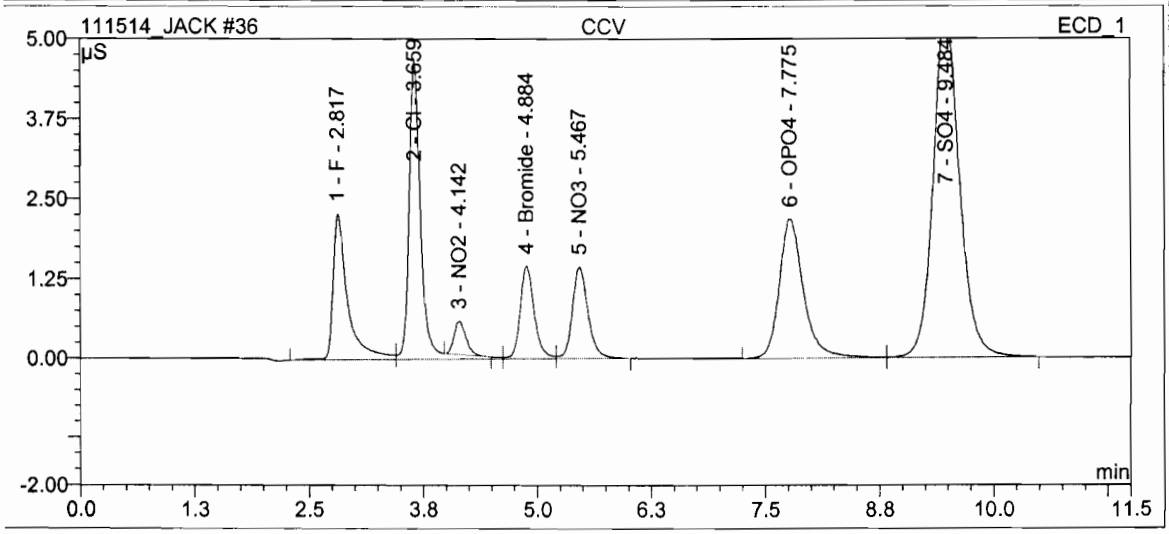


Integration Report - ECD_1

Sample Name:	**CCV**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 20:49**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.82	F	BM	0.434	2.282	1044.5683
2	3.66	Cl	M	0.707	4.673	2210.6211
3	4.14	NO2	Rd	0.080	0.527	127.7483
4	4.88	Bromide	M	0.263	1.462	2052.9483
5	5.47	NO3	MB	0.290	1.442	406.8493
6	7.78	OPO4	BM	0.680	2.180	7883.7431
7	9.48	SO4	MB	1.804	5.393	7714.7290
		TOTAL:		4.26	17.96	21441.21





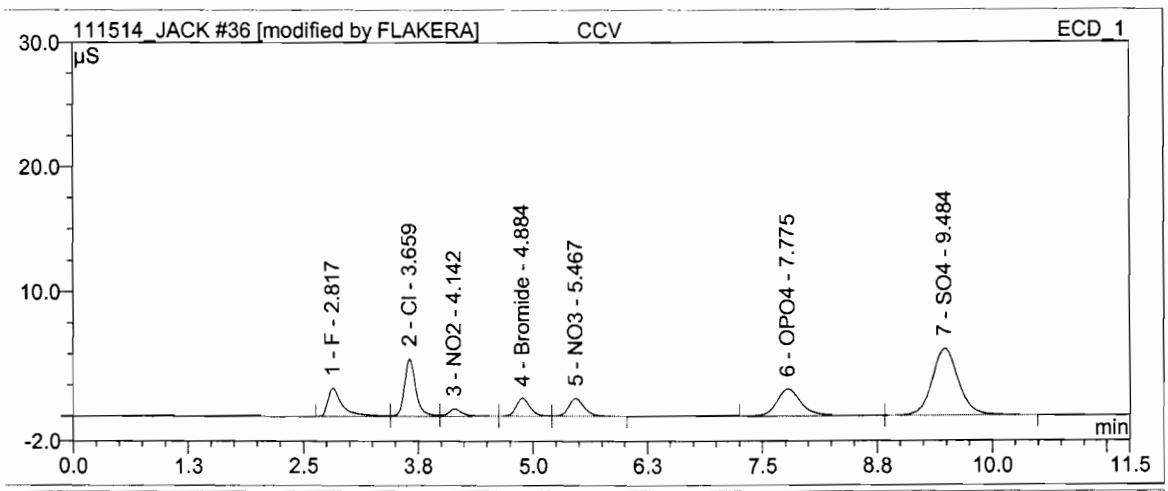
MI AE 11-21-14

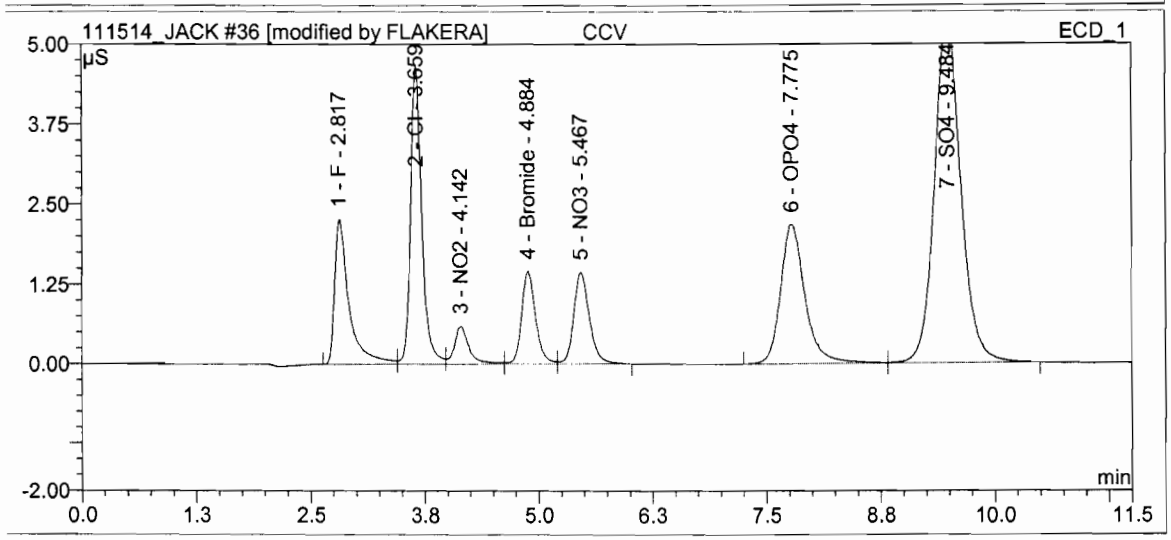
all but OPO4 SO4

Integration Report - ECD_1

Sample Name:	**CCV**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 20:49**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.82	F	BM *	0.414	2.262	996.5653
2	3.66	Cl	M *	0.663	4.658	2072.3966
3	4.14	NO2	M *	0.110	0.590	175.0979
4	4.88	Bromide	M *	0.259	1.455	2021.4169
5	5.47	NO3	MB*	0.288	1.439	403.9219
6	7.78	OPO4	BM	0.680	2.180	7883.7431
7	9.48	SO4	MB	1.804	5.393	7714.7290
		TOTAL:		4.22	17.98	21267.87

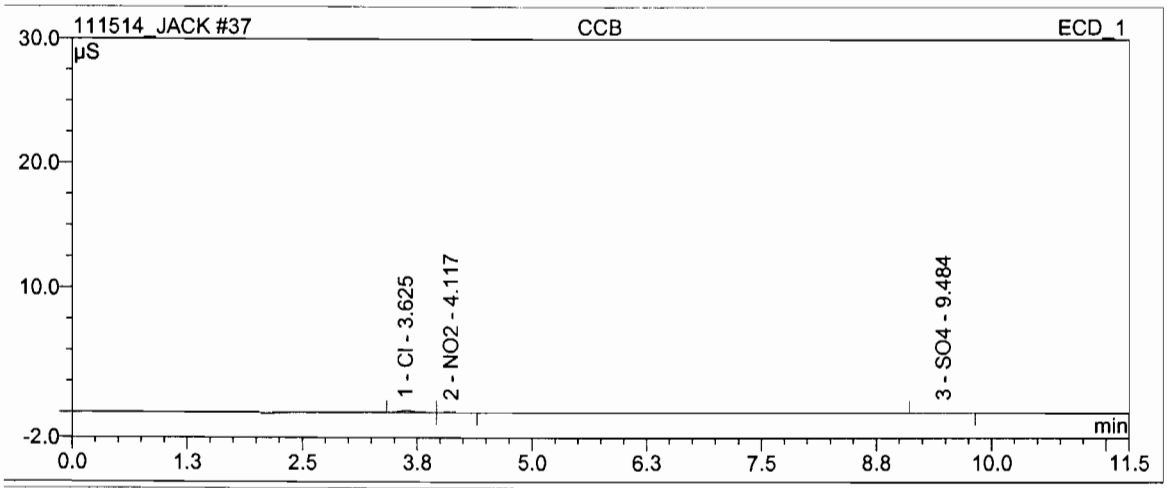


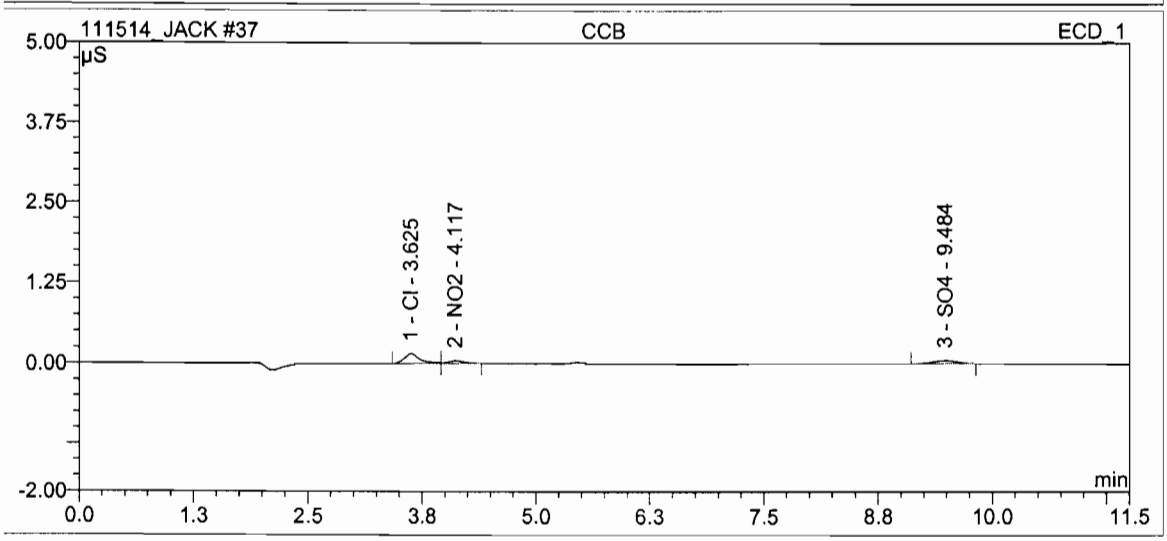


Integration Report - ECD_1

Sample Name:	**CCB**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 21:03**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	3.63	Cl	BM	0.031	0.154	95.3903
2	4.12	NO2	MB	0.008	0.041	12.2043
3	9.48	SO4	BMB	0.014	0.047	61.8964
		TOTAL:		0.05	0.24	169.49

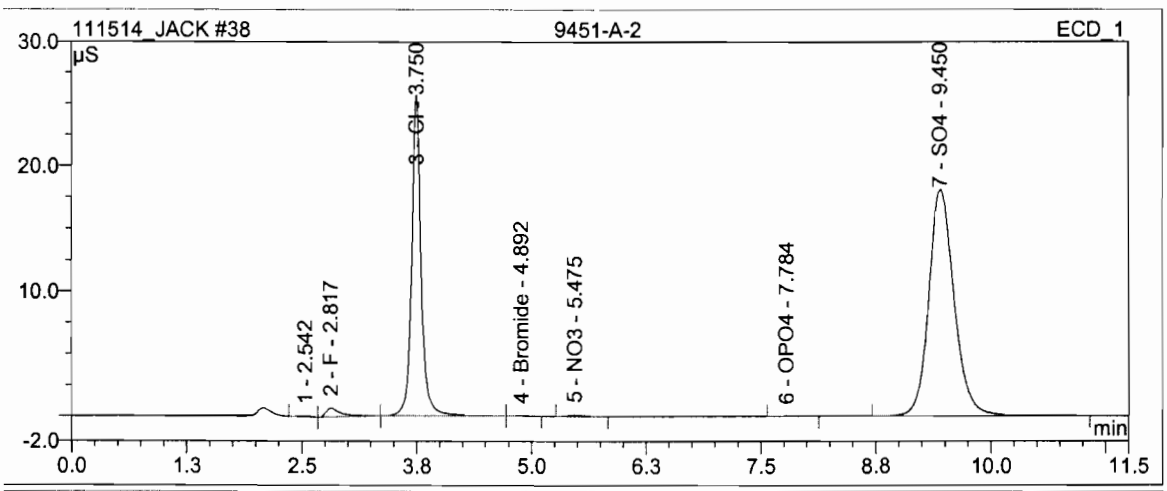


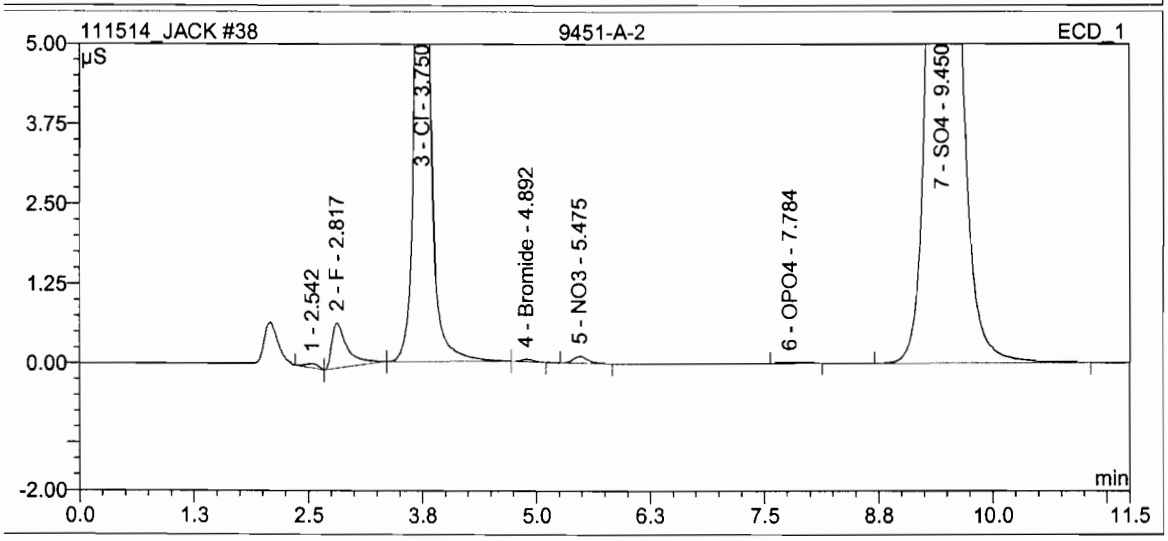


Integration Report - ECD_1

Sample Name:	**9451-A-2**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 21:17**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
2	2.82	F	bMb	0.142	0.716	342.2108
3	3.75	Cl	bMb	3.085	25.719	9640.5984
4	4.89	Bromide	bMB	0.006	0.040	47.3122
5	5.48	NO3	BMB	0.020	0.107	28.3995
6	7.78	OPO4	BMB	0.006	0.021	74.9715
7	9.45	SO4	BMB	5.841	18.114	24983.4609
		TOTAL:		9.10	44.72	35116.95

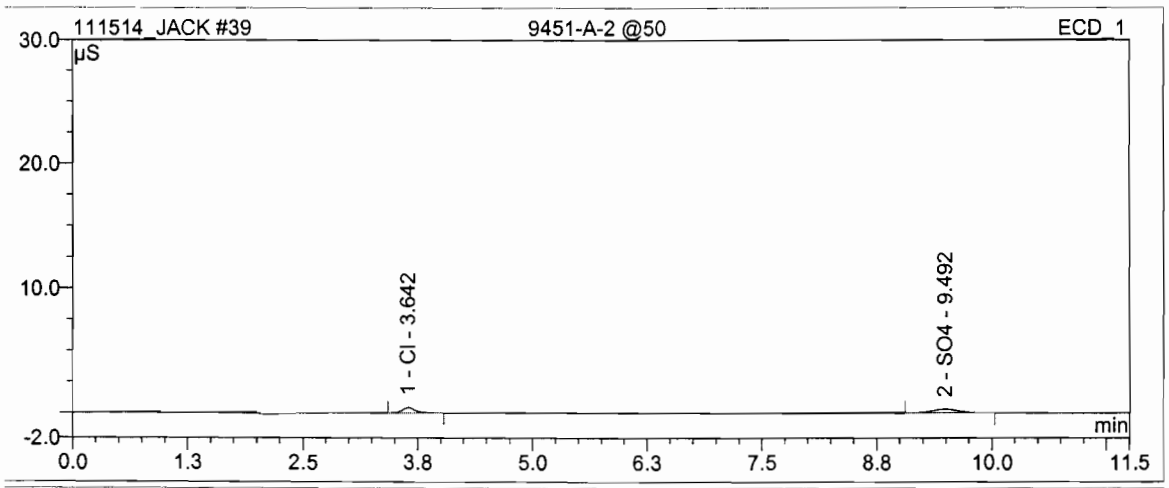


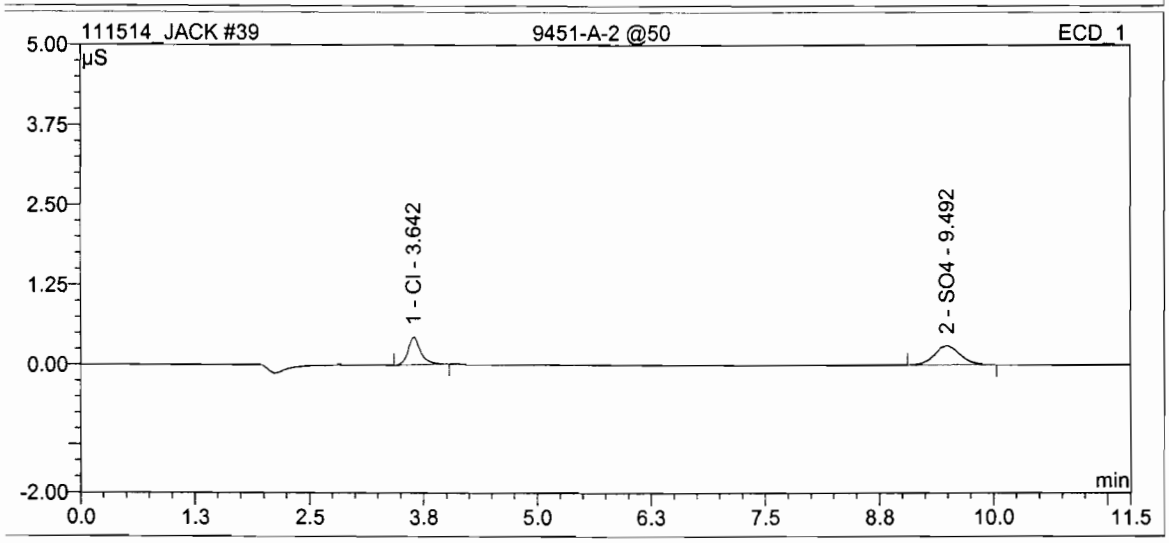


Integration Report - ECD_1

Sample Name:	**9451-A-2 @50**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 21:31**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	3.64	Cl	BMB	0.071	0.435	220.3568
2	9.49	SO4	BMB	0.099	0.297	424.5550
		TOTAL:		0.17	0.73	644.91

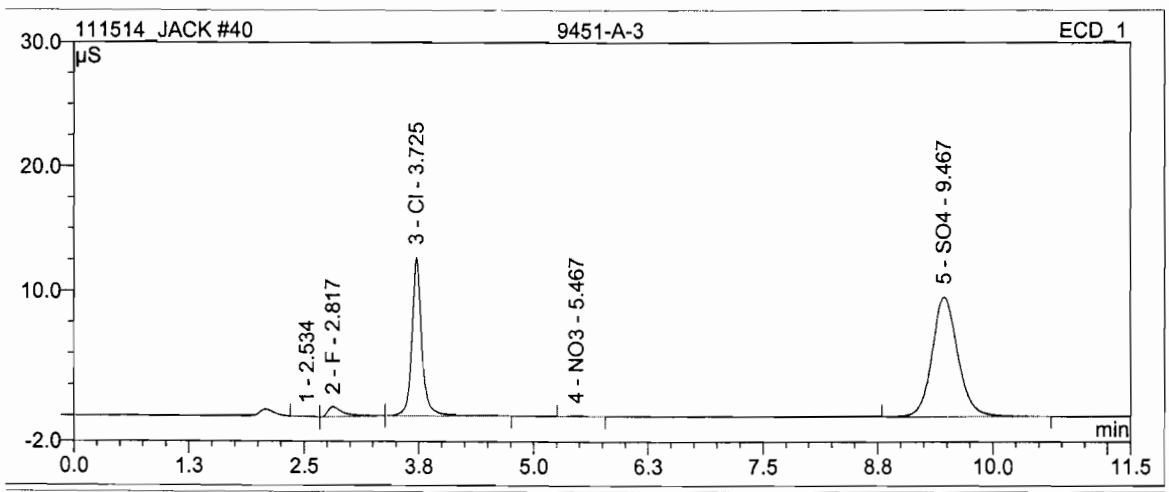


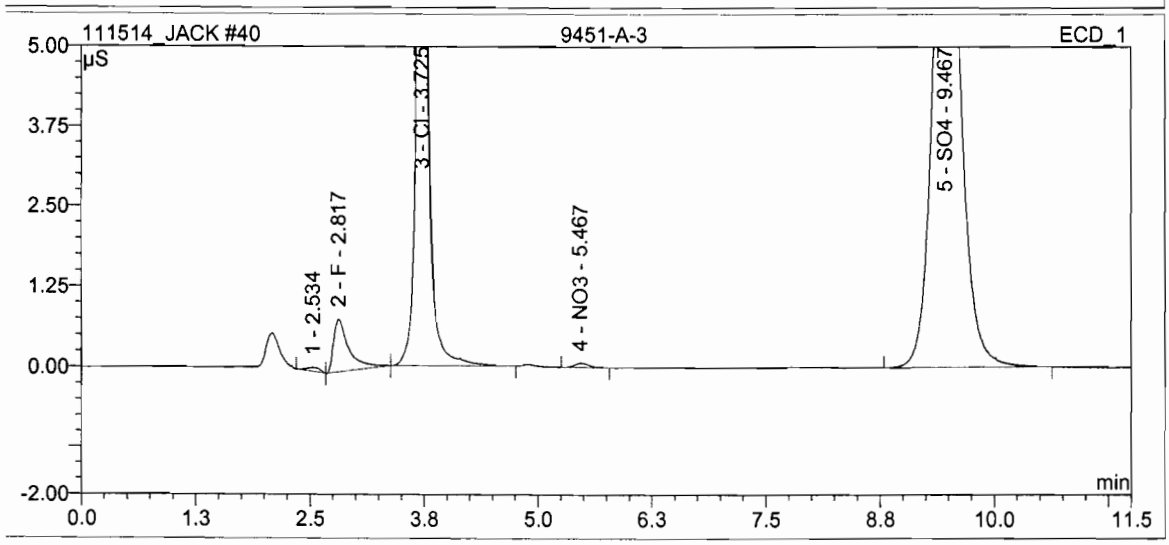


Integration Report - ECD_1

Sample Name:	**9451-A-3**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 21:45**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
2	2.82	F	bMB	0.159	0.815	381.9983
3	3.73	Cl	bMB	1.596	12.737	4988.4033
4	5.47	NO3	BMB	0.012	0.067	17.3078
5	9.47	SO4	BMB	3.133	9.581	13399.2359
		TOTAL:		4.90	23.20	18786.95

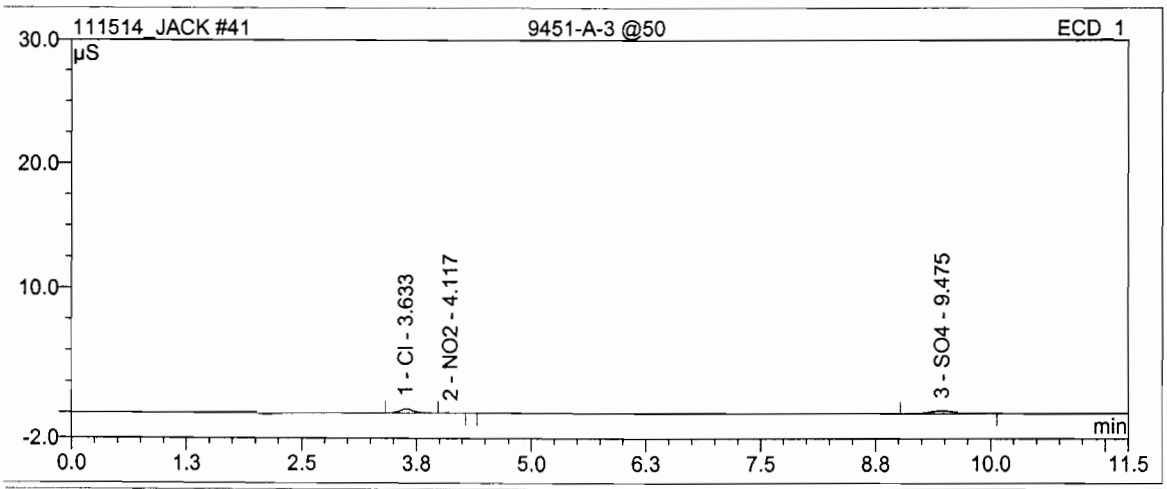


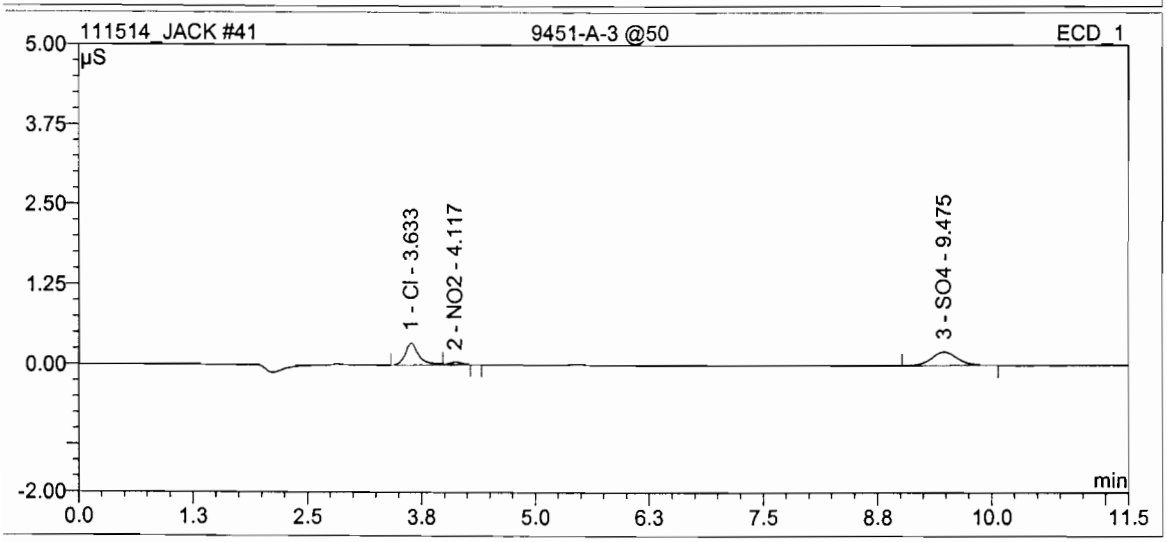


Integration Report - ECD_1

Sample Name:	**9451-A-3 @50**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 21:59**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	3.63	Cl	BMB	0.066	0.346	207.2651
2	4.12	NO2	Rd	0.005	0.033	7.3456
3	9.48	SO4	BMB	0.072	0.214	307.3050
		TOTAL:		0.14	0.59	521.92

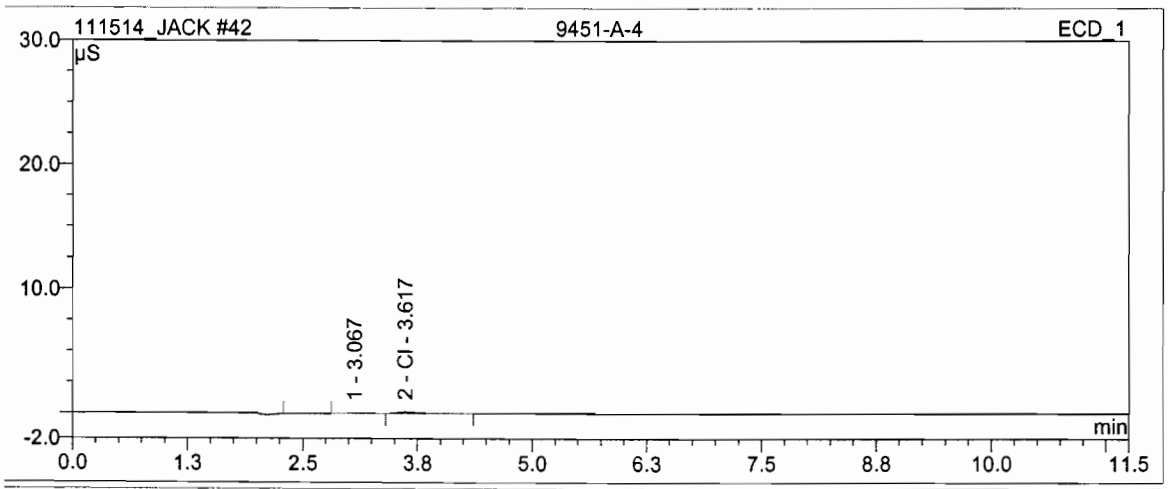


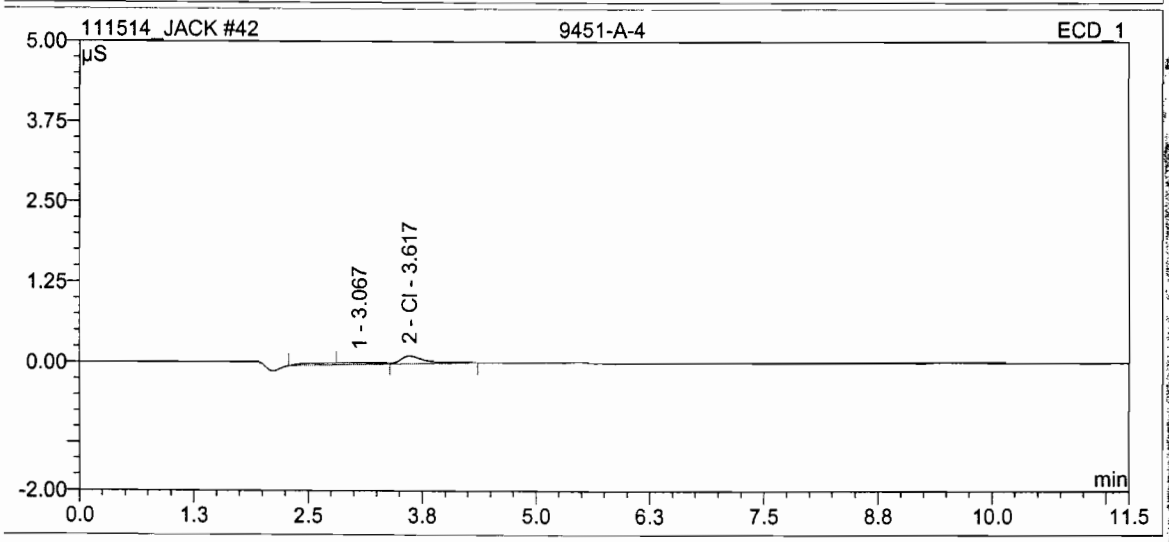


Integration Report - ECD_1

Sample Name:	**9451-A-4**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 22:13**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
2	3.62	Cl	BMB	0.067	0.121	210.2153
		TOTAL:		0.07	0.12	210.22



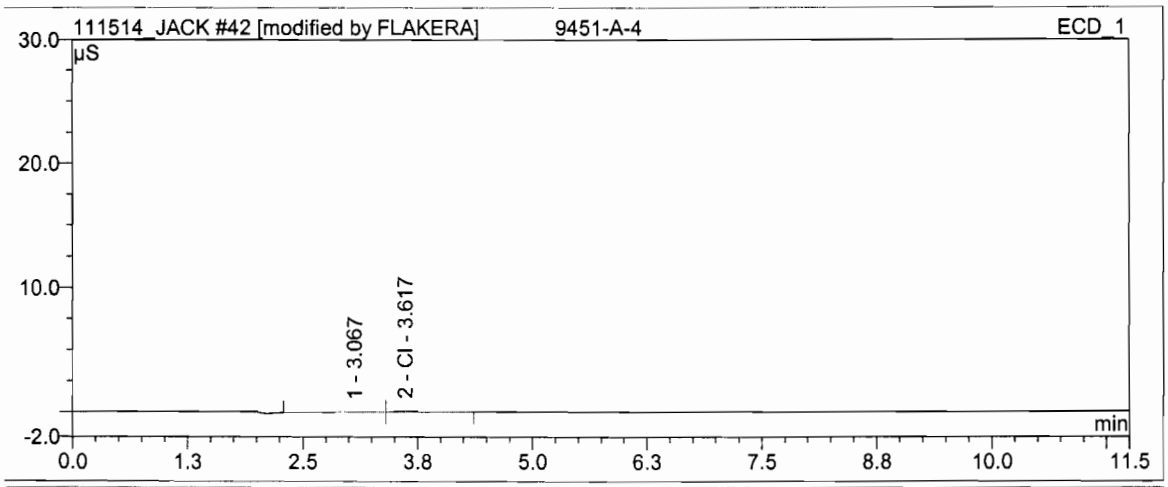


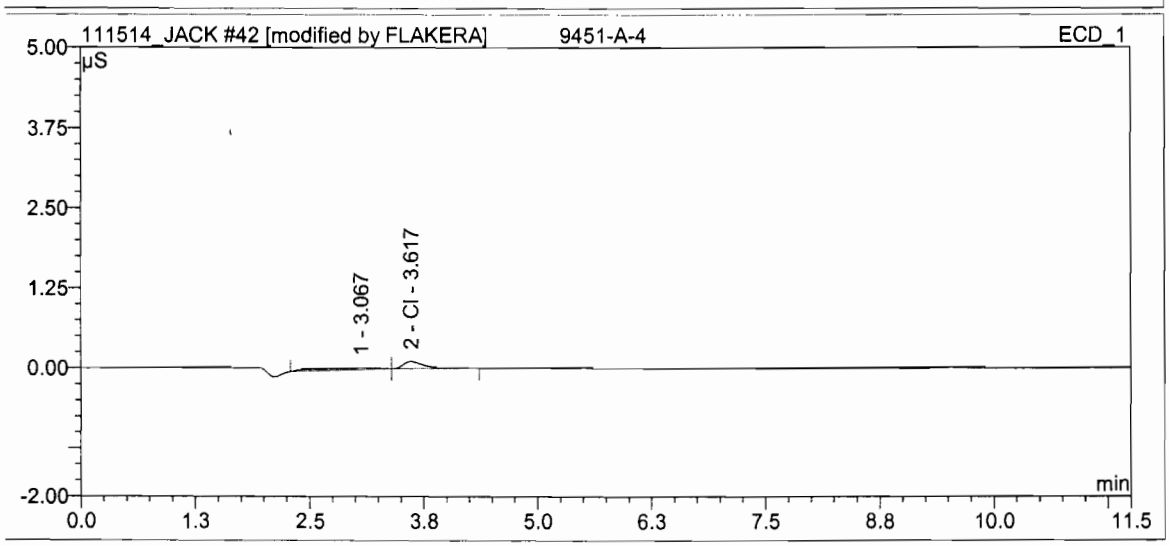
MI #E 11-21-14

Integration Report - ECD_1

Sample Name:	**9451-A-4**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 22:13**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
2	3.62	Cl	bMB*	0.031	0.109	98.0325
		TOTAL:		0.03	0.11	98.03

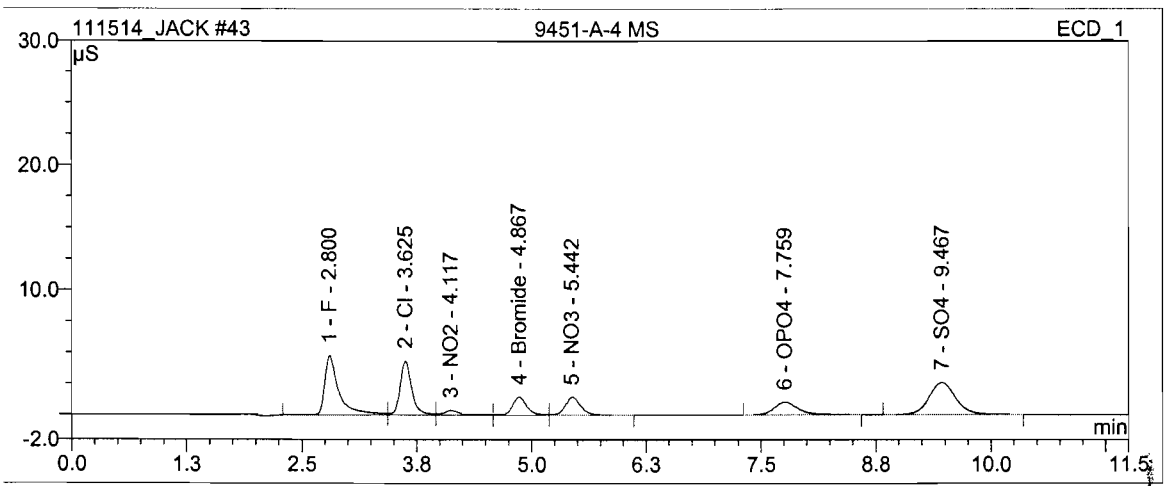


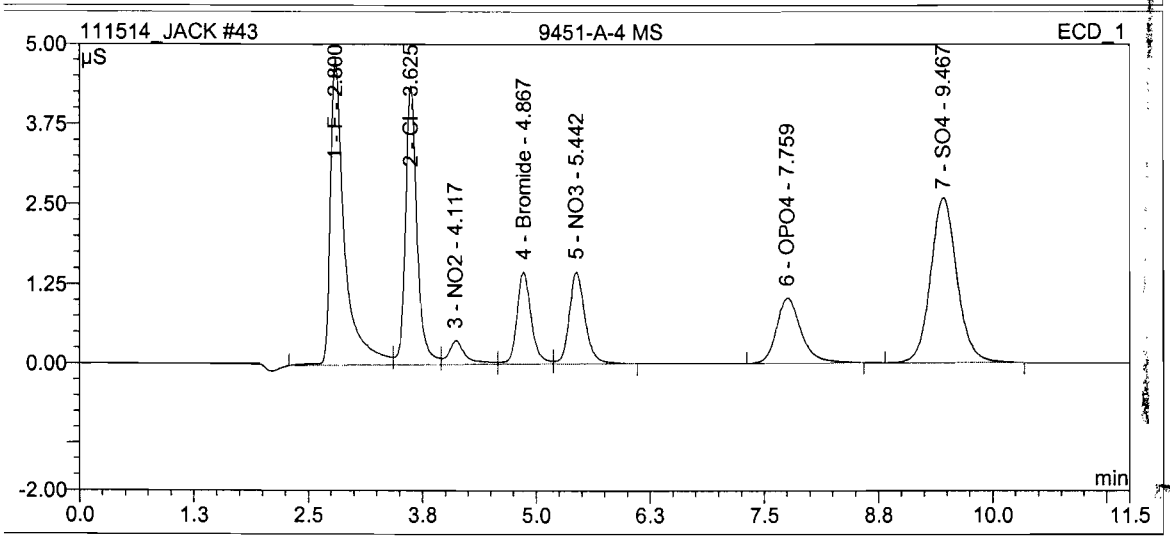


Integration Report - ECD_1

Sample Name:	**9451-A-4 MS**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 22:27**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BM	0.875	4.784	2107.1693
2	3.63	Cl	M	0.643	4.352	2008.5731
3	4.12	NO2	M	0.084	0.380	134.1785
4	4.87	Bromide	M	0.266	1.454	2079.0423
5	5.44	NO3	MB	0.294	1.449	412.4325
6	7.76	OPO4	BMB	0.323	1.030	3747.4825
7	9.47	SO4	BMB	0.873	2.581	3731.8833
		TOTAL:		3.36	16.03	14220.76





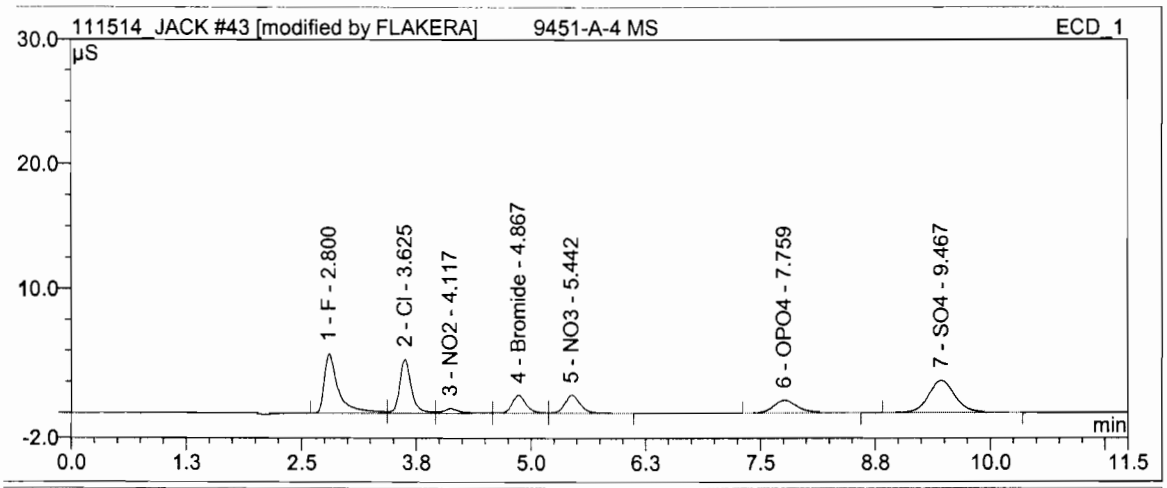
LJI 4F 11-21-14

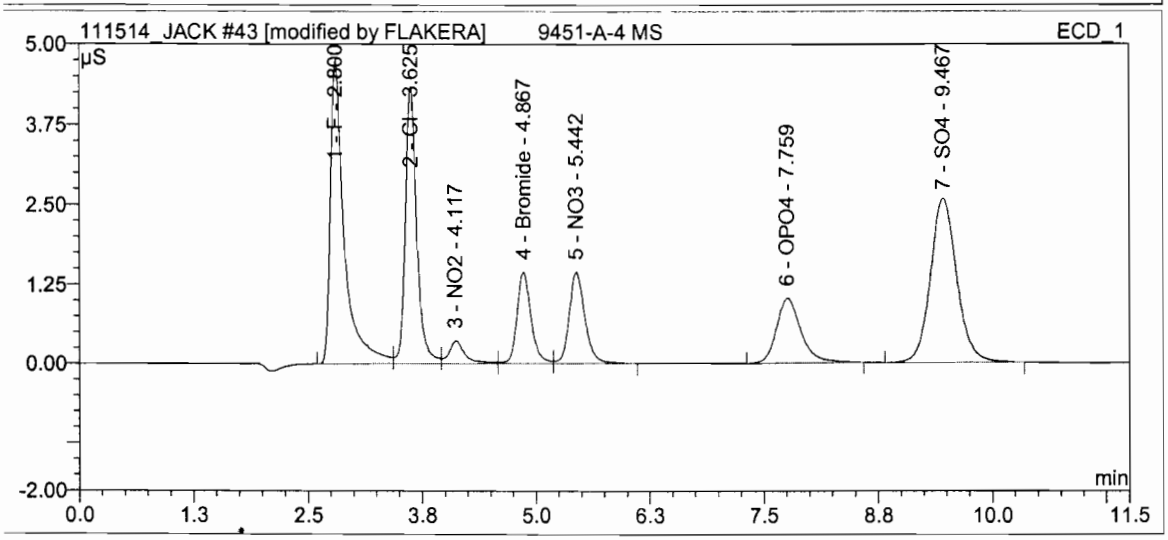
all but OPO4, SO4

Integration Report - ECD_1

Sample Name:	**9451-A-4 MS**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 22:27**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BM *	0.849	4.759	2045.0732
2	3.63	Cl	M *	0.633	4.333	1978.1685
3	4.12	NO2	M *	0.075	0.365	120.0686
4	4.87	Bromide	M *	0.261	1.444	2034.3727
5	5.44	NO3	MB*	0.290	1.444	407.8318
6	7.76	OPO4	BMB	0.323	1.030	3747.4825
7	9.47	SO4	BMB	0.873	2.581	3731.8833
		TOTAL:		3.30	15.96	14064.88

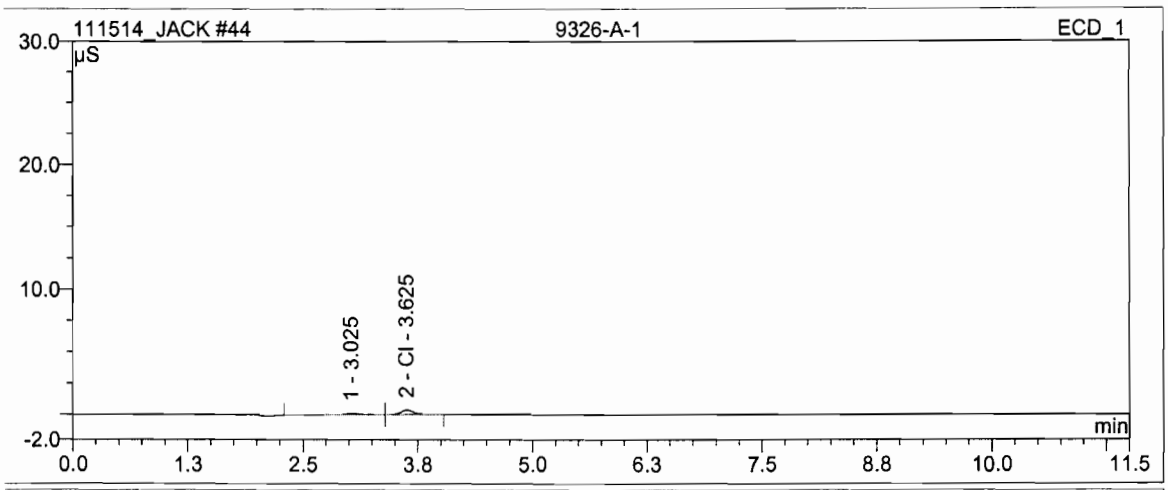


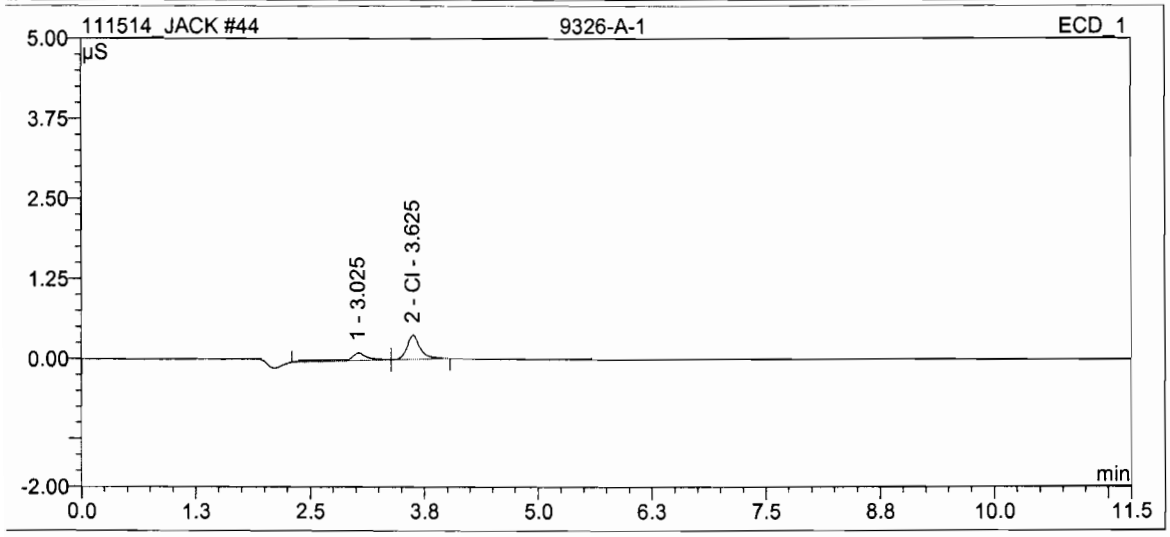


Integration Report - ECD_1

Sample Name:	**9326-A-1**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 22:41**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
2	3.63	Cl	MB	0.064	0.378	200.6718
		TOTAL:		0.06	0.38	200.67

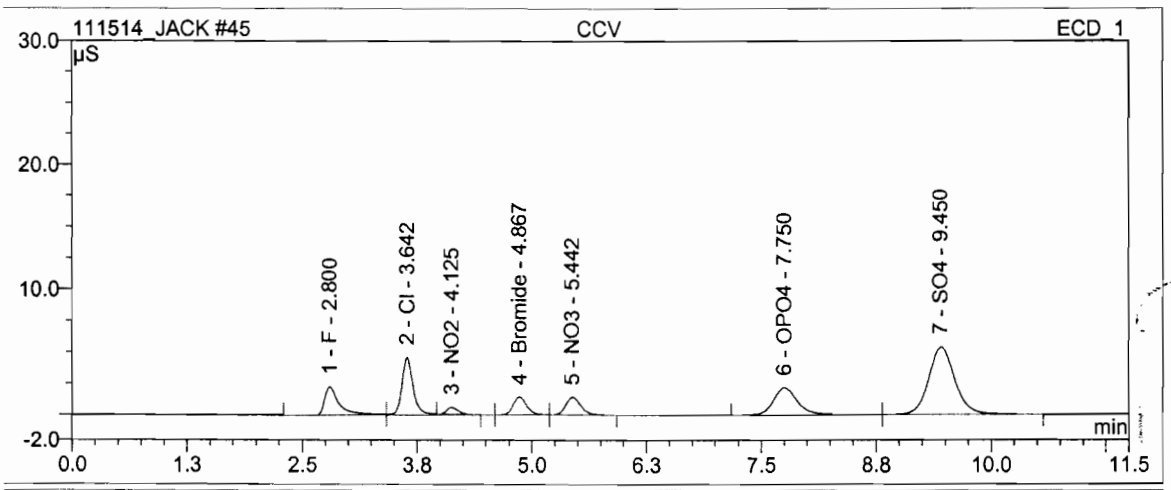


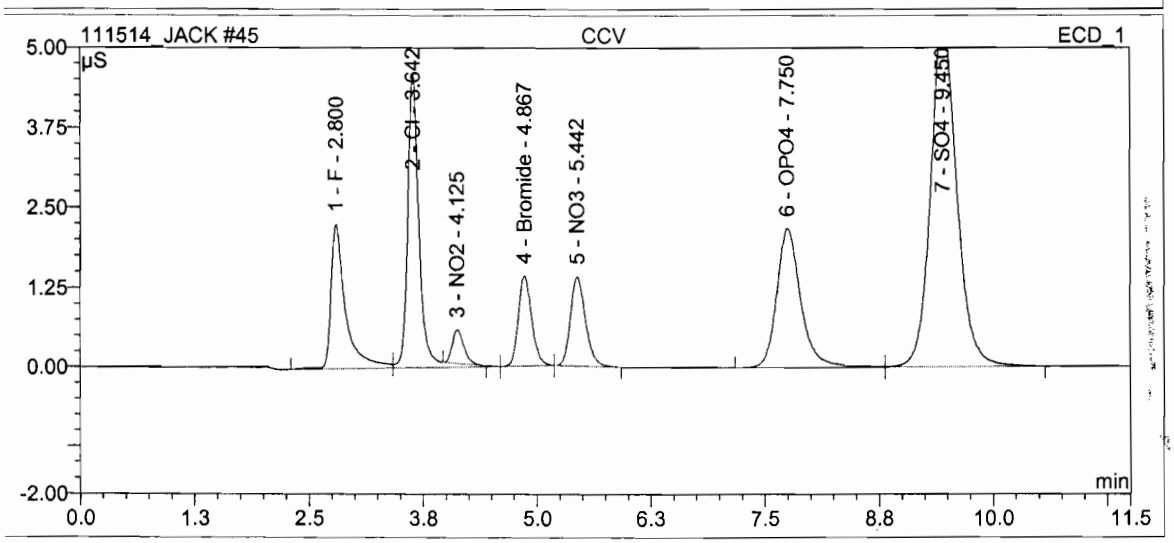


Integration Report - ECD_1

Sample Name:	**CCV**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 22:54**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BM	0.427	2.266	1028.6735
2	3.64	Cl	MB	0.676	4.596	2112.2273
3	4.13	NO2	Rd	0.079	0.532	126.7901
4	4.87	Bromide	bMb	0.242	1.422	1890.6069
5	5.44	NO3	bMB	0.271	1.404	380.2886
6	7.75	OPO4	BM	0.676	2.178	7837.6841
7	9.45	SO4	MB	1.795	5.382	7676.7246
		TOTAL:		4.17	17.78	21053.00



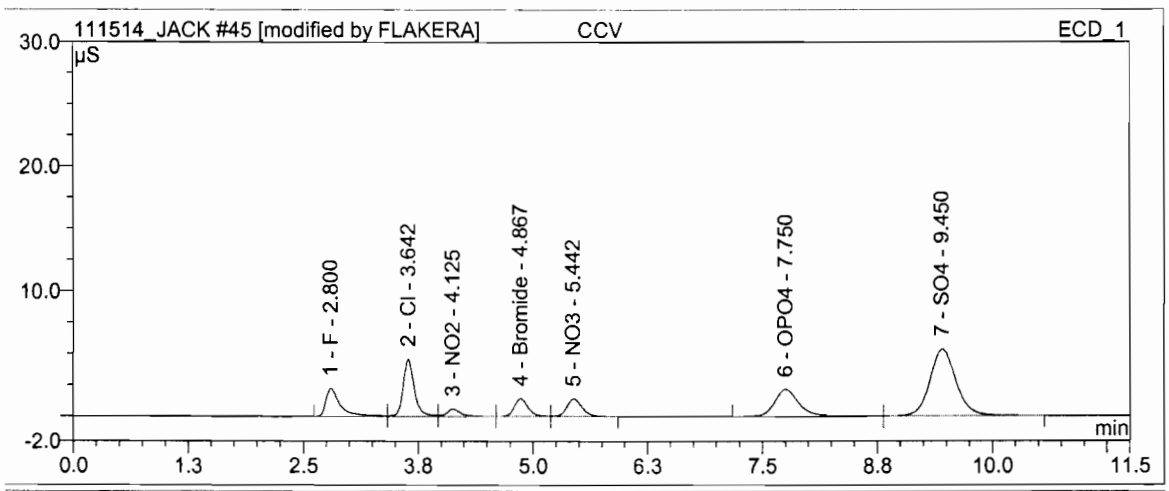


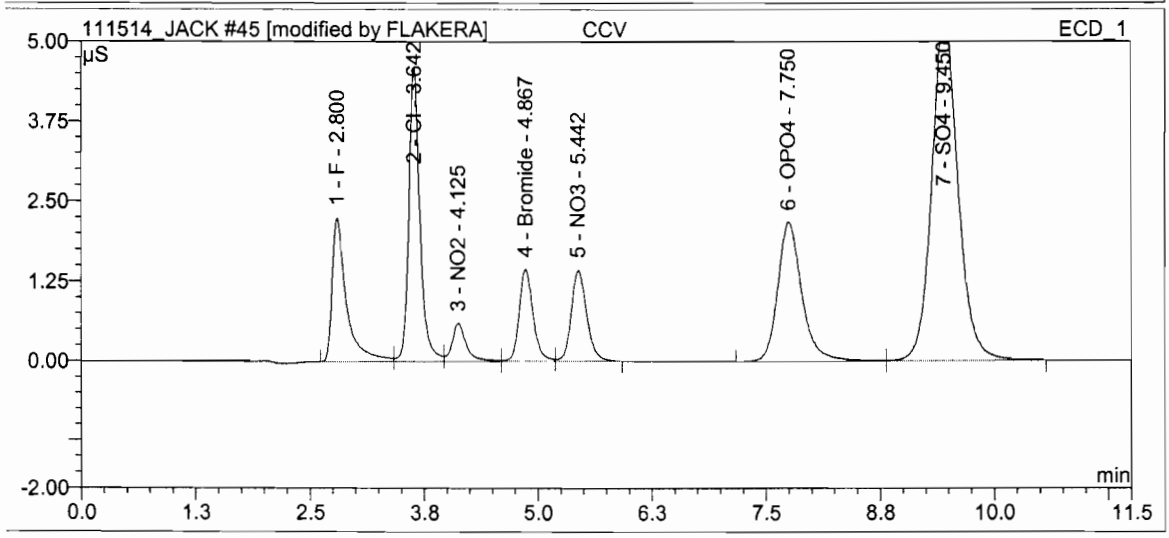
MI AF 11-21-14
all but OPO4, SO4

Integration Report - ECD_1

Sample Name:	**CCV**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 22:54**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	2.80	F	BM *	0.411	2.248	989.6997
2	3.64	Cl	M *	0.651	4.593	2034.7797
3	4.13	NO2	M *	0.108	0.596	172.8950
4	4.87	Bromide	M *	0.255	1.444	1993.4318
5	5.44	NO3	MB*	0.282	1.424	395.9814
6	7.75	OPO4	BM	0.676	2.178	7837.6841
7	9.45	SO4	MB	1.795	5.382	7676.7246
		TOTAL:		4.18	17.86	21101.20

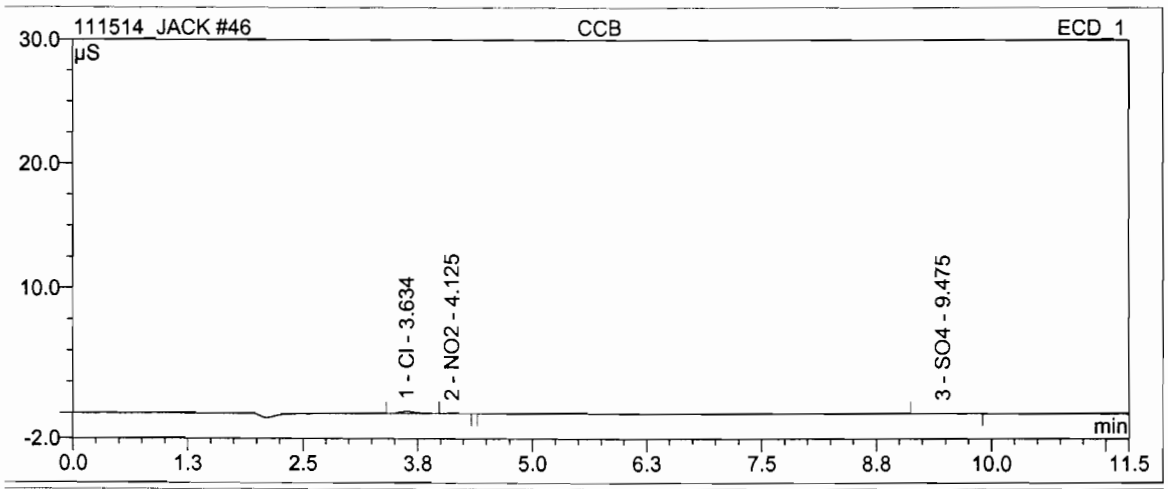


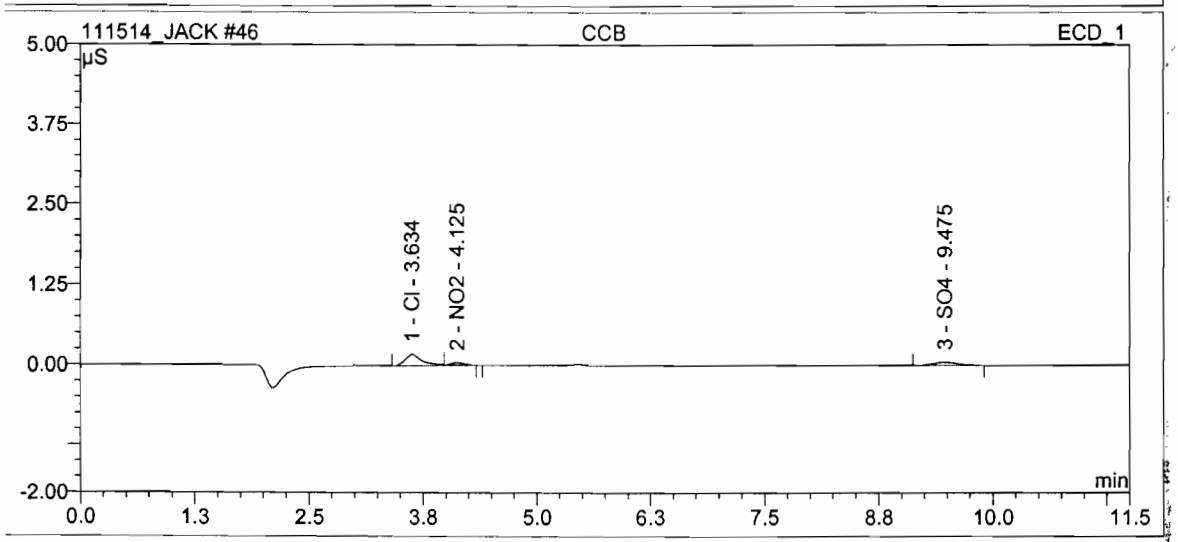


Integration Report - ECD_1

Sample Name:	**CCB**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 23:08**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	3.63	Cl	BMB	0.043	0.179	135.5265
2	4.13	NO2	Rd	0.005	0.035	8.4719
3	9.48	SO4	BMB	0.016	0.051	69.9504
		TOTAL:		0.07	0.27	213.95





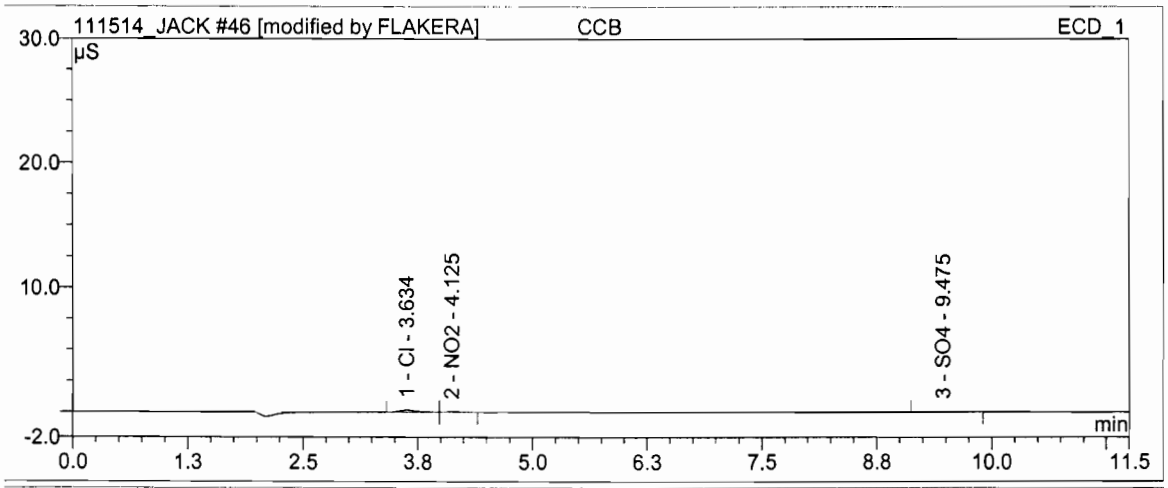
MI AF 11-21-14

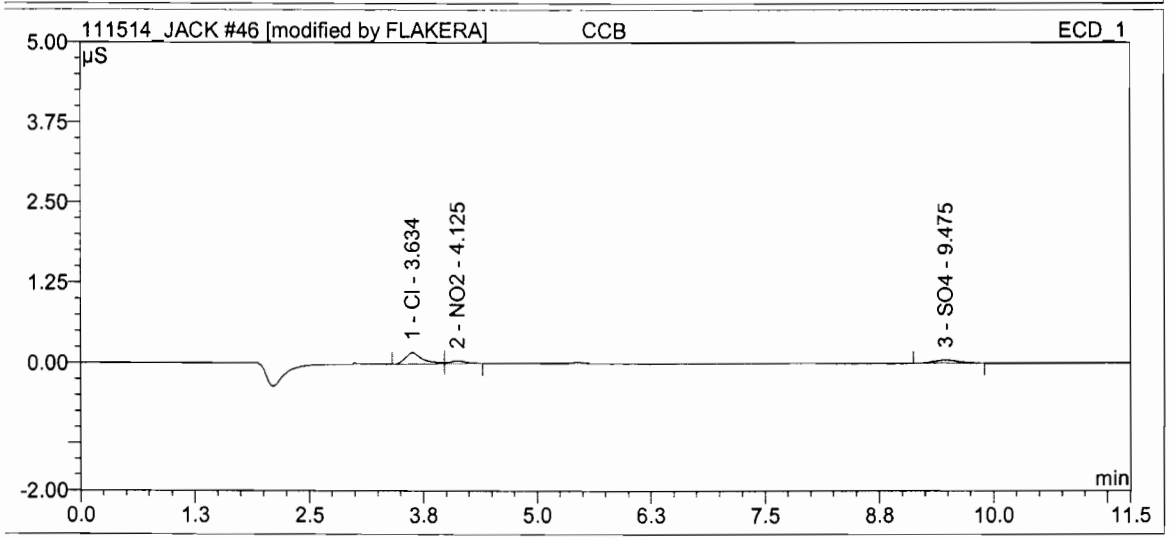
Cl, NO2

Integration Report - ECD_1

Sample Name:	**CCB**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SLIC03_local**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 23:08**	*Run Time:*	**11.50**

No. ECD_1	Time ECD_1 min	Peak Name ECD_1	Type ECD_1	Area ECD_1 µS*min	Height ECD_1 µS	Amount ECD_1
1	3.63	Cl	BM *	0.040	0.179	123.9344
2	4.13	NO2	MB*	0.009	0.047	14.3997
3	9.48	SO4	BMB	0.016	0.051	69.9504
		TOTAL:		0.07	0.28	208.28





Integration Report - ECD_1

Sample Name:	**END**	*Inj. Vol.:*	**50.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**SHUTDOWN**	*Operator:*	**n.a.**
Inj. Date/Time:	**15.11.14 23:22**	*Run Time:*	**n.a.**

n.a.	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**
n.a.	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**
n.a.	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**
		TOTAL:		0.00	0.00	0.00

111514_JACK #47 END ECD_1

Can't open raw data file "C:\Chromel\data\JACK\SEQUENCES\14NOV\111514_JACK.SEQ\ECD_1.CHL\7643.acd".
The system cannot find the file specified.

111514_JACK #47 END ECD_1

Can't open raw data file "C:\Chromel\data\JACK\SEQUENCES\14NOV\111514_JACK.SEQ\ECD_1.CHL\7643.acd".
The system cannot find the file specified.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Batch Number: 158800 Batch Start Date: 11/21/14 14:46 Batch Analyst: Trickle, Brittany A

Batch Method: 310.1 Batch End Date: 11/22/14 12:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	Initial pH	BuretStart1	BuretStop1	TitrantVolume1	BuretStart2
MB 160-158800/1		310.1		200 mL	7.45 SU	0 mL	0 mL	0 mL	0 mL
LCS 160-158800/2		310.1		50 mL	9.89 SU	0 mL	0 mL	0 mL	0 mL
HLCS 160-158800/3		310.1		50 mL	10.04 SU	0 mL	0 mL	0 mL	0 mL
160-9451-A-1	BG03-20141114-21	310.1	T	50 mL	7.86 SU	0 mL	0 mL	0 mL	0 mL
160-9451-A-2	BG04-20141114-21	310.1	T	50 mL	7.62 SU	0 mL	0 mL	0 mL	0 mL
160-9451-A-3	BG05-20141114-21	310.1	T	50 mL	7.61 SU	0 mL	0 mL	0 mL	0 mL
160-9451-A-4	N1-20141114-21	310.1	T	50 mL	4.36 SU	0 mL	0 mL	0 mL	0 mL

Lab Sample ID	Client Sample ID	Method Chain	Basis	BuretStop2	TitrantVolume2	CalcMsg	carb	hydr	bCarb
MB 160-158800/1		310.1		.25 mL	0.25 mL	Case 1	0 mg/L	0 mg/L	5 mg/L
LCS 160-158800/2		310.1		9.3 mL	9.3 mL	Case 1	0 mg/L	0 mg/L	186 mg/L
HLCS 160-158800/3		310.1		18.7 mL	18.7 mL	Case 1	0 mg/L	0 mg/L	374 mg/L
160-9451-A-1	BG03-20141114-21	310.1	T	19.1 mL	19.1 mL	Case 1	0 mg/L	0 mg/L	382 mg/L
160-9451-A-2	BG04-20141114-21	310.1	T	11.5 mL	11.5 mL	Case 1	0 mg/L	0 mg/L	230 mg/L
160-9451-A-3	BG05-20141114-21	310.1	T	6.8 mL	6.8 mL	Case 1	0 mg/L	0 mg/L	136 mg/L
160-9451-A-4	N1-20141114-21	310.1	T	0 mL	0 mL	Case 6	0 mg/L	0 mg/L	0 mg/L

Lab Sample ID	Client Sample ID	Method Chain	Basis	pAlk	tAlk	FinalAmount	Alk Int. 00009		
MB 160-158800/1		310.1		0 mg/L	5 mg/L	50 mL			
LCS 160-158800/2		310.1		0 mg/L	186 mg/L	50 mL	10 mL		
HLCS 160-158800/3		310.1		0 mg/L	374 mg/L	50 mL	20 mL		
160-9451-A-1	BG03-20141114-21	310.1	T	0 mg/L	382 mg/L	50 mL			
160-9451-A-2	BG04-20141114-21	310.1	T	0 mg/L	230 mg/L	50 mL			
160-9451-A-3	BG05-20141114-21	310.1	T	0 mg/L	136 mg/L	50 mL			
160-9451-A-4	N1-20141114-21	310.1	T	0 mg/L	0 mg/L	50 mL			

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Batch Number: 158800 Batch Start Date: 11/21/14 14:46 Batch Analyst: Trickle, Brittany A

Batch Method: 310.1 Batch End Date: 11/22/14 12:00

Batch Notes	
pH Buffer 1 ID	457799
pH Buffer 2 ID	455802
pH Buffer 3 ID	455801
First End time	11/22/14 12:00
Nominal Amount Used	50 mL
Probe ID	5 Star #4
First Start time	11/21/14 14:00
Normality of first Titrant	.02 N

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Batch Number: 160158 Batch Start Date: 12/01/14 12:33 Batch Analyst: Minier, Mark F

Batch Method: 150.1 Batch End Date: 12/01/14 12:48

Lab Sample ID	Client Sample ID	Method Chain	Basis	FinalAmount	SampleTemp	pHRead1	TempRead1	pHRead2	TempRead2
ICV 160-160158/4		150.1		20 mL	22.9 Celsius	7.03 SU	22.9 Celsius	7.03 SU	22.9 Celsius
LCS 160-160158/5		150.1		20 mL	22.9 Celsius	7.03 SU	22.9 Celsius	7.03 SU	22.9 Celsius
160-9451-A-1	BG03-20141114-21	150.1	T	20 mL	22.9 Celsius	7.54 SU	22.9 Celsius	7.54 SU	22.9 Celsius
160-9451-A-1 DU	BG03-20141114-21	150.1	T	20 mL	22.9 Celsius	7.60 SU	22.9 Celsius	7.58 SU	22.9 Celsius
160-9451-A-2	BG04-20141114-21	150.1	T	20 mL	22.7 Celsius	7.22 SU	22.8 Celsius	7.22 SU	22.8 Celsius
160-9451-A-3	BG05-20141114-21	150.1	T	20 mL	22.9 Celsius	7.40 SU	22.9 Celsius	7.41 SU	23.0 Celsius
160-9451-A-4	N1-20141114-21	150.1	T	20 mL	23.1 Celsius	5.71 SU	23.1 Celsius	5.73 SU	23.2 Celsius
CCV 160-160158/11		150.1		20 mL	23.3 Celsius	7.03 SU	23.3 Celsius	7.04 SU	23.3 Celsius

Lab Sample ID	Client Sample ID	Method Chain	Basis	CalcMsg	pH Buffer 7SS 00020				
ICV 160-160158/4		150.1		Read 2 Pass	20 mL				
LCS 160-160158/5		150.1		Read 2 Pass	20 mL				
160-9451-A-1	BG03-20141114-21	150.1	T	Read 2 Pass					
160-9451-A-1 DU	BG03-20141114-21	150.1	T	Read 2 Pass					
160-9451-A-2	BG04-20141114-21	150.1	T	Read 2 Pass					
160-9451-A-3	BG05-20141114-21	150.1	T	Read 2 Pass					
160-9451-A-4	N1-20141114-21	150.1	T	Read 2 Pass					
CCV 160-160158/11		150.1		Read 2 Pass	20 mL				

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Batch Number: 160158 Batch Start Date: 12/01/14 12:33 Batch Analyst: Minier, Mark F

Batch Method: 150.1 Batch End Date: 12/01/14 12:48

Batch Notes	
pH Buffer 1 ID	442694
pH Buffer 2 ID	358781
pH Buffer 3 ID	442693
pH Buffer 4 ID	510076
Calibration Date and Time	12/1/14 9:00
Electronic Slope	100.8
Instrument ID	A111
Pipette ID	RAD106
Sufficient volume for sample dup	yes
ID number of the thermometer	Orion pH probe

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Batch Number: 158738 Batch Start Date: 11/20/14 16:00 Batch Analyst: Trickle, Brittany A

Batch Method: 160.1 Batch End Date: 11/22/14 10:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	TareWeight	Weight1	Weight2	Weight3	WeightOne%Diff
MB 160-158738/1		160.1		100 mL	82.3287 g	82.3289 g	82.3289 g	0 g	PASS_D
LCS 160-158738/2		160.1		100 mL	89.7364 g	89.7873 g	89.7875 g	0 g	PASS_D
160-9451-A-2	BG04-20141114-21	160.1	T	100 mL	63.9623 g	63.9981 g	63.9978 g	0 g	PASS_D
160-9451-A-1	BG03-20141114-21	160.1	T	100 mL	67.7290 g	67.7907 g	67.7907 g	0 g	PASS_D
160-9451-A-3	BG05-20141114-21	160.1	T	100 mL	88.9583 g	88.9896 g	88.9894 g	0 g	PASS_D
160-9451-A-4	N1-20141114-21	160.1	T	100 mL	83.5361 g	83.5362 g	83.5360 g	0 g	PASS_D

Lab Sample ID	Client Sample ID	Method Chain	Basis	Residue	Residue2	FinalAmount	TDS LCS 00036		
MB 160-158738/1		160.1		0.00020 g	0.00020 g	100 mL			
LCS 160-158738/2		160.1		0.05090 g	0.05110 g	100 mL	100 mL		
160-9451-A-2	BG04-20141114-21	160.1	T	0.03580 g	0.03550 g	100 mL			
160-9451-A-1	BG03-20141114-21	160.1	T	0.06170 g	0.06170 g	100 mL			
160-9451-A-3	BG05-20141114-21	160.1	T	0.03130 g	0.03110 g	100 mL			
160-9451-A-4	N1-20141114-21	160.1	T	0.0001 g	-0.00010 g	100 mL			

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Batch Number: 158738 Batch Start Date: 11/20/14 16:00 Batch Analyst: Trickle, Brittany A

Batch Method: 160.1 Batch End Date: 11/22/14 10:00

Batch Notes	
Balance ID	1123051741
Constant Weight (WT2) Date/Time in Oven	11/22/14 8:00
Constant Weight (WT2) Date/Time Out	11/22/14 10:00
Constant Weight (WT2) Temp In	183 Celsius
Constant Weight (WT2) Temp Out	183 Celsius
Uncorrected CW (Wt2) Temp In	183 Celsius
Uncorrected CW (Wt2) Temp Out	183 Celsius
Corrected Temperature in Oven	105 Celsius
Corrected Temperature out of Oven	105 Celsius
Date/Time Samples placed in Oven	11/20/14 16:00
Date/Time Samples removed from Oven	11/21/14 9:00
Nominal Amount Used	100 mL
Oven ID	4;1
Oven Temperature Verification	105 Celsius
ID number of the thermometer	0817; 0666
Uncorrected In Temperature	105 Celsius
Uncorrected Out Temperature	105 Celsius
Weight(WT1) Start Date/Time	11/21/14 9:00
Weight(WT1) Date/Time Out	11/22/14 6:00
Weight(WT1) Start Temp	183 Celsius
Weight(WT1) Temp Out	183 Celsius
Uncorrected Weight(WT1) Start Temp	183 Celsius
Uncorrected Weight(WT1) Temp Out	183 Celsius

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Batch Number: 157772 Batch Start Date: 11/14/14 08:58 Batch Analyst: Flaker, Alicia M

Batch Method: 300.0 Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	IC Cal High 00030	IC Cal Low 00005	IC ClO3 Cal 00003	IC ClO3 Int 00031
IC 160-157772/2		300.0		5 mL	1.0 mL		0.25 mL		25 uL
IC 160-157772/3		300.0		5 mL	1.0 mL	0.5 mL			100 uL
IC 160-157772/4		300.0		5 mL	1.0 mL	1 mL		20 uL	
IC 160-157772/5		300.0		5 mL	1.0 mL	2.5 mL		50 uL	
IC 160-157772/6		300.0		5 mL	1.0 mL	5 mL		100 uL	

Batch Notes	

Basis	Basis Description

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Batch Number: 157774 Batch Start Date: 11/18/14 10:28 Batch Analyst: Flaker, Alicia M

Batch Method: 300.0 Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	IC 2nd Source 00007	IC Cal High 00032			
ICV 160-157774/1		300.0		5 mL	2 mL				
ICB 160-157774/2		300.0		5 mL					
MB 160-157774/3		300.0		5 mL					
LCS 160-157774/4		300.0		5 mL		2 mL			
CCV 160-157774/11		300.0		5 mL		2 mL			
CCB 160-157774/12		300.0		5 mL					
CCV 160-157774/22		300.0		5 mL		2 mL			
CCB 160-157774/23		300.0		5 mL					
160-9451-A-2	BG04-20141114-21	300.0	T	5 mL					
CCV 160-157774/33		300.0		5 mL		2 mL			
CCB 160-157774/34		300.0		5 mL					

Batch Notes	
Batch Comment	Pipettes: IC-3, IC-5, WC001
Eluent 1 Lot	494955

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Batch Number: 158759 Batch Start Date: 11/15/14 12:42 Batch Analyst: Flaker, Alicia M

Batch Method: 300.0 Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	IC 2nd Source 00007	IC Cal High 00031	IC MS Soln 00005	
ICV 160-158759/1		300.0		5 mL	5 mL	2 mL			
ICB 160-158759/2		300.0		5 mL	5 mL				
MB 160-158759/3		300.0		5 mL	5 mL				
LCS 160-158759/4		300.0		5 mL	5 mL		2 mL		
CCV 160-158759/13		300.0		5 mL	5 mL		2 mL		
CCB 160-158759/14		300.0		5 mL	5 mL				
CCV 160-158759/25		300.0		5 mL	5 mL		2 mL		
CCB 160-158759/26		300.0		5 mL	5 mL				
160-9451-A-1	BG03-20141114-21	300.0	T	5 mL	5 mL				
160-9451-A-1 ^50	BG03-20141114-21	300.0	T	5 mL	5 mL				
CCV 160-158759/36		300.0		5 mL	5 mL		2 mL		
CCB 160-158759/37		300.0		5 mL	5 mL				
160-9451-A-2	BG04-20141114-21	300.0	T	5 mL	5 mL				
160-9451-A-2 ^50	BG04-20141114-21	300.0	T	5 mL	5 mL				
160-9451-A-3	BG05-20141114-21	300.0	T	5 mL	5 mL				
160-9451-A-4	N1-20141114-21	300.0	T	5 mL	5 mL				
160-9451-A-4 MS	N1-20141114-21	300.0	T	5 mL	5 mL			0.1 mL	
CCV 160-158759/45		300.0		5 mL	5 mL		2 mL		
CCB 160-158759/46		300.0		5 mL	5 mL				

Batch Notes	
Balance ID	1123051741
Eluent 1 Lot	494955
Pipette ID	IC-3, IC-5, WC001

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Batch Number: 158759 Batch Start Date: 11/15/14 12:42 Batch Analyst: Flaker, Alicia M

Batch Method: 300.0 Batch End Date:

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

ALPHA SPECTROSCOPY

Method A-01-R Th

Isotopic Thorium (Alpha Spectrometry) by Method A-01-R

Prep Batch: 158130

Preparation, Extraction Chromatography Resin Actinide Separation

Alpha Spectroscopy Analysis Detail Report
Prep Batch: 158130

Lab ID: MB 160-158130/1-A
Client ID:
Sigma: 2
Analyzed: 11/23/14 22:34
Detector: AV165
Dil Fac: 1
Decay Corrected: No
Yield Truncated: No
Ts: 400

Analyte	MB Result	Count Unc	Total Unc	Qualifier	Unit	RL	MDC	Anly Batch
Thorium-228	0.05362	0.0852	0.0853	U	pCi/L	1.00	0.148	159070
Thorium-230	0.2173	0.0971	0.0988		pCi/L	1.00	0.0583	159070
Thorium-232	0.001750	0.0244	0.0244	U	pCi/L	1.00	0.0691	159070
Thorium-227	0.01052	0.0820	0.0820	U	pCi/L	1.00	0.162	159070

Tracer	MB Result	Count Unc	Total Unc	Qualifier	Unit	MDC	Spike Added	% Rec	% Rec Limits
Thorium-229	9.765	0.577	1.00		pCi/L	0.0255	12.1	80.6	30 - 110

Lab ID: LCS 160-158130/2-A
Client ID:
Sigma: 2
Analyzed: 11/23/14 22:34
Detector: AV168
Dil Fac: 1
Decay Corrected: No
Yield Truncated: No
Ts: 400

Analyte	LCS Result	Count Unc	Total Unc	Qualifier	Unit	RL	MDC	Anly Batch
Thorium-230	7.990	0.571	0.881		pCi/L	1.00	0.0307	159071

Tracer	LCS Result	Count Unc	Total Unc	Qualifier	Unit	MDC	Spike Added	% Rec	% Rec Limits
Thorium-229	10.18	0.592	1.04		pCi/L	0.0743	12.1	84.0	30 - 110

Lab ID: 160-9451-1
Client ID: BG03-20141114-21
Sigma: 2
Analyzed: 11/23/14 22:34
Detector: AV174
Dil Fac: 1
Decay Corrected: No
Yield Truncated: No
Ts: 400

Analyte	Result	Count Unc	Total Unc	Qualifier	Unit	RL	MDC	Anly Batch
Thorium-228	0.809	0.932	0.934	U G	pCi/L	1.00	1.51	159075
Thorium-230	1.35	0.805	0.813		pCi/L	1.00	0.779	159075
Thorium-232	0.587	0.522	0.525		pCi/L	1.00	0.581	159075
Thorium-227	0.632	0.762	0.764	U G	pCi/L	1.00	1.24	159075

Tracer	Result	Count Unc	Total Unc	Qualifier	Unit	MDC	Spike Added	% Rec	% Rec Limits
Thorium-229	101	5.97	10.4		pCi/L	0.488	121	83.6	30 - 110

Lab ID: 160-9451-2
Client ID: BG04-20141114-21
Sigma: 2
Analyzed: 11/23/14 22:34
Detector: AV176
Dil Fac: 1
Decay Corrected: No
Yield Truncated: No
Ts: 400

Analyte	Result	Count Unc	Total Unc	Qualifier	Unit	RL	MDC	Anly Batch
Thorium-228	1.40	0.841	0.849		pCi/L	1.00	0.969	159076
Thorium-230	2.01	0.876	0.892		pCi/L	1.00	0.287	159076

Alpha Spectroscopy Analysis Detail Report
Prep Batch: 158130

Lab ID: 160-9451-2
Client ID: BG04-20141114-21
Sigma: 2
Analyzed: 11/23/14 22:34
Detector: AV176
Dil Fac: 1
Decay Corrected: No
Yield Truncated: No
Ts: 400

Analyte	Result	Count Unc	Total Unc	Qualifier	Unit	RL	MDC	Anly Batch
Thorium-232	0.111	0.291	0.292	U	pCi/L	1.00	0.625	159076
Thorium-227	0.0953	0.542	0.542	U G	pCi/L	1.00	1.12	159076

Tracer	Result	Count Unc	Total Unc	Qualifier	Unit	MDC	Spike Added	% Rec	% Rec Limits
Thorium-229	107	6.01	10.8		pCi/L	0.468	121	88.5	30 - 110

Lab ID: 160-9451-3
Client ID: BG05-20141114-21
Sigma: 2
Analyzed: 11/23/14 22:34
Detector: AV177
Dil Fac: 1
Decay Corrected: No
Yield Truncated: No
Ts: 400

Analyte	Result	Count Unc	Total Unc	Qualifier	Unit	RL	MDC	Anly Batch
Thorium-228	0.429	0.473	0.474	U	pCi/L	1.00	0.759	159077
Thorium-230	1.85	0.626	0.645		pCi/L	1.00	0.288	159077
Thorium-232	0.155	0.179	0.180		pCi/L	1.00	0.155	159077
Thorium-227	0.0605	0.319	0.319	U	pCi/L	1.00	0.646	159077

Tracer	Result	Count Unc	Total Unc	Qualifier	Unit	MDC	Spike Added	% Rec	% Rec Limits
Thorium-229	51.8	3.04	5.31		pCi/L	0.247	60.5	85.7	30 - 110

Lab ID: 160-9451-4
Client ID: N1-20141114-21
Sigma: 2
Analyzed: 11/23/14 22:34
Detector: AV178
Dil Fac: 1
Decay Corrected: No
Yield Truncated: No
Ts: 400

Analyte	Result	Count Unc	Total Unc	Qualifier	Unit	RL	MDC	Anly Batch
Thorium-228	0.0913	0.0771	0.0775	U	pCi/L	1.00	0.107	159078
Thorium-230	0.175	0.0873	0.0886		pCi/L	1.00	0.0583	159078
Thorium-232	0.00350	0.0344	0.0344	U	pCi/L	1.00	0.0845	159078
Thorium-227	0.0490	0.0644	0.0645	U	pCi/L	1.00	0.107	159078

Tracer	Result	Count Unc	Total Unc	Qualifier	Unit	MDC	Spike Added	% Rec	% Rec Limits
Thorium-229	9.98	0.589	1.02		pCi/L	0.0481	12.1	82.5	30 - 110

Alpha Spectroscopy Analysis Detail Report
Prep Batch: 158130

Quality Control Summary

Method Blank ID:	Analyte	Parent Result	Spike Added	MB Result	Qualifier	Unit	% Rec	% Rec Limits	RPD	RER	DER	RER Limit	Z Factor
MB 160-158130/1-A	Thorium-228			0.05362	U	pCi/L							
MB 160-158130/1-A	Thorium-230			0.2173		pCi/L							
MB 160-158130/1-A	Thorium-232			0.001750	U	pCi/L							
MB 160-158130/1-A	Thorium-227			0.01052	U	pCi/L							

Lab Control Sample ID:	Analyte	Parent Result	Spike Added	LCS Result	Qualifier	Unit	% Rec	% Rec Limits	RPD	RER	DER	RER Limit	Z Factor
LCS 160-158130/2-A	Thorium-230		8.03	7.990		pCi/L	100	81 - 125					

Glossary:

Ts = Count Duration, Sample

ALPHA SPECTROSCOPY BATCH WORKSHEET

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Batch Number: 158130 Batch Start Date: 11/19/14 11:12 Batch Analyst: Bernsen, Sarah C

Batch Method: ExtChrom Batch End Date: 11/21/14 08:48

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	Th-229 00018	Th-230 00025			
MB 160-158130/1		ExtChrom, A-01-R		500 mL	0.2 mL				
LCS 160-158130/2		ExtChrom, A-01-R		500 mL	0.2 mL	0.2 mL			
160-9451-G-1	BG03-20141114-21	ExtChrom, A-01-R	T	50.24 mL	0.2 mL				
160-9451-G-2	BG04-20141114-21	ExtChrom, A-01-R	T	50.17 mL	0.2 mL				
160-9451-H-3	BG05-20141114-21	ExtChrom, A-01-R	T	100.12 mL	0.2 mL				
160-9451-H-4	N1-20141114-21	ExtChrom, A-01-R	T	500.97 mL	0.2 mL				

Batch Notes	
Balance ID	1125353055
Column Analyst	nmn per scb
Column Date	11/20/14
CoPrecipitation Analyst	mfm per scb
CoPrecipitation Date	11/21/14
Person's name who witnessed reagent drop	nmn per scb
Analyst who added reagent	scb
SOP Number	ST-RC-0100, ST-RC-0242

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:52:18PM 12/1/2014

Sample

Sample Name: MB 160-158130/1-A Type: Blank
Spectrum #1 Analysis #1
: MB 160-158130/1-A
Sample Collection Date: 11/19/2014 11:29:00AM
Comment:

Sample Volume : 0.50 Sample Units: L
First Stage Dilution: N/A
Aliquot: N/A Aliquot Fraction: N/A
Dilution 2: N/A
Lab Preparation:

Batch

Batch Name: 158130
:
Description:

Client Name: Undefined
Client Contact:
Analyst: 60040

Tracer

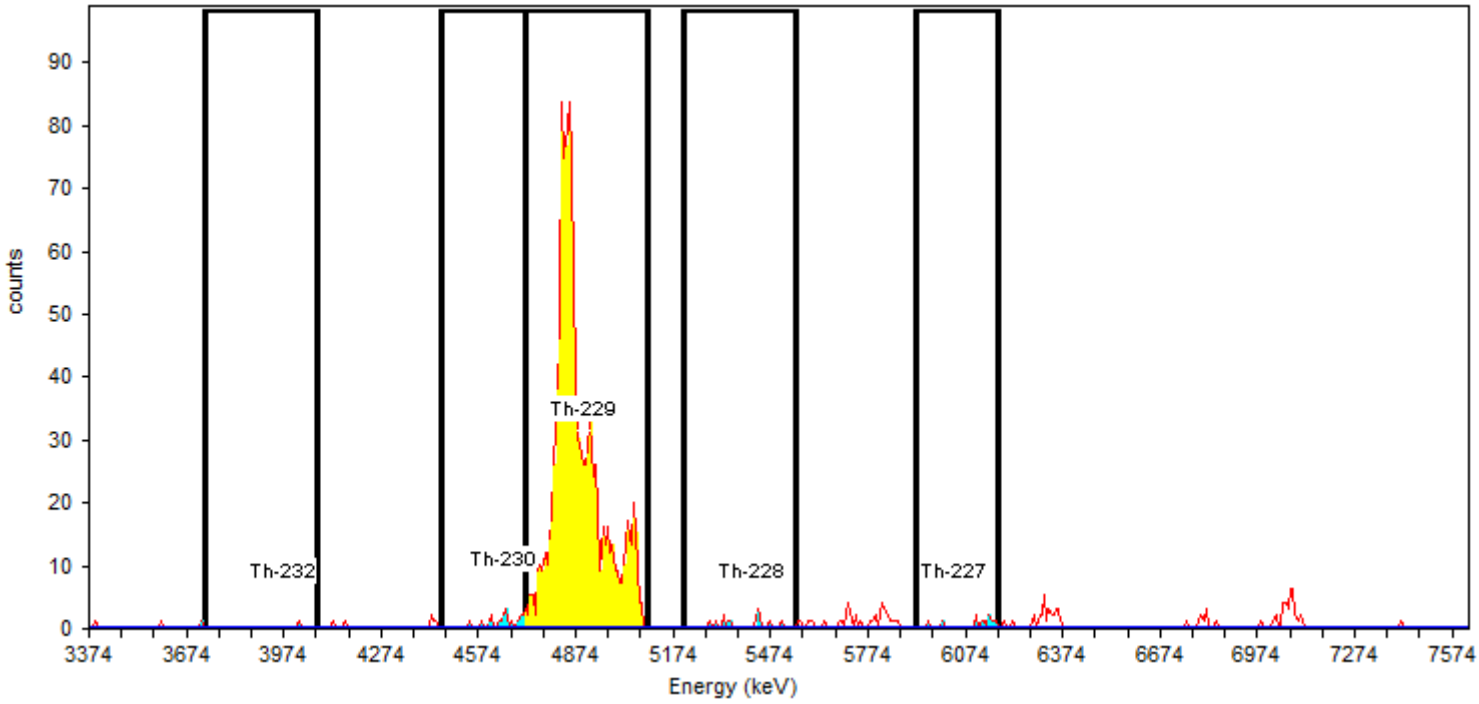
Tracer Name: Th-229_00018
Tracer Activity: 67.23 DPM / mL x (Vol.) 0.20 mL = 13.45 DPM
Tracer Ref. Date: 8/6/2014 4:36:53PM

Tracer Nuclide: Th-229
Tracer Recovery: 80.62%

Acquisition

Detector: AV165 SN: 50-112F7
Acquisition Start Date: 11/23/2014 10:34:19PM
Live Time: 400.00 min.
Real Time: 400.01 min.
Background Date: 11/18/2014 12:05:44AM
Bkgd Info: Sample: ICB;AV165; Det: AV165; Spectrum #1; 11/18/2014 12:05:44 AM

Energy Calibration: IC-8877;AV165-20140706
Efficiency Calibration:IC-8877;AV165-20140706
Calibration Date: 7/8/2014 5:48:08PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 26.55% +/- 0.32% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = ThoriumROI_Th227
Decay Correction:11/23/2014 10:32:30PM
MDA Constants: Kα = 1.64 , Kβ = 1.64

Nuclide Library: Thorium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
Th-232	3971.0	4,010.0	-39.0	3724.9	4075.4	44.5	100.2	1	0.8333	0.17	1.750E-003	pCi/L
Th-230	4649.7	4,687.5	-37.8	4455.8	4716.8	3.8	99.7	21	0.4167	20.58	2.173E-001	pCi/L
Th-229	4895.8	4,845.3	50.5	4716.8	5097.1	65.0	99.6	1147	0.0000	1147.00	9.766E+000	pCi/L
Th-228	5417.8	5,423.3	-5.5	5209.0	5552.0	145.0	99.8	13	7.9167	5.08	5.362E-002	pCi/L

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:52:23PM 12/1/2014

Sample

Sample Name: LCS 160-158130/2-A Type: Control
Spectrum #1 Analysis #1
: LCS 160-158130/2-A
Sample Collection Date: 11/19/2014 11:29:00AM
Comment:

Sample Volume : 0.50 Sample Units: L
First Stage Dilution: N/A
Aliquot: N/A Aliquot Fraction: N/A
Dilution 2: N/A
Lab Preparation:

Batch

Batch Name: 158130
:
Description:

Client Name: Undefined
Client Contact:
Analyst: 60040

Tracer

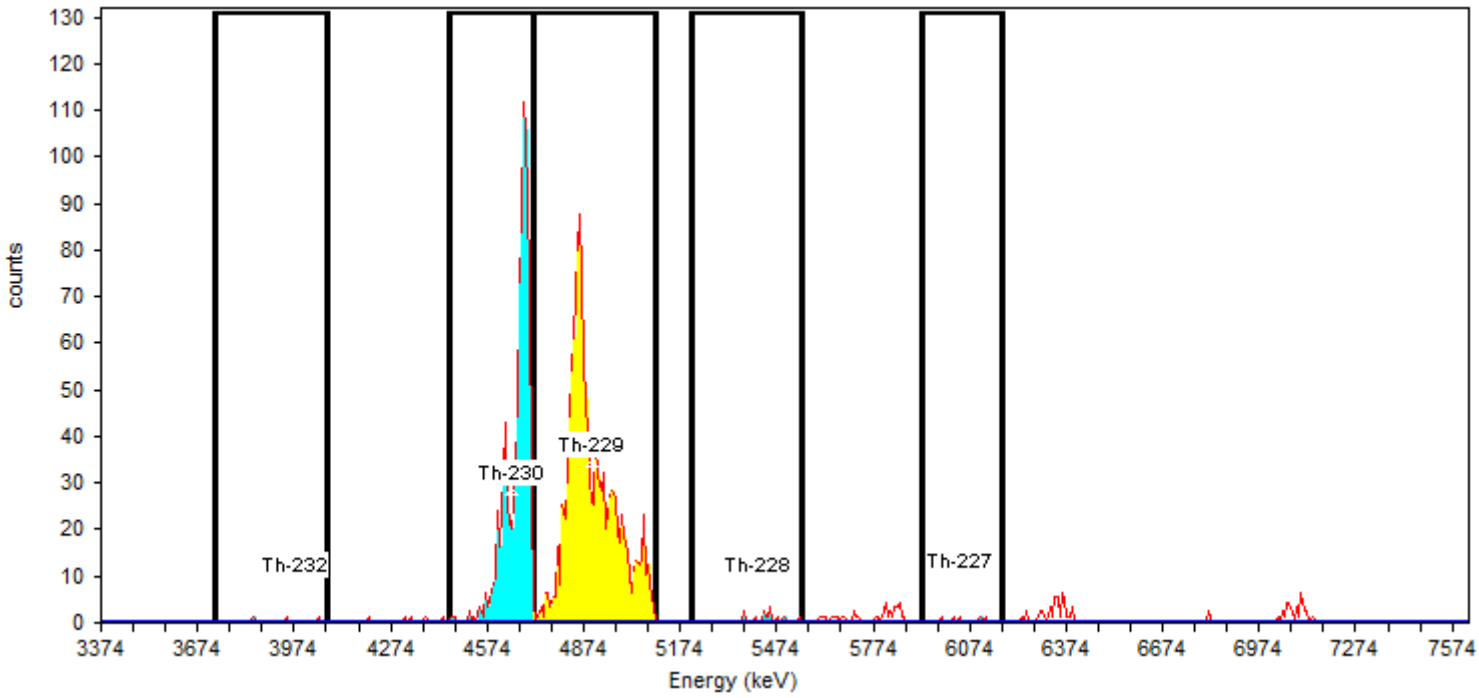
Tracer Name: Th-229_00018
Tracer Activity: 67.23 DPM / mL x (Vol.) 0.20 mL = 13.45 DPM
Tracer Ref. Date: 8/6/2014 4:36:53PM

Tracer Nuclide: Th-229
Tracer Recovery: 84.01%

Acquisition

Detector: AV168 SN: 50-113 G4
Acquisition Start Date: 11/23/2014 10:34:19PM
Live Time: 400.00 min.
Real Time: 400.00 min.
Background Date: 11/18/2014 12:05:45AM
Bkgd Info: Sample: ICB;AV168; Det: AV168; Spectrum #1; 11/18/2014 12:05:45 AM

Energy Calibration: IC-9793;AV168-20140706
Efficiency Calibration:IC-9793;AV168-20140706
Calibration Date: 7/6/2014 9:06:10PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 26.32% +/- 0.32% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = ThoriumROI_Th227
Decay Correction:11/23/2014 10:32:29PM
MDA Constants: Kα = 1.64 , Kβ = 1.64

Nuclide Library: Thorium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
Th-232	3971.0	4,010.0	-39.0	3724.9	4075.4	9.8	100.2	3	1.2500	1.75	1.779E-002	pCi/L
Th-230	4649.7	4,687.5	-37.8	4455.8	4716.8	31.1	99.7	782	0.0000	782.00	7.990E+000	pCi/L
Th-229	4895.8	4,845.3	50.5	4716.8	5097.1	64.9	99.6	1187	2.0833	1184.92	1.018E+001	pCi/L
Th-228	5417.8	5,423.3	-5.5	5209.0	5552.0	126.7	99.8	13	6.6667	6.33	6.467E-002	pCi/L

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THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:53:25PM 12/1/2014

Sample

Sample Name: 160-9451-G-1-A Type: Sample
Spectrum #1 Analysis #1
: 160-9451-G-1-A
Sample Collection Date: 11/14/2014 10:30:00AM
Comment:

Sample Volume : 0.05 Sample Units: L
First Stage Dilution: N/A
Aliquot: N/A Aliquot Fraction: N/A
Dilution 2: N/A
Lab Preparation:

Batch

Batch Name: 158130
:
Description:

Client Name: Undefined
Client Contact:
Analyst: 60040

Tracer

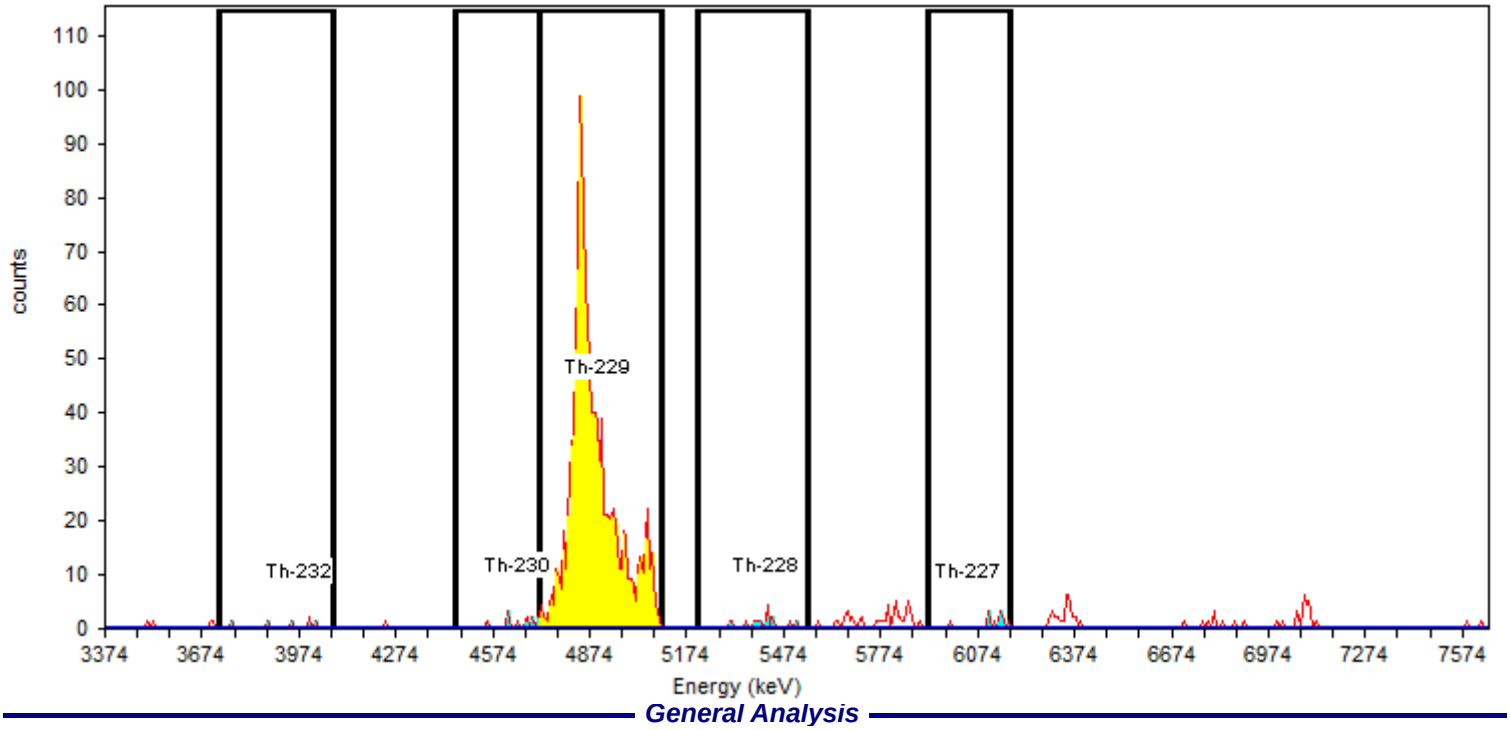
Tracer Name: Th-229_00018
Tracer Activity: 67.23 DPM / mL x (Vol.) 0.20 mL = 13.45 DPM
Tracer Ref. Date: 8/6/2014 4:36:53PM

Tracer Nuclide: Th-229
Tracer Recovery: 83.57%

Acquisition

Detector: AV174 SN: 50-112Y5
Acquisition Start Date: 11/23/2014 10:34:20PM
Live Time: 400.00 min.
Real Time: 400.02 min.
Background Date: 11/18/2014 12:05:45AM
Bkgd Info: Sample: ICB;AV174; Det: AV174; Spectrum #1; 11/18/2014 12:05:45 AM

Energy Calibration: IC-9886;AV174-20140706
Efficiency Calibration:IC-9886;AV174-20140706
Calibration Date: 7/6/2014 9:06:32PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 25.47% +/- 0.34% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = ThoriumROI_Th227
Decay Correction:11/23/2014 10:32:29PM
MDA Constants: Kα = 1.64 , Kβ = 1.64

Nuclide Library: Thorium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
Th-232	3971.0	4,010.0	-39.0	3724.9	4075.4	39.6	100.2	6	0.4167	5.58	5.869E-001	pCi/L
Th-230	4649.7	4,687.5	-37.8	4455.8	4716.8	173.8	99.7	14	1.2500	12.75	1.347E+000	pCi/L
Th-229	4895.8	4,845.3	50.5	4716.8	5097.1	77.8	99.6	1141	0.4167	1140.58	1.008E+002	pCi/L
Th-228	5417.8	5,423.3	-5.5	5209.0	5552.0	73.6	99.8	16	8.3333	7.67	8.094E-001	pCi/L

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:53:22PM 12/1/2014

Sample

Sample Name: 160-9451-G-2-A Type: Sample
Spectrum #1 Analysis #1
: 160-9451-G-2-A
Sample Collection Date: 11/14/2014 11:10:00AM
Comment:

Sample Volume : 0.05 Sample Units: L
First Stage Dilution: N/A
Aliquot: N/A Aliquot Fraction: N/A
Dilution 2: N/A
Lab Preparation:

Batch

Batch Name: 158130
:
Description:

Client Name: Undefined
Client Contact:
Analyst: 60040

Tracer

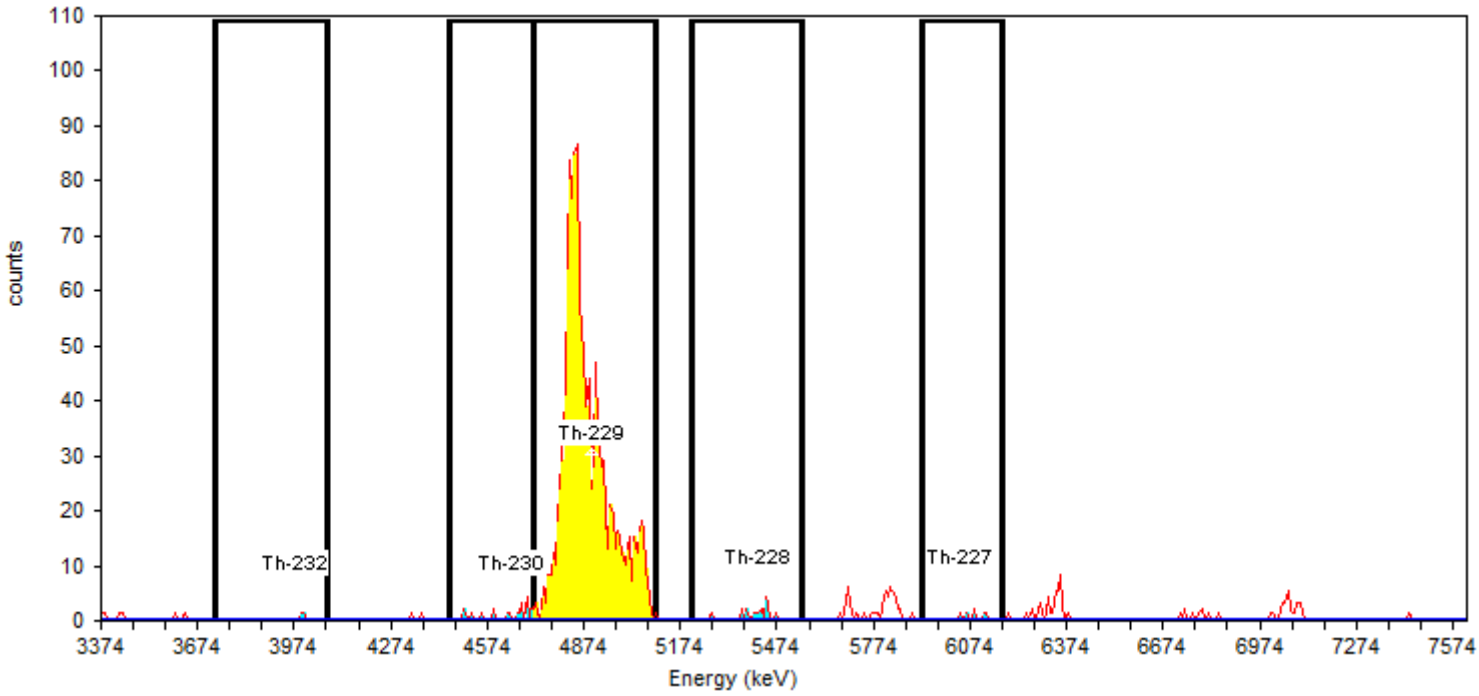
Tracer Name: Th-229_00018
Tracer Activity: 67.23 DPM / mL x (Vol.) 0.20 mL = 13.45 DPM
Tracer Ref. Date: 8/6/2014 4:36:53PM

Tracer Nuclide: Th-229
Tracer Recovery: 88.47%

Acquisition

Detector: AV176 SN: 50-117H2
Acquisition Start Date: 11/23/2014 10:34:21PM
Live Time: 400.00 min.
Real Time: 400.00 min.
Background Date: 11/18/2014 12:05:46AM
Bkgd Info: Sample: ICB;AV176; Det: AV176; Spectrum #1; 11/18/2014 12:05:46 AM

Energy Calibration: IC-8874;AV176-20140706
Efficiency Calibration:IC-8874;AV176-20140706
Calibration Date: 7/6/2014 9:06:39PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 26.63% +/- 0.38% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = ThoriumROI_Th227
Decay Correction:11/23/2014 10:32:29PM
MDA Constants: Kα = 1.64 , Kβ = 1.64

Nuclide Library: Thorium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
Th-232	3971.0	4,010.0	-39.0	3724.9	4075.4	44.6	100.2	2	0.8333	1.17	1.109E-001	pCi/L
Th-230	4649.7	4,687.5	-37.8	4455.8	4716.8	24.4	99.7	21	0.0000	21.00	2.007E+000	pCi/L
Th-229	4895.8	4,845.3	50.5	4716.8	5097.1	71.2	99.6	1263	0.4167	1262.58	1.068E+002	pCi/L
Th-228	5417.8	5,423.3	-5.5	5209.0	5552.0	49.2	99.8	18	3.3333	14.67	1.401E+000	pCi/L

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THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:53:20PM 12/1/2014

Sample

Sample Name: 160-9451-H-3-A Type: Sample
Spectrum #1 Analysis #1
: 160-9451-H-3-A
Sample Collection Date: 11/14/2014 11:45:00AM
Comment:

Sample Volume : 0.10 Sample Units: L
First Stage Dilution: N/A
Aliquot: N/A Aliquot Fraction: N/A
Dilution 2: N/A
Lab Preparation:

Batch

Batch Name: 158130
:
Description:

Client Name: Undefined
Client Contact:
Analyst: 60040

Tracer

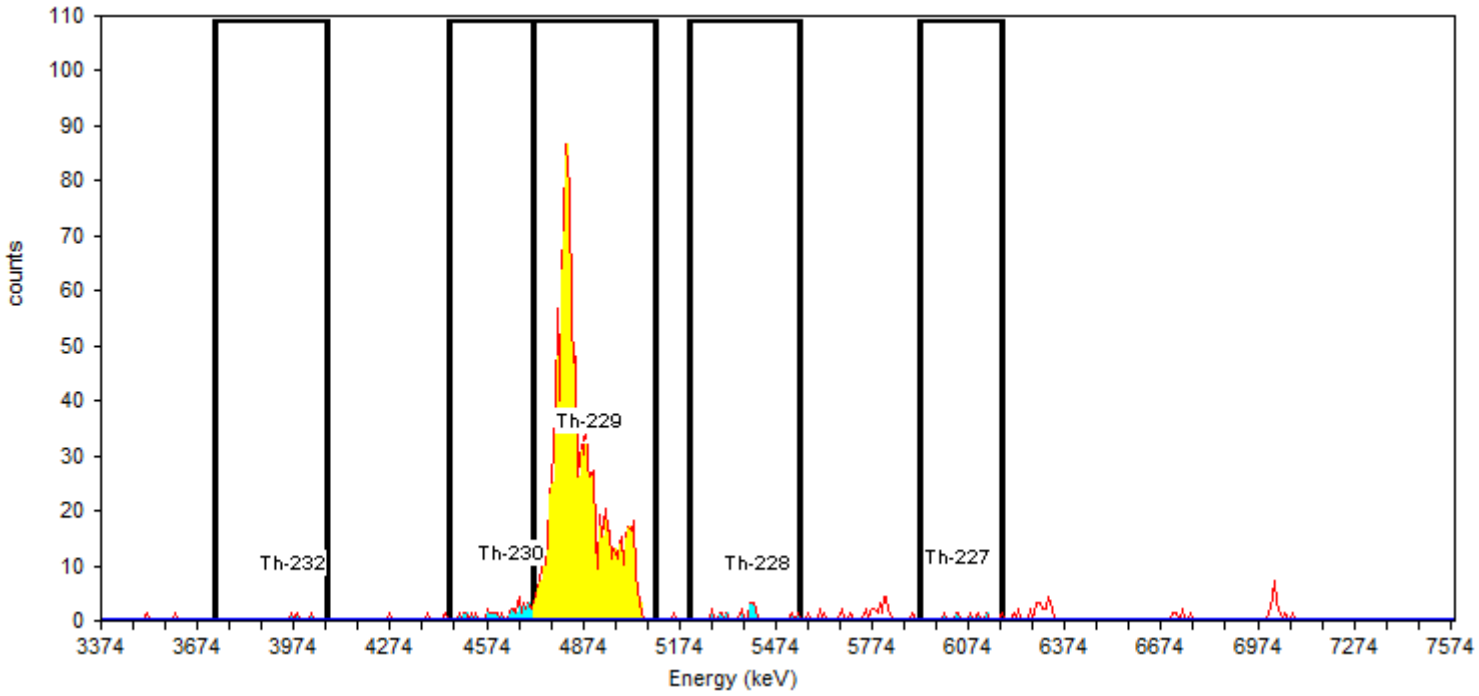
Tracer Name: Th-229_00018
Tracer Activity: 67.23 DPM / mL x (Vol.) 0.20 mL = 13.45 DPM
Tracer Ref. Date: 8/6/2014 4:36:53PM

Tracer Nuclide: Th-229
Tracer Recovery: 85.70%

Acquisition

Detector: AV177 SN: 50-117H3
Acquisition Start Date: 11/23/2014 10:34:21PM
Live Time: 400.00 min.
Real Time: 400.00 min.
Background Date: 11/18/2014 12:05:47AM
Bkgd Info: Sample: ICB;AV177; Det: AV177; Spectrum #1; 11/18/2014 12:05:47 AM

Energy Calibration: IC-8875;AV177-20140706
Efficiency Calibration:IC-8875;AV177-20140706
Calibration Date: 7/6/2014 9:06:44PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 25.29% +/- 0.35% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = ThoriumROI_Th227
Decay Correction:11/23/2014 10:32:29PM
MDA Constants: Kα = 1.64 , Kβ = 1.64

Nuclide Library: Thorium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
Th-232	3971.0	4,010.0	-39.0	3724.9	4075.4	44.4	100.2	3	0.0000	3.00	1.554E-001	pCi/L
Th-230	4649.7	4,687.5	-37.8	4455.8	4716.8	25.6	99.7	36	0.4167	35.58	1.852E+000	pCi/L
Th-229	4895.8	4,845.3	50.5	4716.8	5097.1	73.3	99.6	1162	0.4167	1161.58	5.184E+001	pCi/L
Th-228	5417.8	5,423.3	-5.5	5209.0	5552.0	48.3	99.8	17	8.7500	8.25	4.292E-001	pCi/L

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:53:17PM 12/1/2014

Sample

Sample Name: 160-9451-H-4-A Type: Sample
Spectrum #1 Analysis #1
: 160-9451-H-4-A
Sample Collection Date: 11/14/2014 12:45:00PM
Comment:

Sample Volume : 0.50 Sample Units: L
First Stage Dilution: N/A
Aliquot: N/A Aliquot Fraction: N/A
Dilution 2: N/A
Lab Preparation:

Batch

Batch Name: 158130
:
Description:

Client Name: Undefined
Client Contact:
Analyst: 60040

Tracer

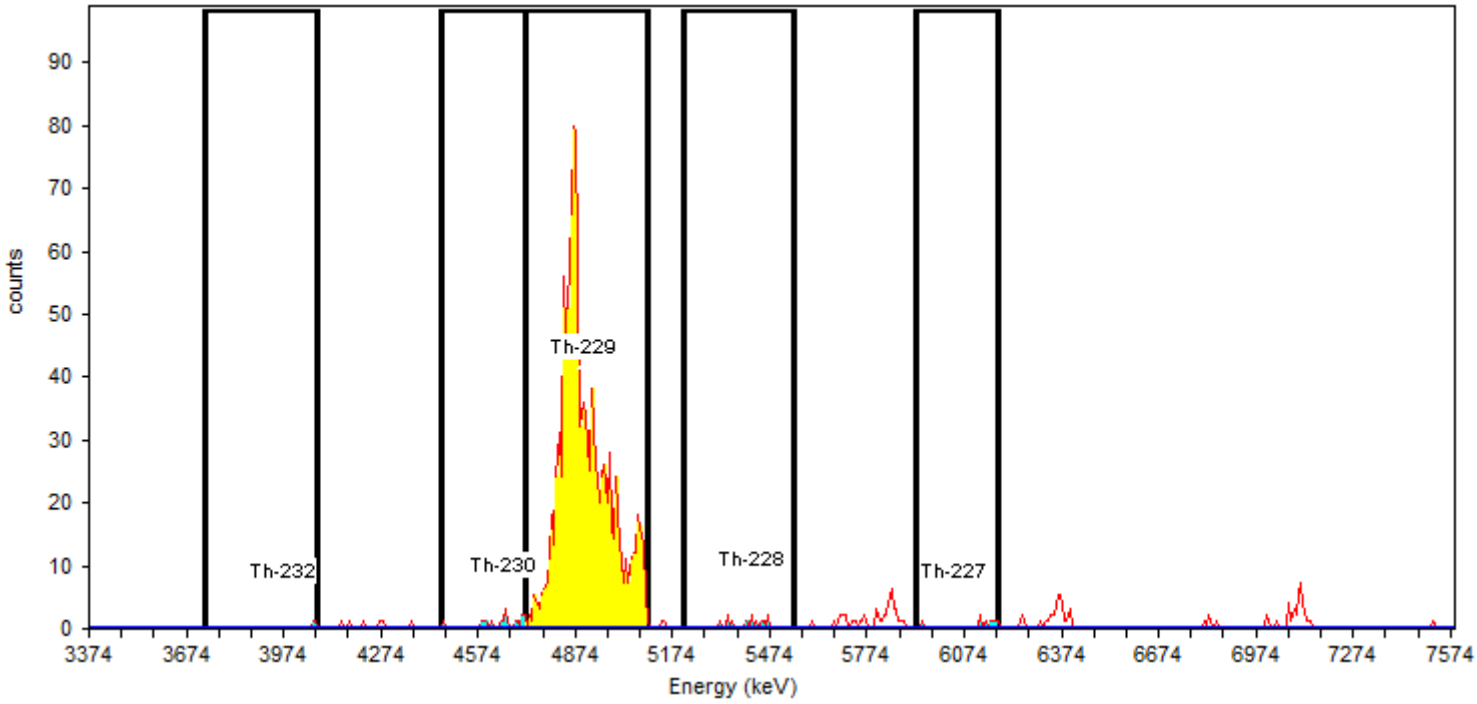
Tracer Name: Th-229_00018
Tracer Activity: 67.23 DPM / mL x (Vol.) 0.20 mL = 13.45 DPM
Tracer Ref. Date: 8/6/2014 4:36:53PM

Tracer Nuclide: Th-229
Tracer Recovery: 82.53%

Acquisition

Detector: AV178 SN: 50-117H4
Acquisition Start Date: 11/23/2014 10:34:21PM
Live Time: 400.00 min.
Real Time: 400.01 min.
Background Date: 11/18/2014 12:05:47AM
Bkgd Info: Sample: ICB;AV178; Det: AV178; Spectrum #1; 11/18/2014 12:05:47 AM

Energy Calibration: IC-8876;AV178-20140706
Efficiency Calibration:IC-8876;AV178-20140706
Calibration Date: 7/6/2014 9:06:47PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 25.92% +/- 0.30% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = ThoriumROI_Th227
Decay Correction:11/23/2014 10:32:29PM
MDA Constants: Kα = 1.64 , Kβ = 1.64

Nuclide Library: Thorium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
Th-232	3971.0	4,010.0	-39.0	3724.9	4075.4	15.5	100.2	2	1.6667	0.33	3.495E-003	pCi/L
Th-230	4649.7	4,687.5	-37.8	4455.8	4716.8	.0	99.7	17	0.4167	16.58	1.748E-001	pCi/L
Th-229	4895.8	4,845.3	50.5	4716.8	5097.1	72.5	99.6	1147	0.4167	1146.58	9.978E+000	pCi/L
Th-228	5417.8	5,423.3	-5.5	5209.0	5552.0	156.9	99.8	12	3.3333	8.67	9.128E-002	pCi/L

Method A-01-R U

Isotopic Uranium (Alpha Spectrometry) by Method A-01-R

Prep Batch: 158134

Preparation, Extraction Chromatography Resin Actinide Separation

Alpha Spectroscopy Analysis Detail Report
Prep Batch: 158134

Lab ID: MB 160-158134/1-A
Client ID:
Sigma: 2
Analyzed: 11/21/14 16:13
Detector: AV181
Dil Fac: 1
Decay Corrected: No
Yield Truncated: No
Ts: 400

Analyte	MB Result	Count Unc	Total Unc	Qualifier	Unit	RL	MDC	Anly Batch
Uranium-233/234	0.03001	0.0347	0.0347		pCi/L	1.00	0.0300	158845
Uranium-235/236	-0.01556	0.0180	0.0180	U	pCi/L	1.00	0.0919	158845
Uranium-238	0.02330	0.0433	0.0433	U	pCi/L	1.00	0.0804	158845

Tracer	MB Result	Count Unc	Total Unc	Qualifier	Unit	MDC	Spike Added	% Rec	% Rec Limits
Uranium-232	12.37	0.653	1.23		pCi/L	0.0634	14.8	86.1	30 - 110

Lab ID: LCS 160-158134/2-A
Client ID:
Sigma: 2
Analyzed: 11/21/14 16:13
Detector: AV182
Dil Fac: 1
Decay Corrected: No
Yield Truncated: No
Ts: 400

Analyte	LCS Result	Count Unc	Total Unc	Qualifier	Unit	RL	MDC	Anly Batch
Uranium-233/234	13.50	0.801	1.39		pCi/L	1.00	0.0875	158846
Uranium-238	13.79	0.808	1.41		pCi/L	1.00	0.0654	158846

Tracer	LCS Result	Count Unc	Total Unc	Qualifier	Unit	MDC	Spike Added	% Rec	% Rec Limits
Uranium-232	10.46	0.602	1.06		pCi/L	0.0911	14.8	72.8	30 - 110

Lab ID: 160-9451-1
Client ID: BG03-20141114-21
Sigma: 2
Analyzed: 11/21/14 16:13
Detector: AV189
Dil Fac: 1
Decay Corrected: No
Yield Truncated: No
Ts: 400

Analyte	Result	Count Unc	Total Unc	Qualifier	Unit	RL	MDC	Anly Batch
Uranium-233/234	1.91	0.953	0.966		pCi/L	1.00	0.635	158850
Uranium-235/236	0.000	0.119	0.119	U	pCi/L	1.00	0.429	158850
Uranium-238	1.05	0.738	0.743		pCi/L	1.00	0.754	158850

Tracer	Result	Count Unc	Total Unc	Qualifier	Unit	MDC	Spike Added	% Rec	% Rec Limits
Uranium-232	103	5.86	10.5		pCi/L	0.717	147	72.3	30 - 110

Lab ID: 160-9451-2
Client ID: BG04-20141114-21
Sigma: 2
Analyzed: 11/21/14 16:13
Detector: AV190
Dil Fac: 1
Decay Corrected: No
Yield Truncated: No
Ts: 400

Analyte	Result	Count Unc	Total Unc	Qualifier	Unit	RL	MDC	Anly Batch
Uranium-233/234	2.57	1.12	1.14		pCi/L	1.00	0.835	158851
Uranium-235/236	0.141	0.282	0.282	U	pCi/L	1.00	0.422	158851
Uranium-238	0.649	0.619	0.622	U	pCi/L	1.00	0.833	158851

Alpha Spectroscopy Analysis Detail Report
Prep Batch: 158134

Lab ID: 160-9451-2
Client ID: BG04-20141114-21
Sigma: 2
Analyzed: 11/21/14 16:13
Detector: AV190
Dil Fac: 1
Decay Corrected: No
Yield Truncated: No
Ts: 400

Tracer	Result	Count Unc	Total Unc	Qualifier	Unit	MDC	Spike Added	% Rec	% Rec Limits
Uranium-232	107	5.99	10.8		pCi/L	0.813	148	74.4	30 - 110

Lab ID: 160-9451-3
Client ID: BG05-20141114-21
Sigma: 2
Analyzed: 11/21/14 16:13
Detector: AV191
Dil Fac: 1
Decay Corrected: No
Yield Truncated: No
Ts: 400

Analyte	Result	Count Unc	Total Unc	Qualifier	Unit	RL	MDC	Anly Batch
Uranium-233/234	6.71	1.19	1.31		pCi/L	1.00	0.289	158852
Uranium-235/236	0.325	0.290	0.292		pCi/L	1.00	0.195	158852
Uranium-238	4.51	0.973	1.04		pCi/L	1.00	0.288	158852

Tracer	Result	Count Unc	Total Unc	Qualifier	Unit	MDC	Spike Added	% Rec	% Rec Limits
Uranium-232	60.0	3.24	5.99		pCi/L	0.422	74.0	83.6	30 - 110

Lab ID: 160-9451-4
Client ID: N1-20141114-21
Sigma: 2
Analyzed: 11/21/14 16:13
Detector: AV192
Dil Fac: 1
Decay Corrected: No
Yield Truncated: No
Ts: 400

Analyte	Result	Count Unc	Total Unc	Qualifier	Unit	RL	MDC	Anly Batch
Uranium-233/234	0.0919	0.0648	0.0653		pCi/L	1.00	0.0592	158853
Uranium-235/236	0.0400	0.0461	0.0463		pCi/L	1.00	0.0400	158853
Uranium-238	0.0534	0.0478	0.0480		pCi/L	1.00	0.0321	158853

Tracer	Result	Count Unc	Total Unc	Qualifier	Unit	MDC	Spike Added	% Rec	% Rec Limits
Uranium-232	11.4	0.625	1.15		pCi/L	0.0737	14.8	79.8	30 - 110

Quality Control Summary

Method Blank ID:	Analyte	Parent Result	Spike Added	MB Result	Qualifier	Unit	% Rec	% Rec Limits	RPD	RER	DER	RER Limit	Z Factor
MB 160-158134/1-A	Uranium-233/234			0.03001		pCi/L							
MB 160-158134/1-A	Uranium-235/236			-0.01556	U	pCi/L							
MB 160-158134/1-A	Uranium-238			0.02330	U	pCi/L							

Lab Control Sample ID:	Analyte	Parent Result	Spike Added	LCS Result	Qualifier	Unit	% Rec	% Rec Limits	RPD	RER	DER	RER Limit	Z Factor
LCS 160-158134/2-A	Uranium-233/234		12.7	13.50		pCi/L	106	84 - 120					
LCS 160-158134/2-A	Uranium-238		13.0	13.79		pCi/L	106	83 - 121					

Alpha Spectroscopy Analysis Detail Report
Prep Batch: 158134

Glossary:

Ts = Count Duration, Sample

ALPHA SPECTROSCOPY BATCH WORKSHEET

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Batch Number: 158134 Batch Start Date: 11/19/14 11:22 Batch Analyst: Bernsen, Sarah C

Batch Method: ExtChrom Batch End Date: 11/21/14 08:54

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	U-232 00028	UNAT 00009			
MB 160-158134/1		ExtChrom, A-01-R		500 mL	0.2 mL				
LCS 160-158134/2		ExtChrom, A-01-R		500 mL	0.2 mL	0.2 mL			
160-9451-G-1	BG03-20141114-21	ExtChrom, A-01-R	T	50.24 mL	0.2 mL				
160-9451-G-2	BG04-20141114-21	ExtChrom, A-01-R	T	50.17 mL	0.2 mL				
160-9451-H-3	BG05-20141114-21	ExtChrom, A-01-R	T	100.12 mL	0.2 mL				
160-9451-H-4	N1-20141114-21	ExtChrom, A-01-R	T	500.97 mL	0.2 mL				

Batch Notes	
Balance ID	1125353055
Column Analyst	nmn per scb
Column Date	11/20/14
CoPrecipitation Analyst	mfm per scb
CoPrecipitation Date	11/21/14
Person's name who witnessed reagent drop	nmn per scb
Analyst who added reagent	scb
SOP Number	ST-RC-0100, ST-RC-0242

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
10:53:34PM 11/21/2014

Sample

Sample Name: MB 160-158134/1-A Type: Blank
Spectrum #1 Analysis #1
: MB 160-158134/1-A
Sample Collection Date: 11/19/2014 11:30:00AM
Comment:

Sample Volume : 0.50 Sample Units: L
First Stage Dilution: N/A
Aliquot: N/A Aliquot Fraction: N/A
Dilution 2: N/A
Lab Preparation:

Batch

Batch Name: 158134
:
Description:

Client Name: Undefined
Client Contact:
Analyst: 60040

Tracer

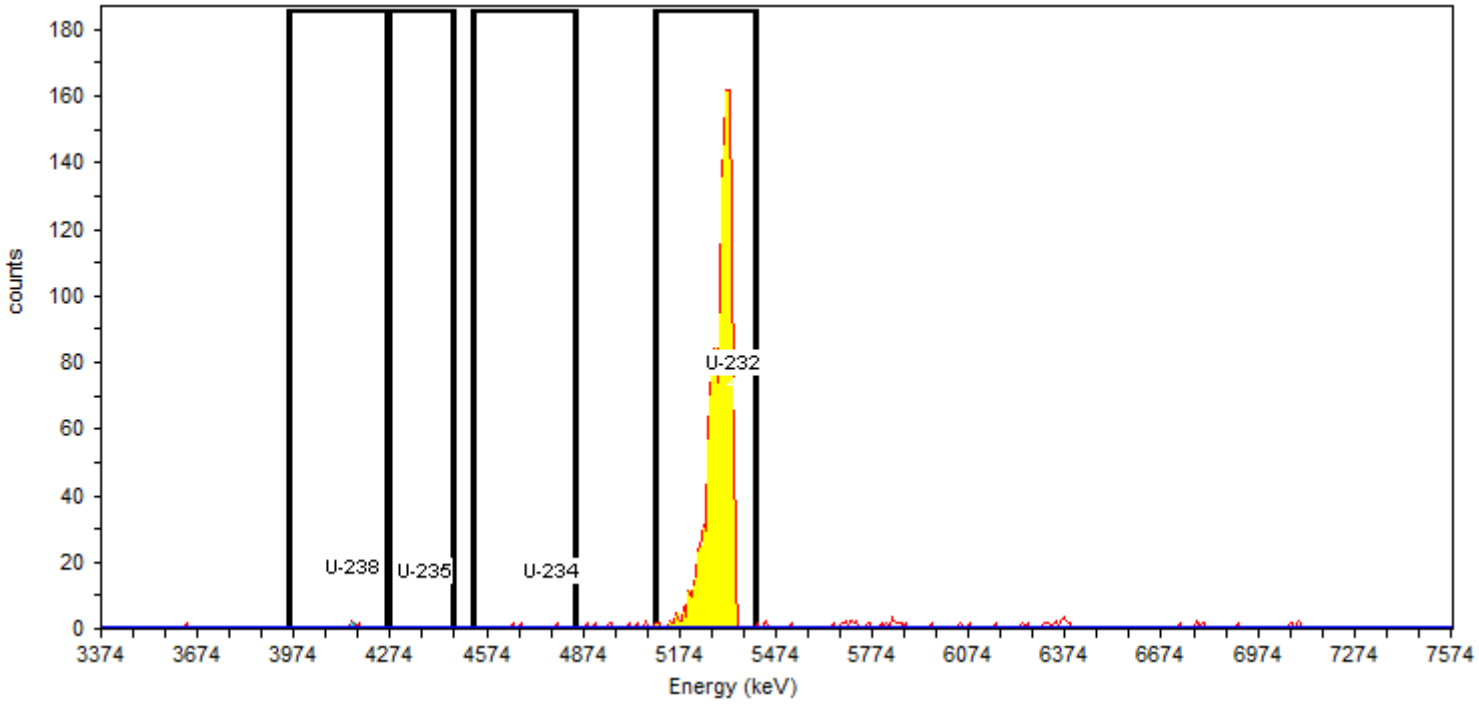
Tracer Name: U-232_00028
Tracer Activity: 82.25 DPM / mL x (Vol.) 0.20 mL = 16.45 DPM
Tracer Ref. Date: 8/25/2011 9:04:33PM

Tracer Nuclide: U-232
Tracer Recovery: 86.14%

Acquisition

Detector: AV181 SN: 50-110X1
Acquisition Start Date: 11/21/2014 4:13:21PM
Live Time: 400.00 min.
Real Time: 400.00 min.
Background Date: 11/18/2014 12:05:48AM
Bkgd Info: Sample: ICB;AV181; Det: AV181; Spectrum #1; 11/18/2014 12:05:48 AM

Energy Calibration: IC-9792;AV181-20140702
Efficiency Calibration:IC-9792;AV181-20140702
Calibration Date: 7/6/2014 6:16:08PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 26.19% +/- 0.31% TPU(2 sigma)



General Analysis

Analysis Method: ROI Analysis, Set Name = UROI
Decay Correction:11/21/2014 4:12:15PM
MDA Constants: Kα = 1.64 , Kβ = 1.64

Nuclide Library: Uranium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
U-238	4157.5	4,196.0	-38.5	3956.1	4261.9	42.2	100.0	4	1.6667	2.33	2.330E-002	pCi/L
U-235	4381.2	4,396.0	-14.8	4269.3	4470.7	.0	80.2	0	1.2500	-1.25	-1.556E-002	pCi/L
U-234	4776.4	4,775.8	0.6	4530.3	4851.0	40.6	99.8	3	0.0000	3.00	3.001E-002	pCi/L
U-232	5343.2	5,320.3	22.9	5097.1	5410.3	64.2	100.1	1441	1.2500	1439.75	1.276E+001	pCi/L

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
10:53:23PM 11/21/2014

Sample

Sample Name: LCS 160-158134/2-A Type: Control
Spectrum #1 Analysis #1
: LCS 160-158134/2-A
Sample Collection Date: 11/19/2014 11:30:00AM
Comment:

Sample Volume : 0.50 Sample Units: L
First Stage Dilution: N/A
Aliquot: N/A Aliquot Fraction: N/A
Dilution 2: N/A
Lab Preparation:

Batch

Batch Name: 158134
:
Description:

Client Name: Undefined
Client Contact:
Analyst: 60040

Tracer

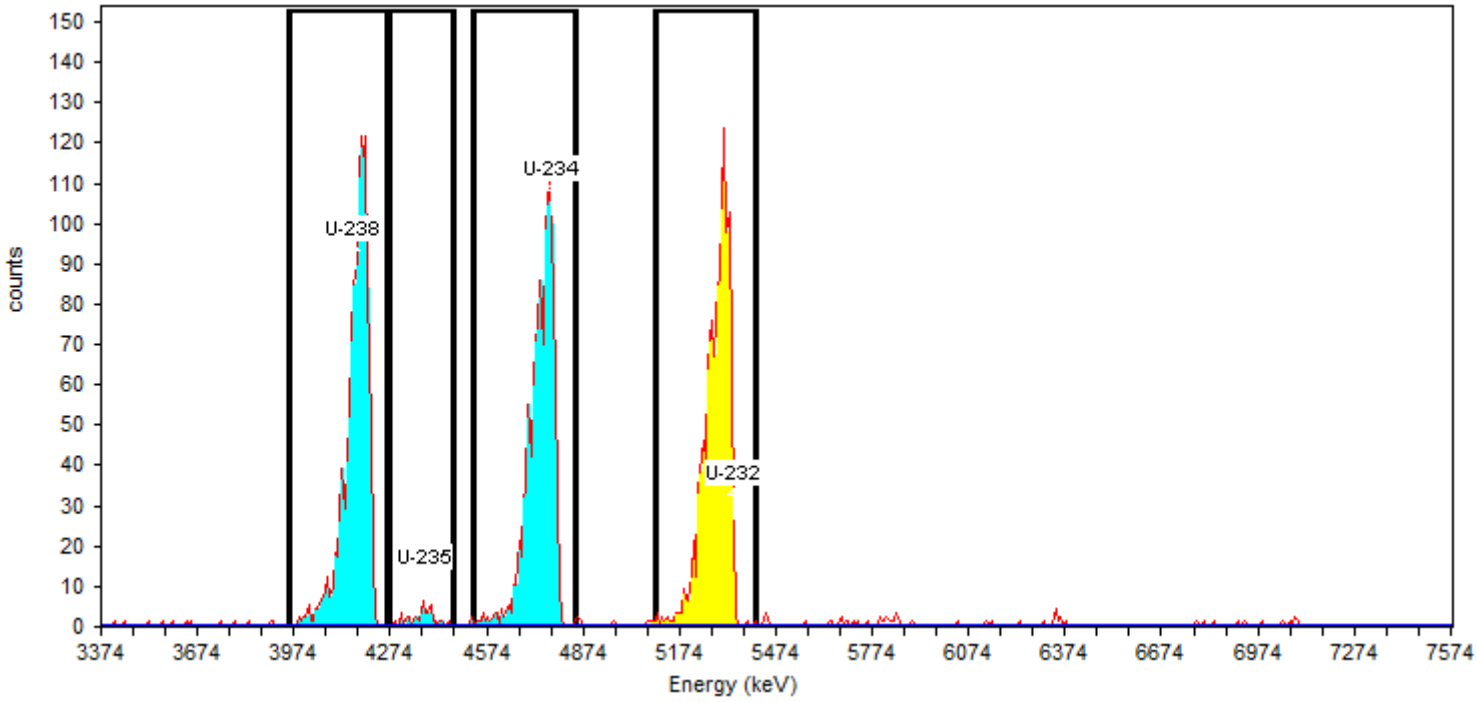
Tracer Name: U-232_00028
Tracer Activity: 82.25 DPM / mL x (Vol.) 0.20 mL = 16.45 DPM
Tracer Ref. Date: 8/25/2011 9:04:33PM

Tracer Nuclide: U-232
Tracer Recovery: 72.80%

Acquisition

Detector: AV182 SN: 50-110X6
Acquisition Start Date: 11/21/2014 4:13:21PM
Live Time: 400.00 min.
Real Time: 400.00 min.
Background Date: 11/18/2014 5:54:38PM
Bkgd Info: Sample: ICB;AV182; Det: AV182; Spectrum #1; 11/18/2014 5:54:38 PM

Energy Calibration: IC-9793;AV182-20140702
Efficiency Calibration:IC-9793;AV182-20140702
Calibration Date: 7/6/2014 6:16:24PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 26.13% +/- 0.32% TPU(2 sigma)



General Analysis

Analysis Method: ROI Analysis, Set Name = UROI
Decay Correction:11/21/2014 4:12:13PM
MDA Constants: Kα = 1.64 , Kβ = 1.64

Nuclide Library: Uranium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
U-238	4157.5	4,196.0	-38.5	3956.1	4261.9	63.8	100.0	1165	0.4167	1164.58	1.379E+001	pCi/L
U-235	4381.2	4,396.0	-14.8	4269.3	4470.7	41.2	80.2	37	0.4167	36.58	5.400E-001	pCi/L
U-234	4776.4	4,775.8	0.6	4530.3	4851.0	81.6	99.8	1139	1.2500	1137.75	1.350E+001	pCi/L
U-232	5343.2	5,320.3	22.9	5097.1	5410.3	83.3	100.1	1218	3.7500	1214.25	1.079E+001	pCi/L

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
10:53:37PM 11/21/2014

Sample

Sample Name: 160-9451-G-1-B Type: Sample
Spectrum #1 Analysis #1
: 160-9451-G-1-B
Sample Collection Date: 11/14/2014 10:30:00AM
Comment:

Sample Volume : 0.05 Sample Units: L
First Stage Dilution: N/A
Aliquot: N/A Aliquot Fraction: N/A
Dilution 2: N/A
Lab Preparation:

Batch

Batch Name: 158134
:
Description:

Client Name: Undefined
Client Contact:
Analyst: 60040

Tracer

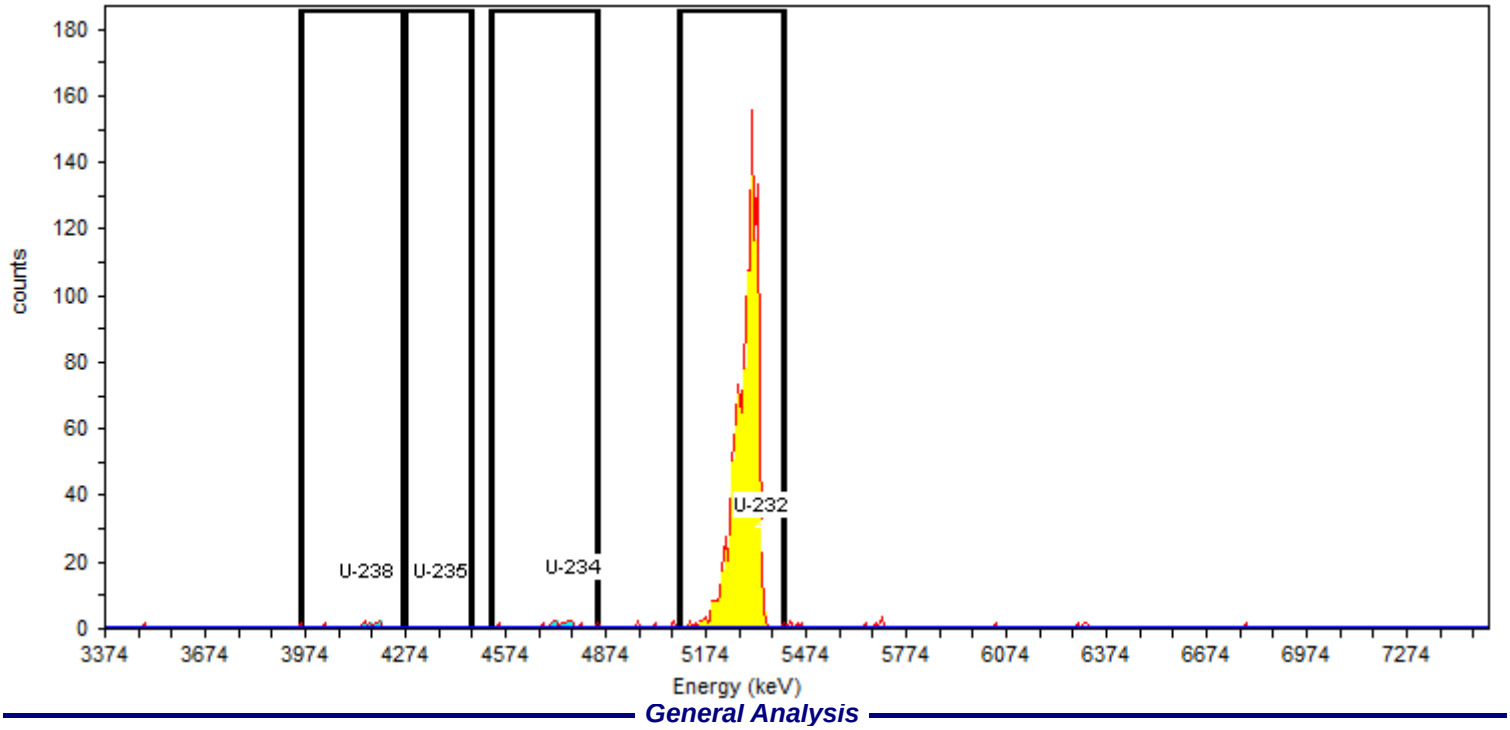
Tracer Name: U-232_00028
Tracer Activity: 82.25 DPM / mL x (Vol.) 0.20 mL = 16.45 DPM
Tracer Ref. Date: 8/25/2011 9:04:33PM

Tracer Nuclide: U-232
Tracer Recovery: 72.32%

Acquisition

Detector: AV189 SN: 50-112A3
Acquisition Start Date: 11/21/2014 4:13:22PM
Live Time: 400.00 min.
Real Time: 400.00 min.
Background Date: 11/18/2014 12:05:48AM
Bkgd Info: Sample: ICB;AV189; Det: AV189; Spectrum #1; 11/18/2014 12:05:48 AM

Energy Calibration: IC-7107;AV189-20140702
Efficiency Calibration:IC-7107;AV189-20140702
Calibration Date: 7/2/2014 12:04:46PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 27.01% +/- 0.30% TPU(2 sigma)



General Analysis

Analysis Method: ROI Analysis, Set Name = UROI
Decay Correction:11/21/2014 4:12:13PM
MDA Constants: Kα = 1.64 , Kβ = 1.64

Nuclide Library: Uranium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
U-238	4157.5	4,196.0	-38.5	3956.1	4261.9	73.0	100.0	10	0.8333	9.17	1.052E+000	pCi/L
U-235	4381.2	4,396.0	-14.8	4269.3	4470.7	.0	80.2	0	0.0000	0.00	0.000E+000	pCi/L
U-234	4776.4	4,775.8	0.6	4530.3	4851.0	149.3	99.8	17	0.4167	16.58	1.907E+000	pCi/L
U-232	5343.2	5,320.3	22.9	5097.1	5410.3	67.6	100.1	1249	2.0833	1246.92	1.067E+002	pCi/L

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
10:53:42PM 11/21/2014

Sample

Sample Name: 160-9451-G-2-B Type: Sample
Spectrum #1 Analysis #1
: 160-9451-G-2-B
Sample Collection Date: 11/14/2014 11:10:00AM
Comment:

Sample Volume : 0.05 Sample Units: L
First Stage Dilution: N/A
Aliquot: N/A Aliquot Fraction: N/A
Dilution 2: N/A
Lab Preparation:

Batch

Batch Name: 158134
:
Description:

Client Name: Undefined
Client Contact:
Analyst: 60040

Tracer

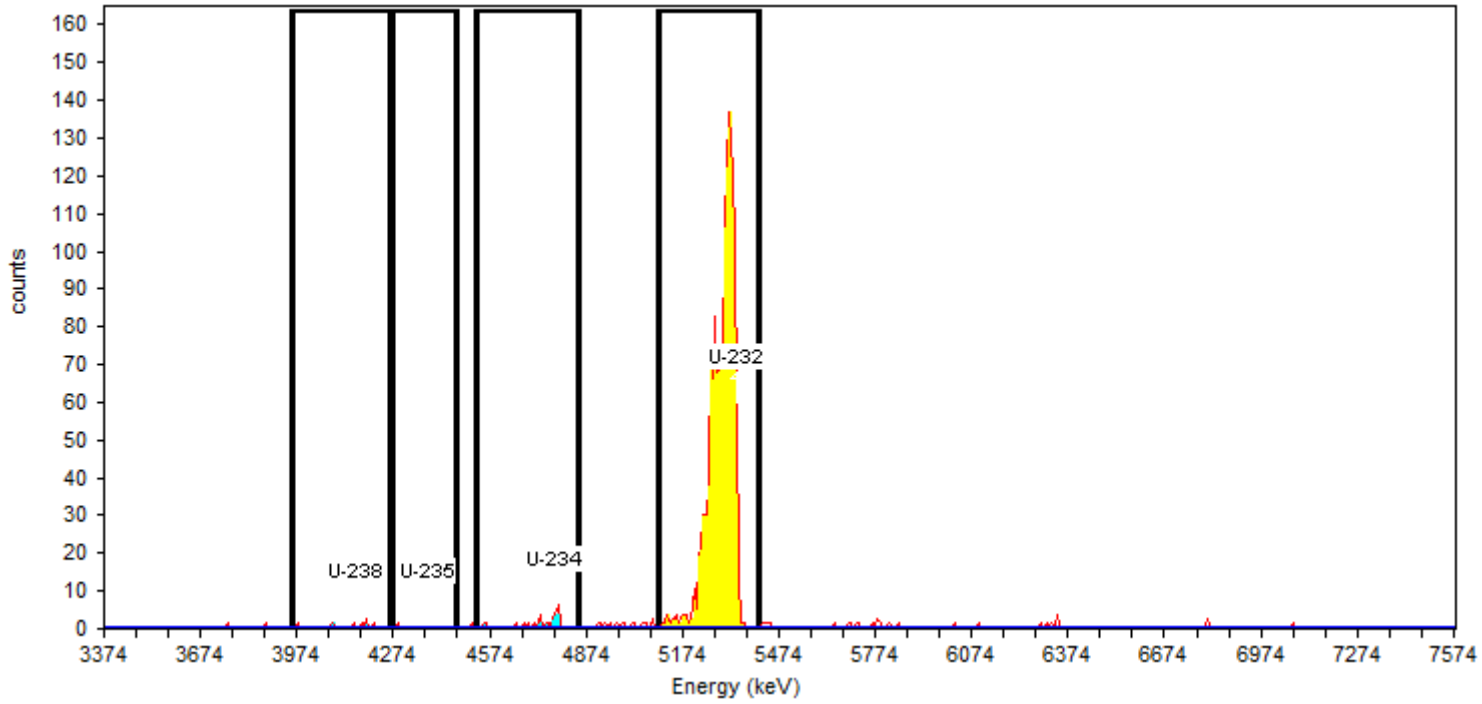
Tracer Name: U-232_00028
Tracer Activity: 82.25 DPM / mL x (Vol.) 0.20 mL = 16.45 DPM
Tracer Ref. Date: 8/25/2011 9:04:33PM

Tracer Nuclide: U-232
Tracer Recovery: 74.41%

Acquisition

Detector: AV190 SN: 50-119I7
Acquisition Start Date: 11/21/2014 4:13:22PM
Live Time: 400.00 min.
Real Time: 400.00 min.
Background Date: 11/18/2014 12:05:50AM
Bkgd Info: Sample: ICB;AV190; Det: AV190; Spectrum #1; 11/18/2014 12:05:50 AM

Energy Calibration: IC-8874;AV190-20140702
Efficiency Calibration:IC-8874;AV190-20140702
Calibration Date: 7/2/2014 12:04:50PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 26.72% +/- 0.38% TPU(2 sigma)



General Analysis

Analysis Method: ROI Analysis, Set Name = UROI
Decay Correction:11/21/2014 4:12:13PM
MDA Constants: Kα = 1.64 , Kβ = 1.64

Nuclide Library: Uranium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
U-238	4157.5	4,196.0	-38.5	3956.1	4261.9	247.4	100.0	7	1.2500	5.75	6.491E-001	pCi/L
U-235	4381.2	4,396.0	-14.8	4269.3	4470.7	20.4	80.2	1	0.0000	1.00	1.408E-001	pCi/L
U-234	4776.4	4,775.8	0.6	4530.3	4851.0	48.8	99.8	24	1.2500	22.75	2.573E+000	pCi/L
U-232	5343.2	5,320.3	22.9	5097.1	5410.3	81.2	100.1	1272	2.9167	1269.08	1.099E+002	pCi/L

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
10:53:43PM 11/21/2014

Sample

Sample Name: 160-9451-H-3-B Type: Sample
Spectrum #1 Analysis #1
: 160-9451-H-3-B
Sample Collection Date: 11/14/2014 11:45:00AM
Comment:

Sample Volume : 0.10 Sample Units: L
First Stage Dilution: N/A
Aliquot: N/A Aliquot Fraction: N/A
Dilution 2: N/A
Lab Preparation:

Batch

Batch Name: 158134
:
Description:

Client Name: Undefined
Client Contact:
Analyst: 60040

Tracer

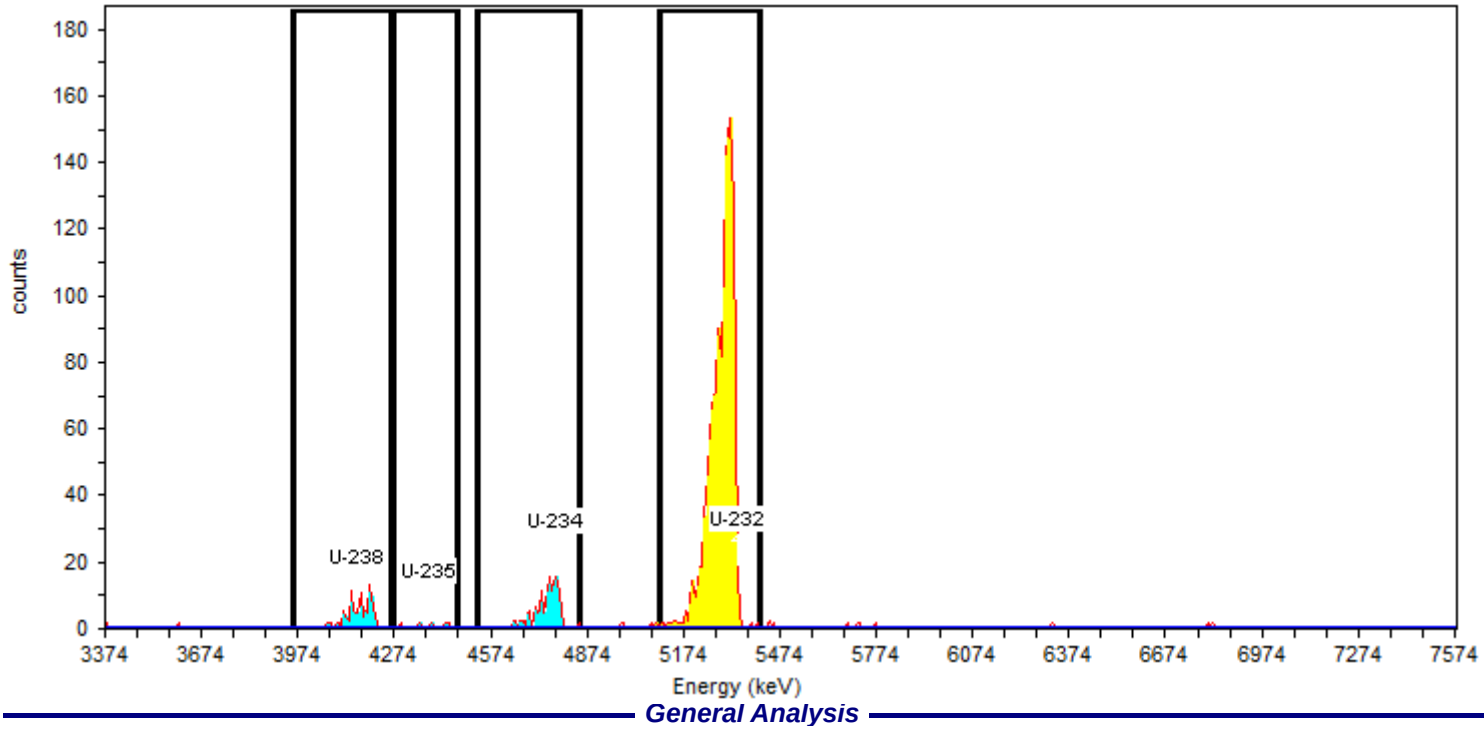
Tracer Name: U-232_00028
Tracer Activity: 82.25 DPM / mL x (Vol.) 0.20 mL = 16.45 DPM
Tracer Ref. Date: 8/25/2011 9:04:33PM

Tracer Nuclide: U-232
Tracer Recovery: 83.65%

Acquisition

Detector: AV191 SN: 50-112A2
Acquisition Start Date: 11/21/2014 4:13:22PM
Live Time: 400.00 min.
Real Time: 400.00 min.
Background Date: 11/18/2014 12:05:49AM
Bkgd Info: Sample: ICB;AV191; Det: AV191; Spectrum #1; 11/18/2014 12:05:49 AM

Energy Calibration: IC-8875;AV191-20140702
Efficiency Calibration:IC-8875;AV191-20140702
Calibration Date: 7/2/2014 12:04:53PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 25.81% +/- 0.36% TPU(2 sigma)



General Analysis

Analysis Method: ROI Analysis, Set Name = UROI
Decay Correction:11/21/2014 4:12:13PM
MDA Constants: Kα = 1.64 , Kβ = 1.64

Nuclide Library: Uranium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
U-238	4157.5	4,196.0	-38.5	3956.1	4261.9	98.7	100.0	87	0.4167	86.58	4.510E+000	pCi/L
U-235	4381.2	4,396.0	-14.8	4269.3	4470.7	158.1	80.2	5	0.0000	5.00	3.248E-001	pCi/L
U-234	4776.4	4,775.8	0.6	4530.3	4851.0	60.7	99.8	129	0.4167	128.58	6.712E+000	pCi/L
U-232	5343.2	5,320.3	22.9	5097.1	5410.3	67.2	100.1	1381	2.9167	1378.08	6.190E+001	pCi/L

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
10:53:40PM 11/21/2014

Sample

Sample Name: 160-9451-H-4-B Type: Sample
Spectrum #1 Analysis #1
: 160-9451-H-4-B
Sample Collection Date: 11/14/2014 12:45:00PM
Comment:

Sample Volume : 0.50 Sample Units: L
First Stage Dilution: N/A
Aliquot: N/A Aliquot Fraction: N/A
Dilution 2: N/A
Lab Preparation:

Batch

Batch Name: 158134
:
Description:

Client Name: Undefined
Client Contact:
Analyst: 60040

Tracer

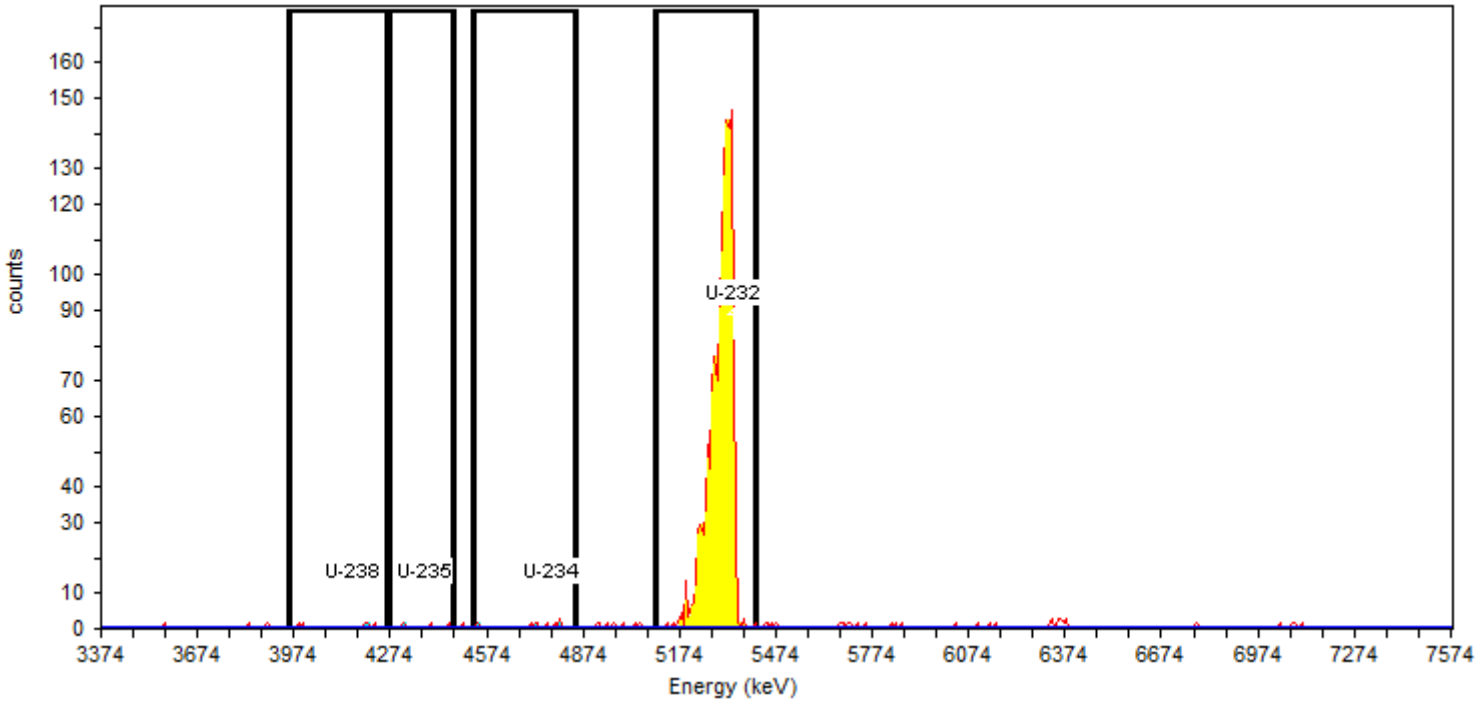
Tracer Name: U-232_00028
Tracer Activity: 82.25 DPM / mL x (Vol.) 0.20 mL = 16.45 DPM
Tracer Ref. Date: 8/25/2011 9:04:33PM

Tracer Nuclide: U-232
Tracer Recovery: 79.79%

Acquisition

Detector: AV192 SN: 50-119J7
Acquisition Start Date: 11/21/2014 4:13:23PM
Live Time: 400.00 min.
Real Time: 400.00 min.
Background Date: 11/18/2014 12:05:50AM
Bkgd Info: Sample: ICB;AV192; Det: AV192; Spectrum #1; 11/18/2014 12:05:50 AM

Energy Calibration: IC-8876;AV192-20140702
Efficiency Calibration:IC-8876;AV192-20140702
Calibration Date: 7/2/2014 12:04:57PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 26.37% +/- 0.31% TPU(2 sigma)



General Analysis

Analysis Method: ROI Analysis, Set Name = UROI
Decay Correction:11/21/2014 4:12:13PM
MDA Constants: Kα = 1.64 , Kβ = 1.64

Nuclide Library: Uranium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	Peak Expected keV	Peak Diff keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity	Units
U-238	4157.5	4,196.0	-38.5	3956.1	4261.9	10.4	100.0	5	0.0000	5.00	5.342E-002	pCi/L
U-235	4381.2	4,396.0	-14.8	4269.3	4470.7	11.0	80.2	3	0.0000	3.00	3.996E-002	pCi/L
U-234	4776.4	4,775.8	0.6	4530.3	4851.0	279.6	99.8	9	0.4167	8.58	9.189E-002	pCi/L
U-232	5343.2	5,320.3	22.9	5097.1	5410.3	64.2	100.1	1345	2.0833	1342.92	1.180E+001	pCi/L

Daily Checks

Alpha Spectroscopy Daily Pulser Check

Analysis Date: 11/21/14

		Gross Counts			FWHM (keV)			Pulser Center			Energy (keV)		
Detector	Analysis Date	Result	Criteria	P/F	Result	Criteria	P/F	Result	Criteria	P/F	Result	Criteria	P/F
AV181	11/21/14 13:49	5828	5629.6 - 6222.2	Pass	12.5	10 - 20	Pass	224.1	218.0 - 228.0	Pass	5038	4990.0 - 5070.0	Pass
AV182	11/21/14 13:49	5864	5562.3 - 6147.8	Pass	12.9	10 - 20	Pass	231.0	225.5 - 235.5	Pass	5090	5046.0 - 5126.0	Pass
AV185	11/21/14 13:49	5886	5577.8 - 6164.9	Pass	12.8	10 - 20	Pass	222.0	217.1 - 227.1	Pass	5023	4982.9 - 5062.9	Pass
AV189	11/21/14 13:49	6026	5502.9 - 6082.2	Pass	14.6	10 - 20	Pass	225.0	219.1 - 229.1	Pass	5045	4998.0 - 5078.0	Pass
AV190	11/21/14 13:49	6016	5707.2 - 6308.0	Pass	14.7	10 - 20	Pass	224.0	218.5 - 228.5	Pass	5038	4993.5 - 5073.5	Pass
AV191	11/21/14 13:49	5866	5586.0 - 6174.0	Pass	12.5	10 - 20	Pass	222.0	217.0 - 227.0	Pass	5022	4982.7 - 5062.7	Pass
AV192	11/21/14 13:49	5996	5710.7 - 6311.8	Pass	15.6	10 - 20	Pass	223.1	217.1 - 227.1	Pass	5031	4983.0 - 5063.0	Pass

Analysis Date: 11/23/14

		Gross Counts			FWHM (keV)			Pulser Center			Energy (keV)		
Detector	Analysis Date	Result	Criteria	P/F	Result	Criteria	P/F	Result	Criteria	P/F	Result	Criteria	P/F
AV165	11/23/14 14:44	5750	5525.9 - 6107.5	Pass	13.1	10 - 20	Pass	222.9	218.4 - 228.4	Pass	5030	4993.0 - 5073.0	Pass
AV168	11/23/14 14:44	5784	5611.6 - 6202.3	Pass	13.1	10 - 20	Pass	223.1	218.0 - 228.0	Pass	5030	4990.2 - 5070.2	Pass
AV174	11/23/14 14:44	6017	5719.0 - 6321.0	Pass	14.8	10 - 20	Pass	224.0	219.0 - 229.0	Pass	5037	4997.2 - 5077.2	Pass
AV176	11/23/14 14:44	6020	5704.4 - 6304.9	Pass	13.2	10 - 20	Pass	222.0	217.0 - 227.0	Pass	5023	4982.6 - 5062.6	Pass
AV177	11/23/14 14:44	6007	5545.3 - 6129.0	Pass	17.7	10 - 20	Pass	223.0	219.1 - 229.1	Pass	5030	4997.9 - 5077.9	Pass
AV178	11/23/14 14:44	6010	5712.0 - 6313.2	Pass	15.4	10 - 20	Pass	222.1	217.1 - 227.1	Pass	5023	4983.0 - 5063.0	Pass

Analysis Date: 11/24/14

		Gross Counts			FWHM (keV)			Pulser Center			Energy (keV)		
Detector	Analysis Date	Result	Criteria	P/F	Result	Criteria	P/F	Result	Criteria	P/F	Result	Criteria	P/F
AV150	11/24/14 18:02	6020	5718.5 - 6320.4	Pass	13.4	10 - 20	Pass	224.0	219.0 - 229.0	Pass	5037	4997.6 - 5077.6	Pass

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Pulser Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
6:03:55PM 11/24/2014

Sample

Sample Name: Pulser;AV150
Comment:

Spectrum #7 Analysis #1

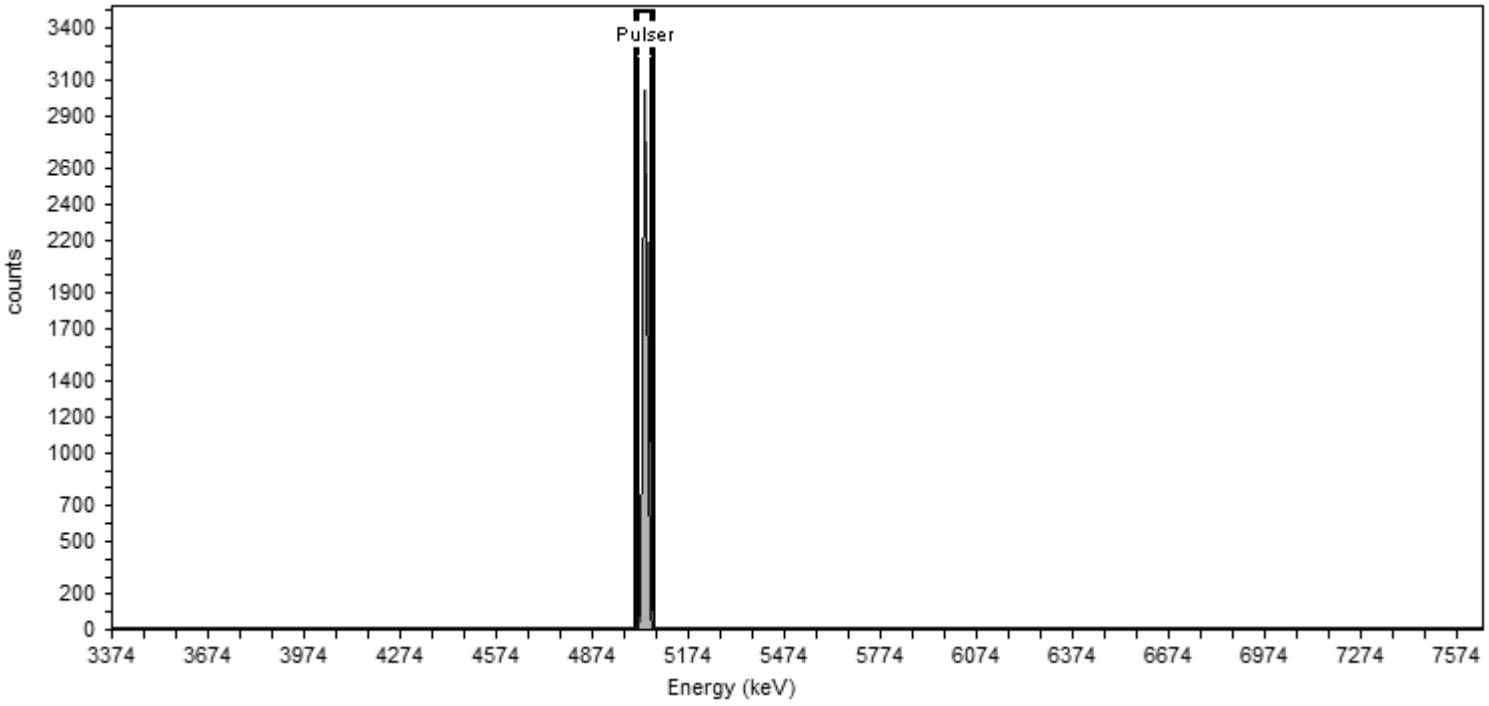
Batch

Batch Name: November2014a
Description:

Acquisition

Detector: AV150 , SN: 50-05/R4
Acquisition Start Date: 11/24/2014 6:02:36PM
Live Time: 1.00 min.
Real Time: 1.00 min.
Calibration Name: IC-8876;AV150-20140709
Calibration Date: 7/8/2014 10:30:13PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Analysis Method: Peak Fit Analysis

Nuclide Summary (Peak Search)

Nuclide	Peak Energy keV	Start Energy keV	End Energy keV	FWHM keV	Fit Area	Gross Counts
Pulser	5037.114	5014.379	5059.848	13.36	5,825.71	6,019.90

TestAmerica
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Alpha-Spectroscopy Pulser Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
2:51:08PM 11/23/2014

Sample

Sample Name: Pulser;AV165
Comment:

Spectrum #4 Analysis #1

Batch

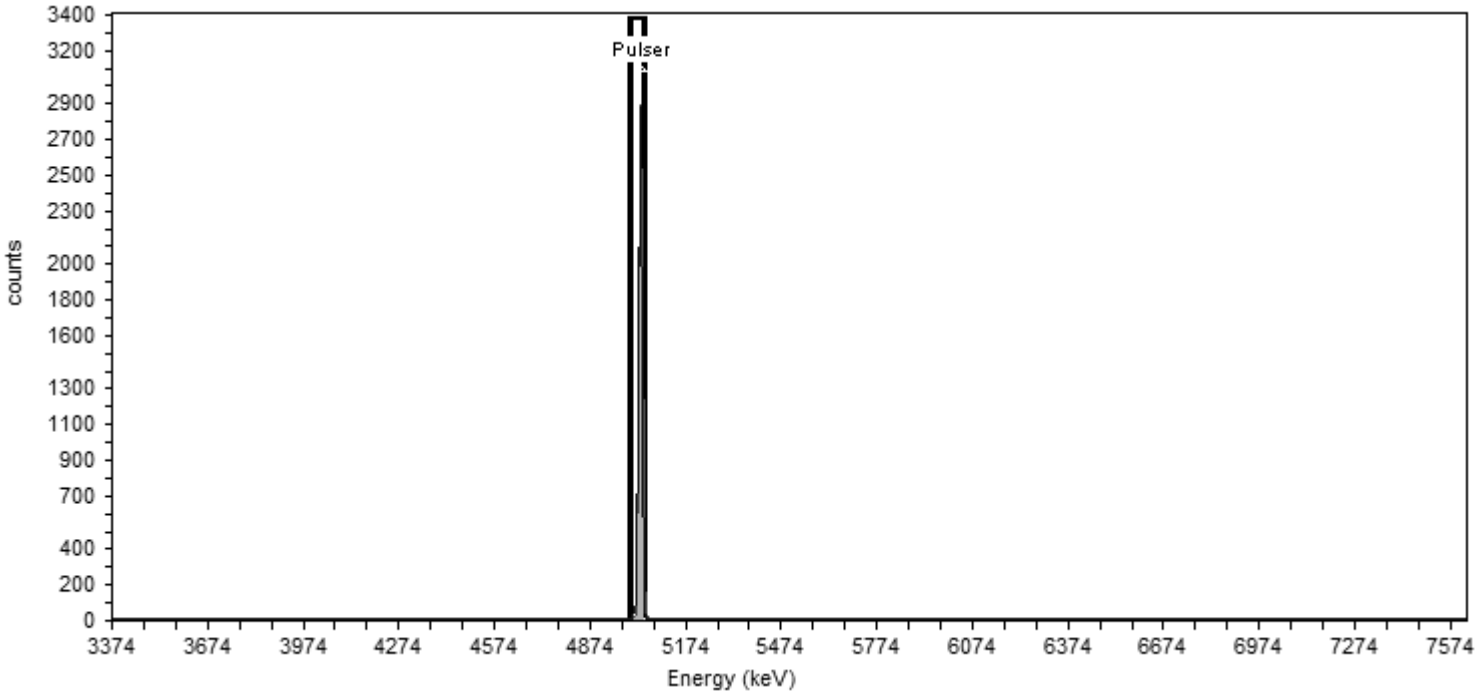
Batch Name: November2014a
Description:

Acquisition

Detector: AV165 , SN: 50-112F7
Acquisition Start Date: 11/23/2014 2:44:20PM
Live Time: 1.00 min.
Real Time: 1.00 min.
Calibration Name: IC-8877;AV165-20140706
Calibration Date: 7/8/2014 5:48:08PM

Energy Calibration Equation:

Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Analysis Method: Peak Fit Analysis

Nuclide Summary (Peak Search)

Nuclide	Peak Energy keV	Start Energy keV	End Energy keV	FWHM keV	Fit Area	Gross Counts
Pulser	5029.604	5007.240	5051.967	13.14	5,445.10	5,749.96

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Alpha-Spectroscopy Pulser Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
2:51:02PM 11/23/2014

Sample

Sample Name: Pulser;AV168 Spectrum #4 Analysis #1
Comment:

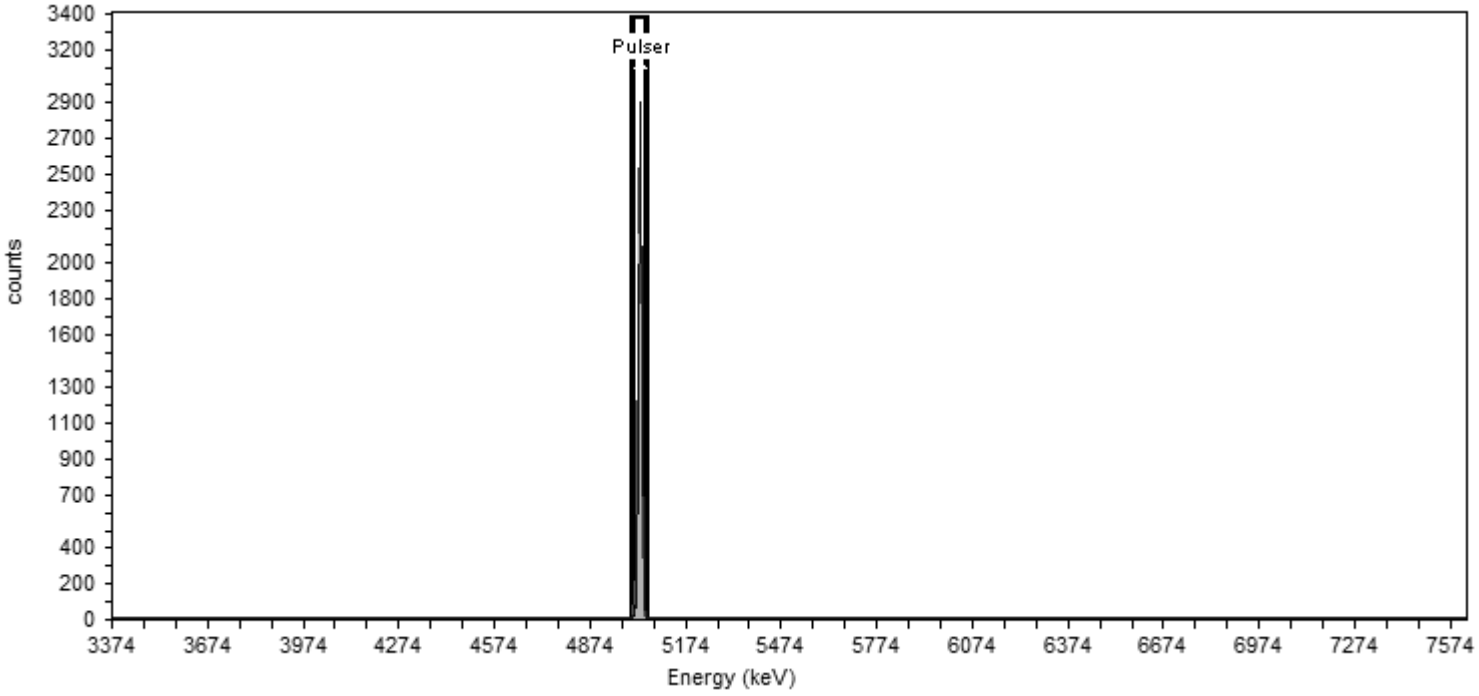
Batch

Batch Name: November2014a
Description:

Acquisition

Detector: AV168 , SN: 50-113 G4
Acquisition Start Date: 11/23/2014 2:44:21PM
Live Time: 1.00 min.
Real Time: 1.01 min.
Calibration Name: IC-9793;AV168-20140706
Calibration Date: 7/6/2014 9:06:10PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Analysis Method: Peak Fit Analysis

Nuclide Summary (Peak Search)

Nuclide	Peak Energy keV	Start Energy keV	End Energy keV	FWHM keV	Fit Area	Gross Counts
Pulser	5030.360	5008.093	5052.628	13.08	5,449.82	5,783.93

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Alpha-Spectroscopy Pulser Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
2:49:30PM 11/23/2014

Sample

Sample Name: Pulser;AV174 Spectrum #4 Analysis #1
Comment:

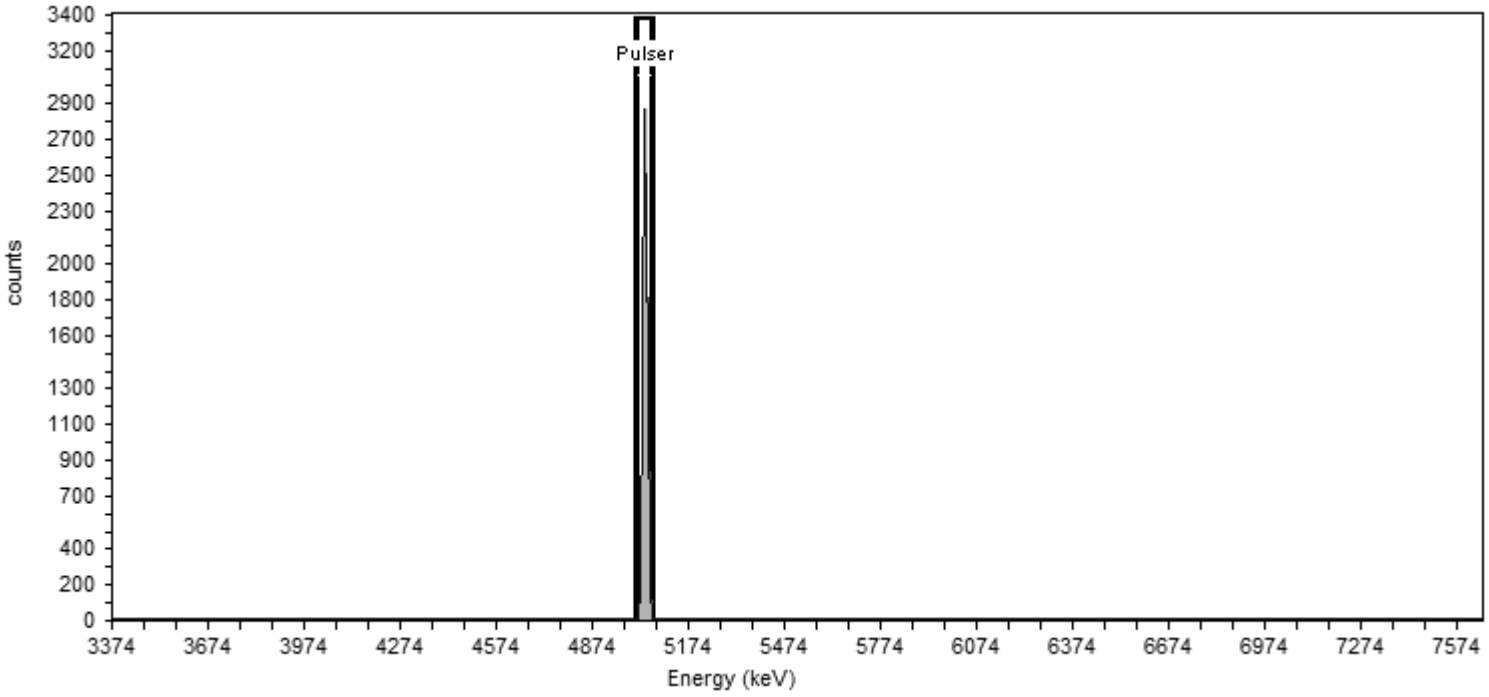
Batch

Batch Name: November2014b
Description:

Acquisition

Detector: AV174 , SN: 50-112Y5
Acquisition Start Date: 11/23/2014 2:44:22PM
Live Time: 1.00 min.
Real Time: 1.00 min.
Calibration Name: IC-9886;AV174-20140706
Calibration Date: 7/6/2014 9:06:32PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Analysis Method: Peak Fit Analysis

Nuclide Summary (Peak Search)

Nuclide	Peak Energy keV	Start Energy keV	End Energy keV	FWHM keV	Fit Area	Gross Counts
Pulser	5037.415	5012.262	5062.568	14.78	6,090.52	6,016.66

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Alpha-Spectroscopy Pulser Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
2:49:33PM 11/23/2014

Sample

Sample Name: Pulser;AV176 Spectrum #4 Analysis #1
Comment:

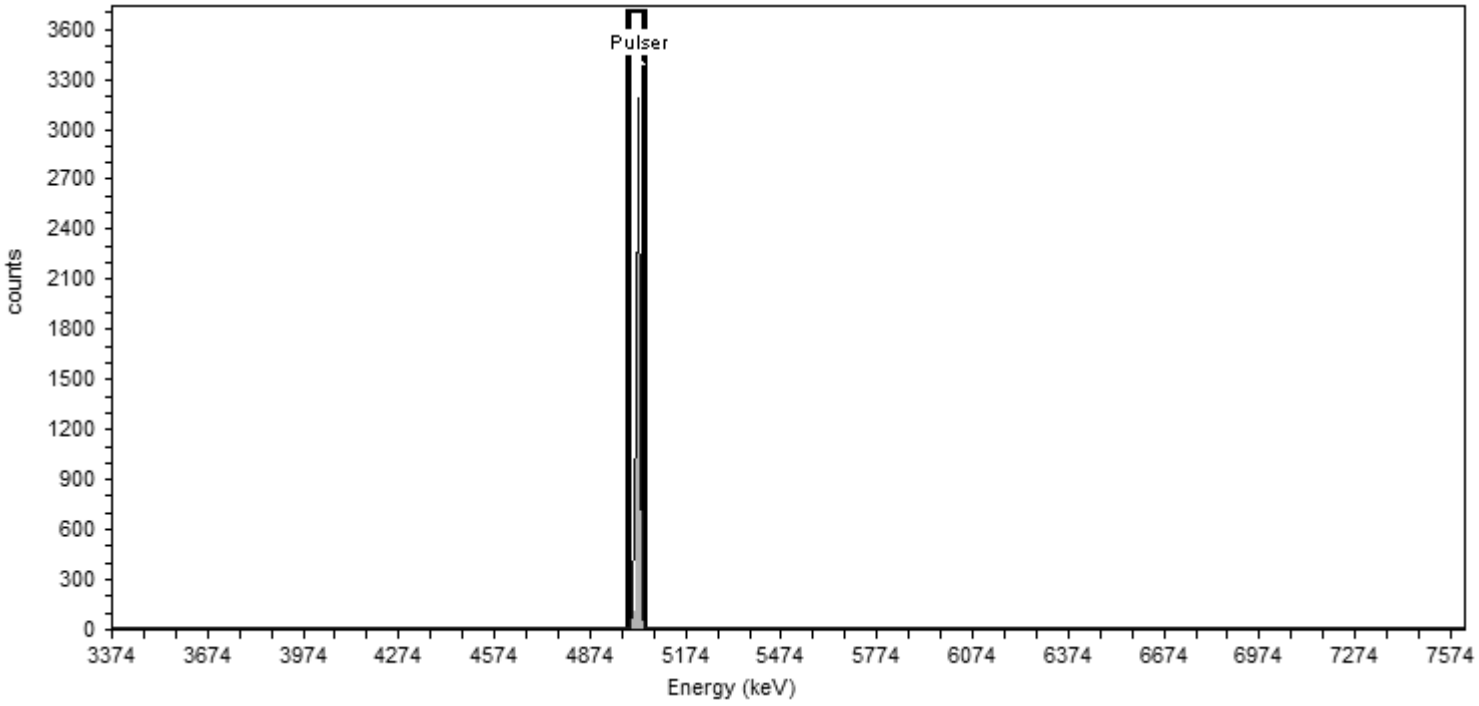
Batch

Batch Name: November2014a
Description:

Acquisition

Detector: AV176 , SN: 50-117H2
Acquisition Start Date: 11/23/2014 2:44:23PM
Live Time: 1.00 min.
Real Time: 1.00 min.
Calibration Name: IC-8874;AV176-20140706
Calibration Date: 7/6/2014 9:06:39PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Analysis Method: Peak Fit Analysis

Nuclide Summary (Peak Search)

Nuclide	Peak Energy keV	Start Energy keV	End Energy keV	FWHM keV	Fit Area	Gross Counts
Pulser	5022.519	5000.012	5045.025	13.22	6,034.03	6,019.93

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Alpha-Spectroscopy Pulser Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
2:49:28PM 11/23/2014

Sample

Sample Name: Pulser;AV177 Spectrum #4 Analysis #1
Comment:

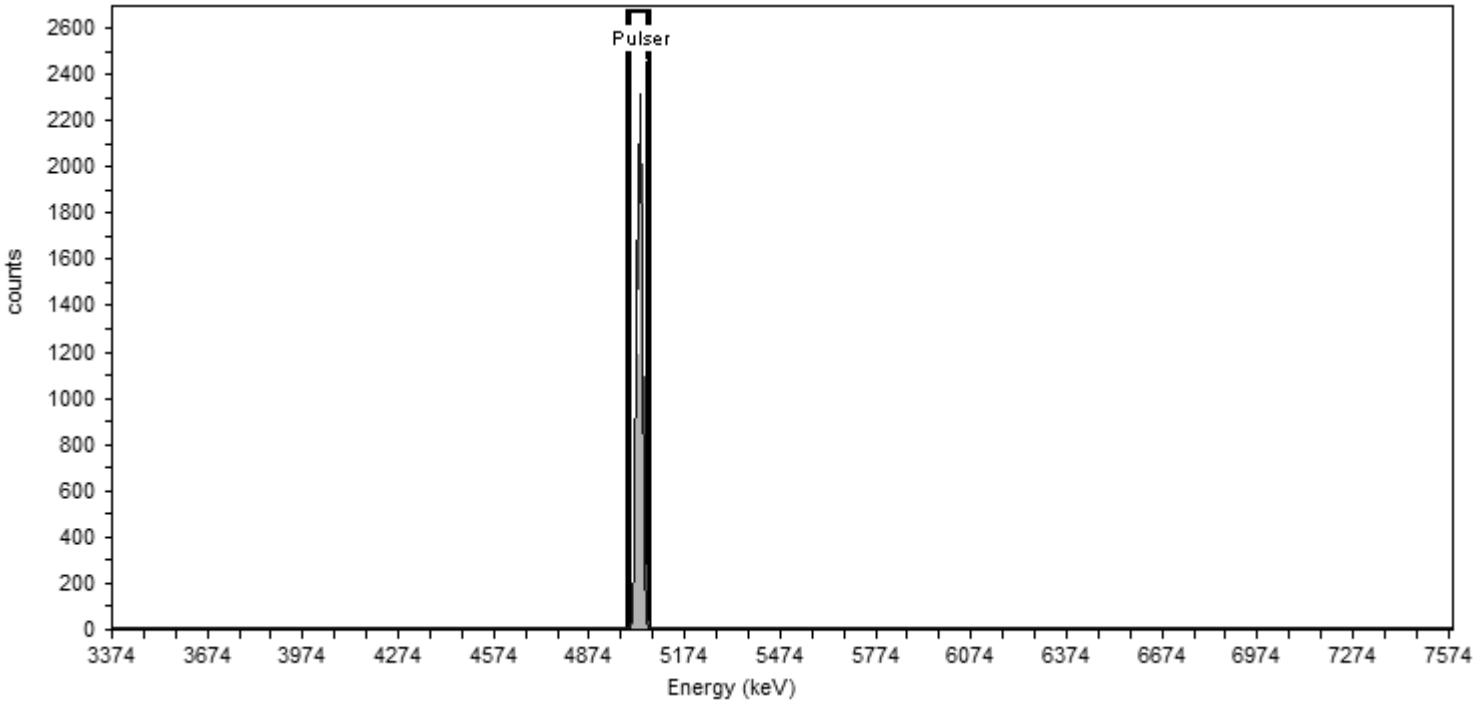
Batch

Batch Name: November2014a
Description:

Acquisition

Detector: AV177 , SN: 50-117H3
Acquisition Start Date: 11/23/2014 2:44:23PM
Live Time: 1.00 min.
Real Time: 1.00 min.
Calibration Name: IC-8875;AV177-20140706
Calibration Date: 7/6/2014 9:06:44PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Analysis Method: Peak Fit Analysis

Nuclide Summary (Peak Search)

Nuclide	Peak Energy keV	Start Energy keV	End Energy keV	FWHM keV	Fit Area	Gross Counts
Pulser	5029.728	4999.543	5059.912	17.73	5,885.95	6,006.97

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Alpha-Spectroscopy Pulser Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
2:49:32PM 11/23/2014

Sample

Sample Name: Pulser;AV178 Spectrum #4 Analysis #1
Comment:

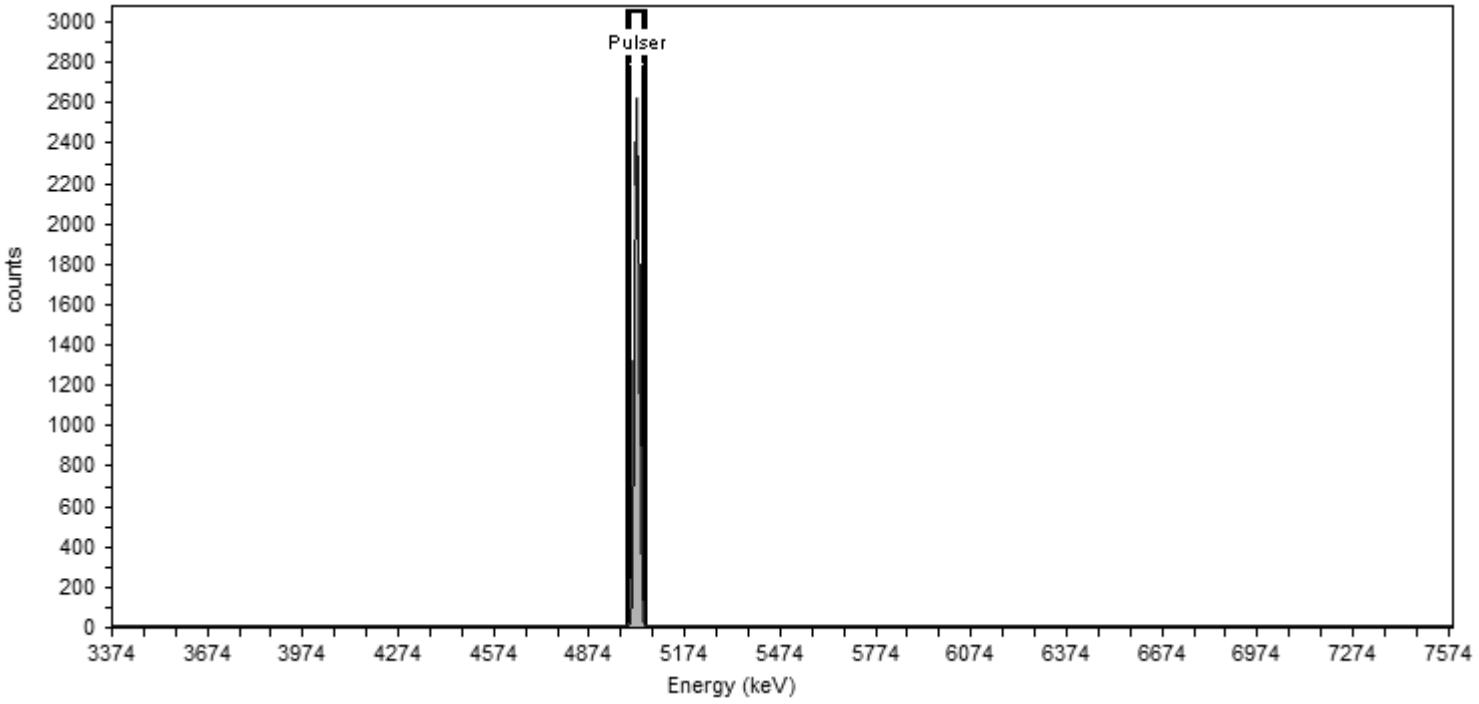
Batch

Batch Name: November2014a
Description:

Acquisition

Detector: AV178 , SN: 50-117H4
Acquisition Start Date: 11/23/2014 2:44:23PM
Live Time: 1.00 min.
Real Time: 1.00 min.
Calibration Name: IC-8876;AV178-20140706
Calibration Date: 7/6/2014 9:06:47PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Analysis Method: Peak Fit Analysis

Nuclide Summary (Peak Search)

Nuclide	Peak Energy keV	Start Energy keV	End Energy keV	FWHM keV	Fit Area	Gross Counts
Pulser	5023.175	4996.898	5049.452	15.44	5,817.32	6,009.96

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Alpha-Spectroscopy Pulser Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:53:11PM 11/21/2014

Sample

Sample Name: Pulser;AV181 Spectrum #2 Analysis #1
Comment:

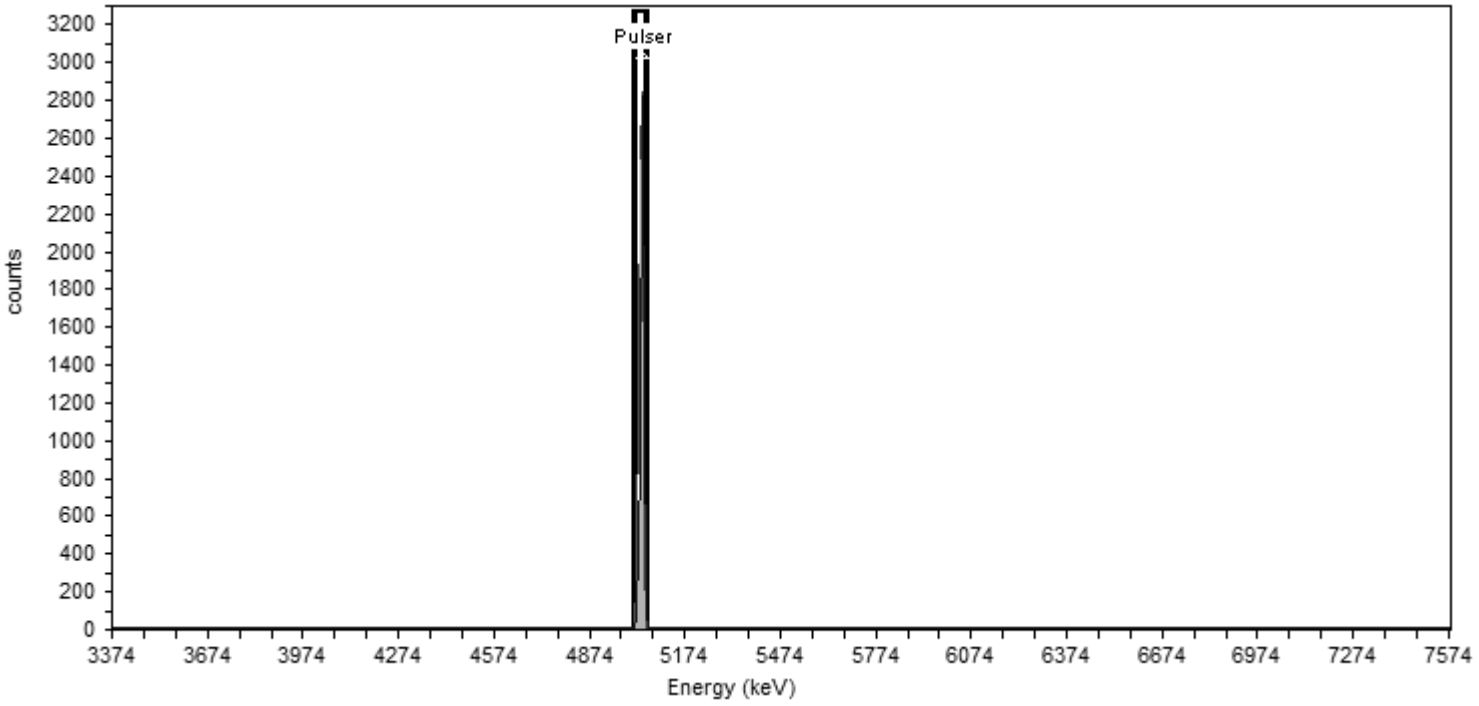
Batch

Batch Name: November2014b
Description:

Acquisition

Detector: AV181 , SN: 50-110X1
Acquisition Start Date: 11/21/2014 1:49:33PM
Live Time: 1.00 min.
Real Time: 1.00 min.
Calibration Name: IC-9792;AV181-20140702
Calibration Date: 7/6/2014 6:16:08PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Analysis Method: Peak Fit Analysis

Nuclide Summary (Peak Search)

Nuclide	Peak Energy keV	Start Energy keV	End Energy keV	FWHM keV	Fit Area	Gross Counts
Pulser	5038.095	5016.892	5059.299	12.46	5,087.81	5,828.03

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Alpha-Spectroscopy Pulser Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:53:12PM 11/21/2014

Sample

Sample Name: Pulser;AV182 Spectrum #2 Analysis #1
Comment:

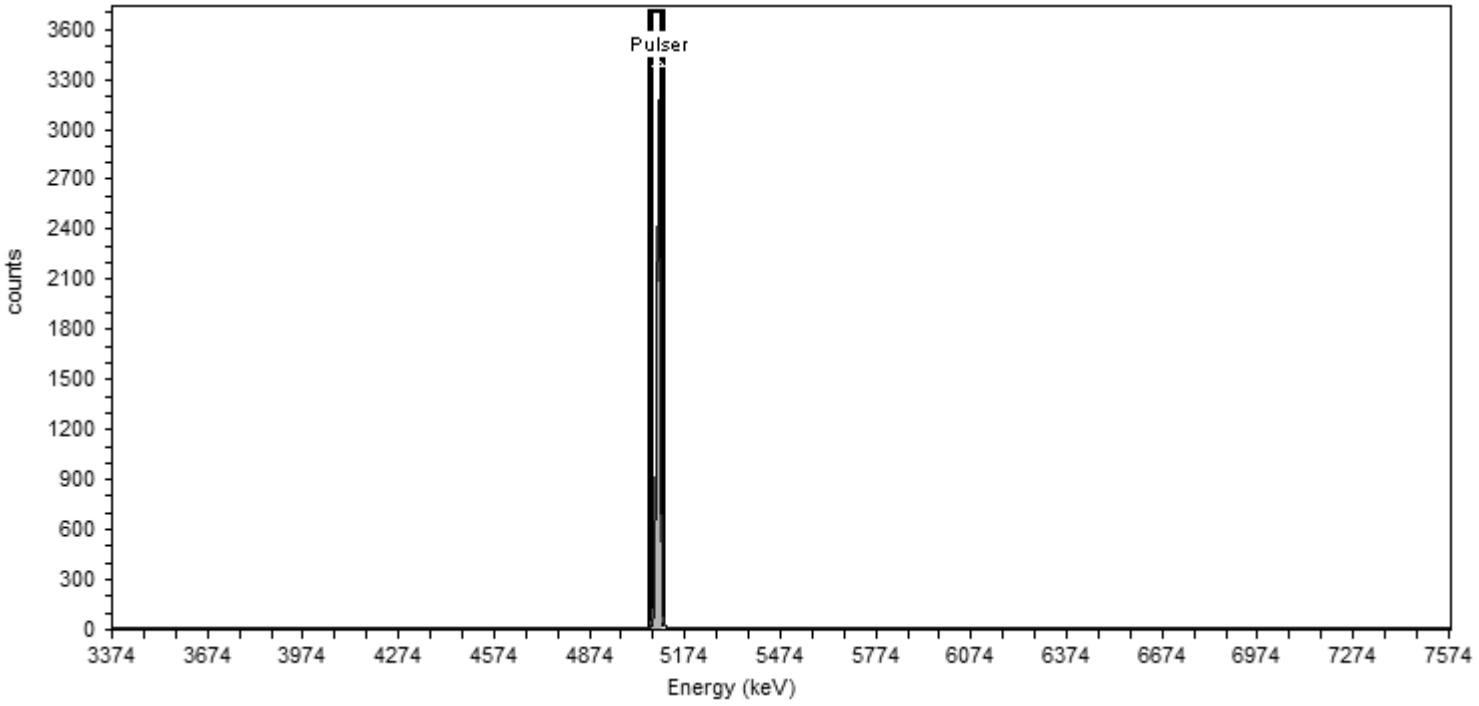
Batch

Batch Name: November2014b
Description:

Acquisition

Detector: AV182 , SN: 50-110X6
Acquisition Start Date: 11/21/2014 1:49:32PM
Live Time: 1.00 min.
Real Time: 1.01 min.
Calibration Name: IC-9793;AV182-20140702
Calibration Date: 7/6/2014 6:16:24PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Analysis Method: Peak Fit Analysis

Nuclide Summary (Peak Search)

Nuclide	Peak Energy keV	Start Energy keV	End Energy keV	FWHM keV	Fit Area	Gross Counts
Pulser	5089.775	5067.848	5111.702	12.88	5,858.20	5,864.27

TestAmerica
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Alpha-Spectroscopy Pulser Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:53:20PM 11/21/2014

Sample

Sample Name: Pulser;AV185 Spectrum #2 Analysis #1
Comment:

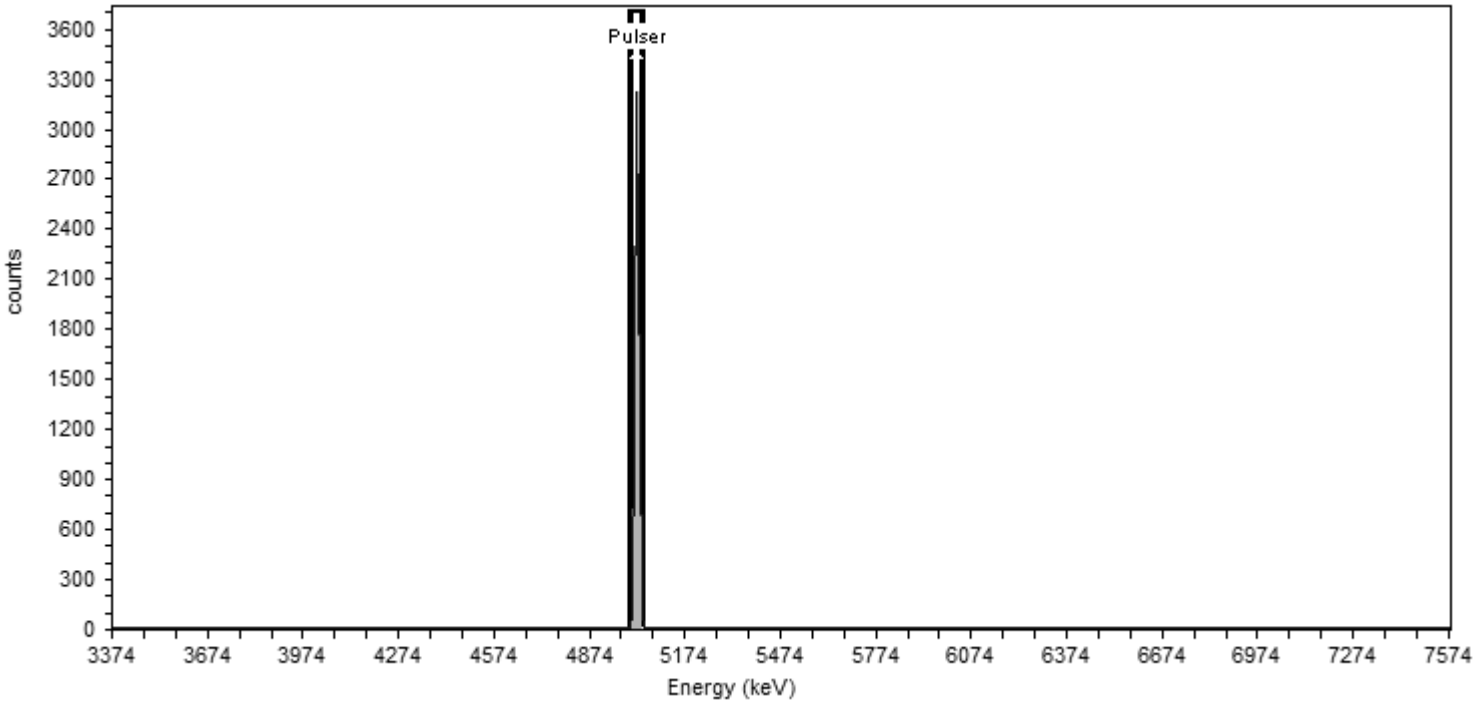
Batch

Batch Name: November2014b
Description:

Acquisition

Detector: AV185 , SN: 50-119I1
Acquisition Start Date: 11/21/2014 1:49:33PM
Live Time: 1.00 min.
Real Time: 1.00 min.
Calibration Name: IC-9817;AV185-20140702
Calibration Date: 7/2/2014 12:04:32PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Analysis Method: Peak Fit Analysis

Nuclide Summary (Peak Search)

Nuclide	Peak Energy keV	Start Energy keV	End Energy keV	FWHM keV	Fit Area	Gross Counts
Pulser	5022.584	5000.745	5044.424	12.83	5,939.49	5,885.90

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Pulser Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:52:24PM 11/21/2014

Sample

Sample Name: Pulser;AV189 Spectrum #2 Analysis #1
Comment:

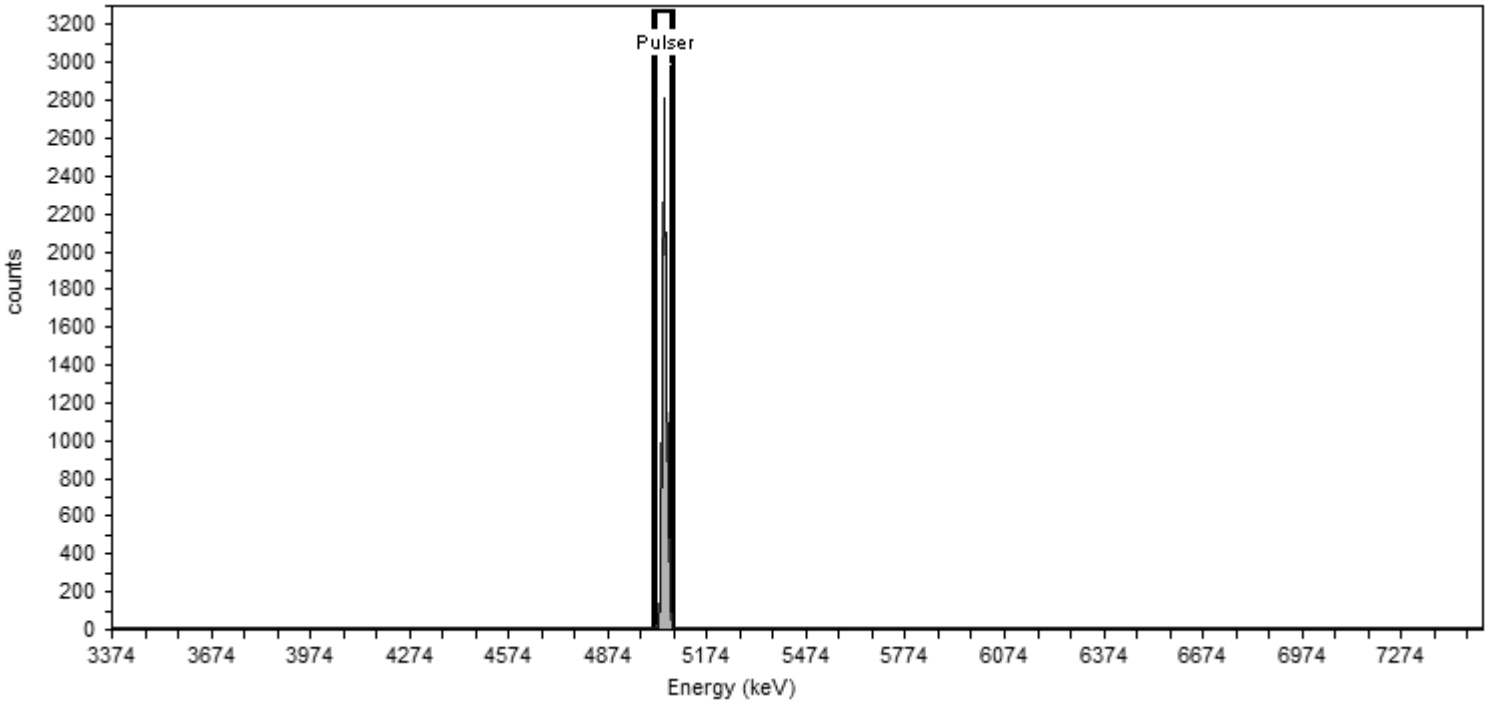
Batch

Batch Name: November2014b
Description:

Acquisition

Detector: AV189 , SN: 50-112A3
Acquisition Start Date: 11/21/2014 1:49:28PM
Live Time: 1.00 min.
Real Time: 1.00 min.
Calibration Name: IC-7107;AV189-20140702
Calibration Date: 7/2/2014 12:04:46PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Analysis Method: Peak Fit Analysis

Nuclide Summary (Peak Search)

Nuclide	Peak Energy keV	Start Energy keV	End Energy keV	FWHM keV	Fit Area	Gross Counts
Pulser	5045.049	5020.183	5069.916	14.61	5,883.16	6,025.74

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Pulser Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:52:23PM 11/21/2014

Sample

Sample Name: Pulser;AV190 Spectrum #2 Analysis #1
Comment:

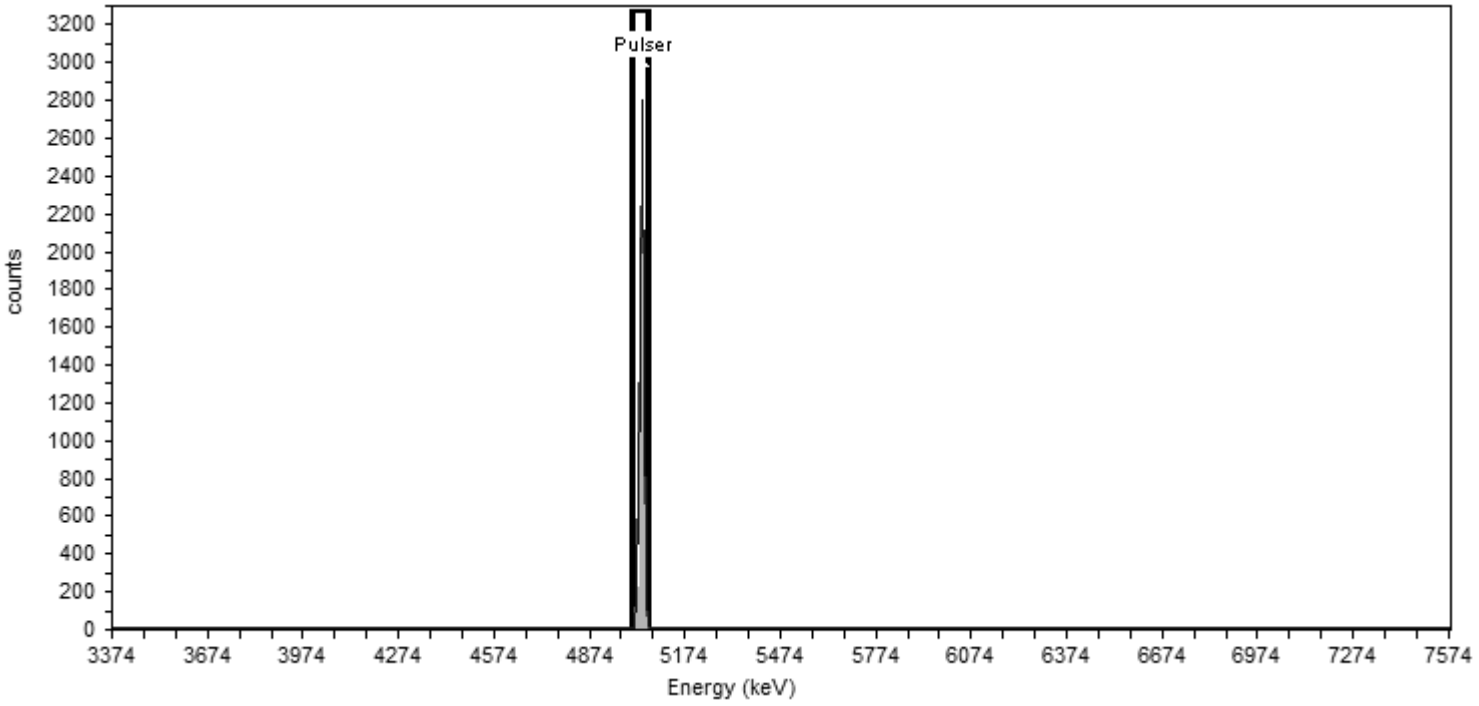
Batch

Batch Name: November2014b
Description:

Acquisition

Detector: AV190 , SN: 50-119I7
Acquisition Start Date: 11/21/2014 1:49:28PM
Live Time: 1.00 min.
Real Time: 1.00 min.
Calibration Name: IC-8874;AV190-20140702
Calibration Date: 7/2/2014 12:04:50PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Analysis Method: Peak Fit Analysis

Nuclide Summary (Peak Search)

Nuclide	Peak Energy keV	Start Energy keV	End Energy keV	FWHM keV	Fit Area	Gross Counts
Pulser	5037.638	5012.543	5062.732	14.74	5,932.94	6,015.86

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Pulser Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:52:25PM 11/21/2014

Sample

Sample Name: Pulser;AV191 Spectrum #2 Analysis #1
Comment:

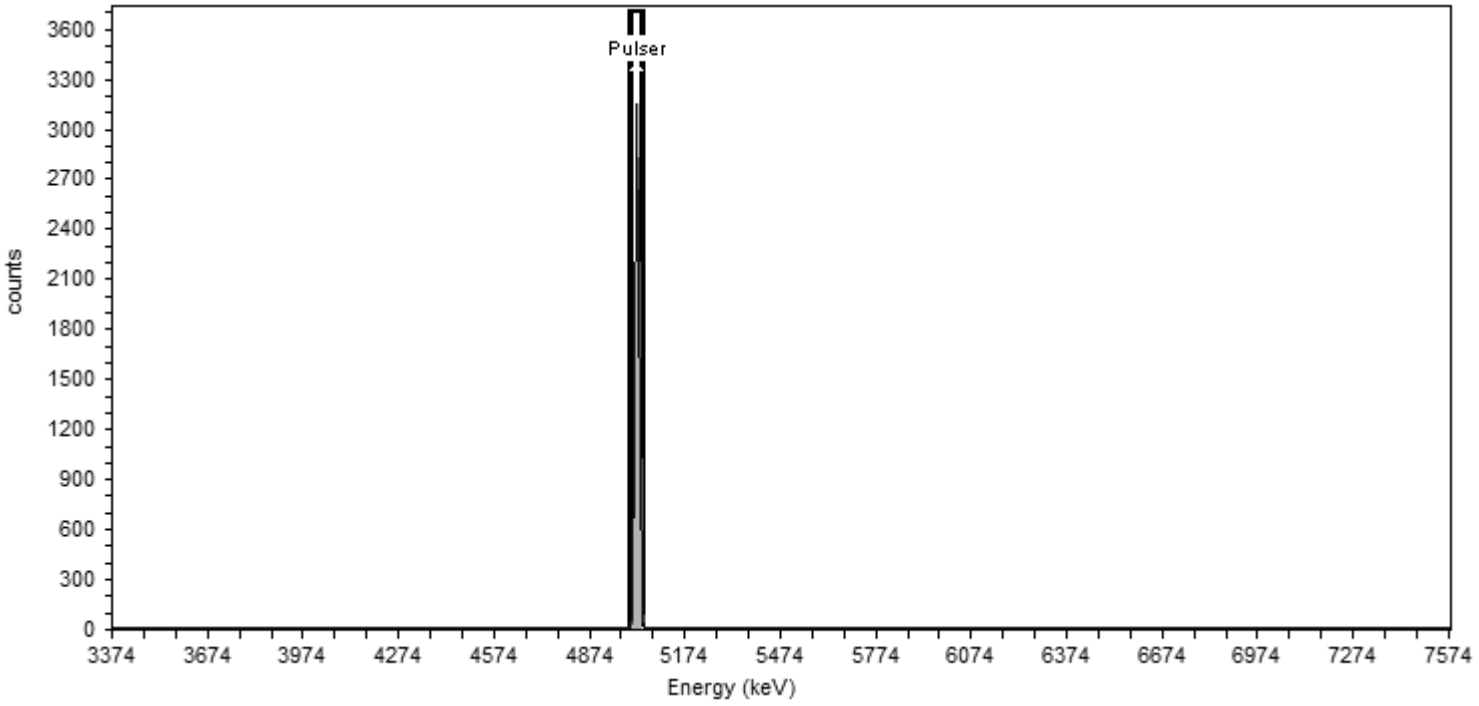
Batch

Batch Name: November2014b
Description:

Acquisition

Detector: AV191 , SN: 50-112A2
Acquisition Start Date: 11/21/2014 1:49:29PM
Live Time: 1.00 min.
Real Time: 1.00 min.
Calibration Name: IC-8875;AV191-20140702
Calibration Date: 7/2/2014 12:04:53PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Analysis Method: Peak Fit Analysis

Nuclide Summary (Peak Search)

Nuclide	Peak Energy keV	Start Energy keV	End Energy keV	FWHM keV	Fit Area	Gross Counts
Pulser	5022.330	5001.064	5043.596	12.49	5,645.98	5,865.56

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Pulser Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:52:29PM 11/21/2014

Sample

Sample Name: Pulser;AV192 Spectrum #2 Analysis #1
Comment:

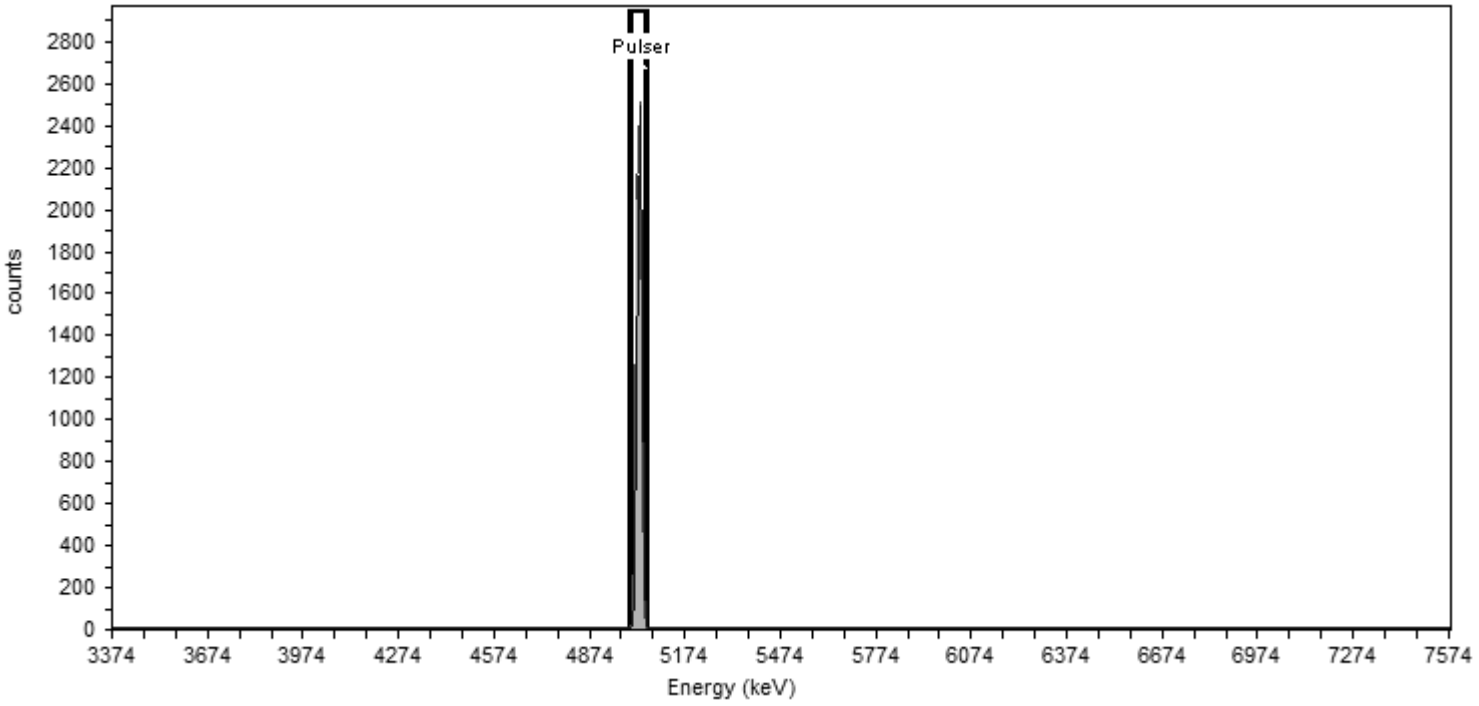
Batch

Batch Name: November2014b
Description:

Acquisition

Detector: AV192 , SN: 50-119J7
Acquisition Start Date: 11/21/2014 1:49:29PM
Live Time: 1.00 min.
Real Time: 1.00 min.
Calibration Name: IC-8876;AV192-20140702
Calibration Date: 7/2/2014 12:04:57PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Analysis Method: Peak Fit Analysis

Nuclide Summary (Peak Search)

Nuclide	Peak Energy keV	Start Energy keV	End Energy keV	FWHM keV	Fit Area	Gross Counts
Pulser	5030.773	5004.238	5057.309	15.59	5,618.14	5,995.64

Initial Calibrations

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
5:48:09PM 7/8/2014

Calibration

Sample Name: IC-8877;AV165-20140706
Description:
Detector: AV165

Analyst: 60040
Analysis Date: 7/8/2014 5:48:08PM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82236-334
Prepared by: Analytics
Description:

Certification Date: 6/2/2010 12:00:00PM

Acquisition

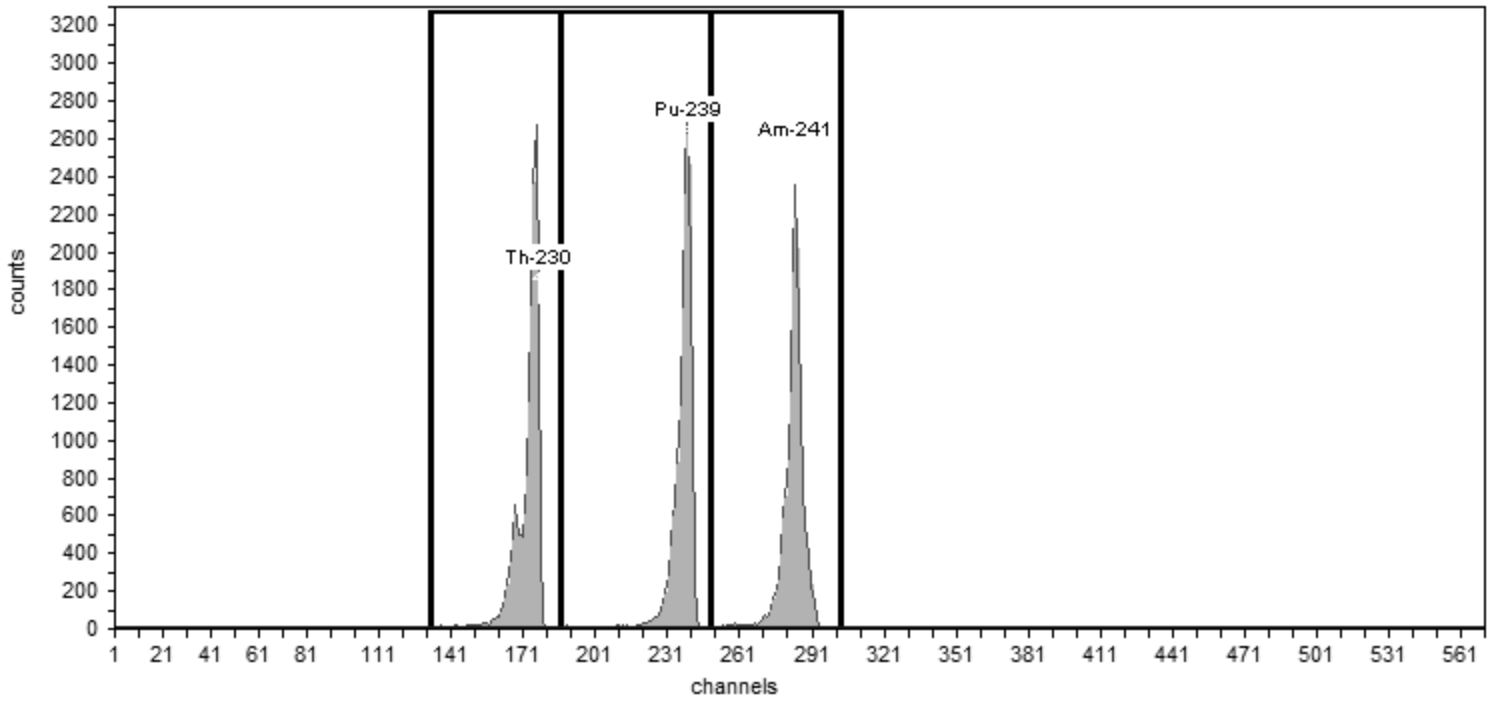
Detector: AV165 , SN: 50-112F7
Acquisition Start Date: 7/6/2014 9:29:20PM

Live Time: 140.00 min.
Real Time: 140.01 min.

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency Calibration Name: IC-8877;AV165-20140706

Efficiency: 26.55% +/- 0.32% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: Yes
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	29.96	15,534.00	110.96
Pu-239	240	5,155.40	186	249	32.90	15,551.00	111.08
Am-241	284	5,485.70	249	303	31.83	14,998.00	107.13

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
7:02:58PM 7/21/2014

Calibration

Sample Name: IC-9793;AV168-20140706
Description:
Detector: AV168

Analyst: 60040
Analysis Date: 7/6/2014 9:06:10PM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82241-334
Prepared by: Analytics
Description:

Certification Date: 6/8/2010 12:00:00PM

Acquisition

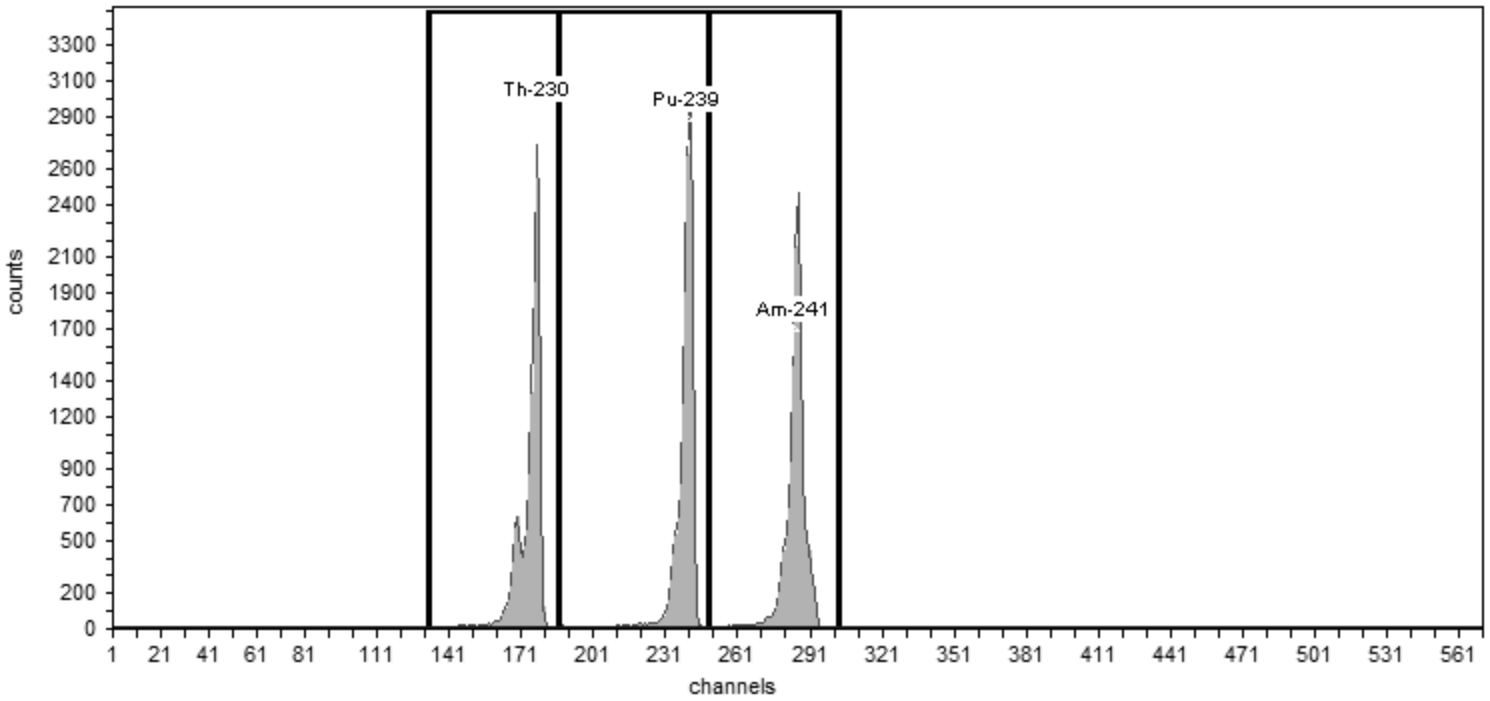
Detector: AV168 , SN: 50-113 G4
Acquisition Start Date: 7/6/2014 6:43:34PM

Live Time: 140.00 min.
Real Time: 140.01 min.

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency Calibration Name: IC-9793;AV168-20140706

Efficiency: 26.32% +/- 0.32% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: Yes
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	27.13	14,694.00	104.96
Pu-239	240	5,155.40	186	249	29.98	15,058.00	107.56
Am-241	284	5,485.70	249	303	30.21	14,521.00	103.72

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
9:06:33PM 7/6/2014

Calibration

Sample Name: IC-9886;AV174-20140706
Description:
Detector: AV174

Analyst: 60040
Analysis Date: 7/6/2014 9:06:32PM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82247-334
Prepared by: Analytics
Description:

Certification Date: 6/10/2010 12:00:00PM

Acquisition

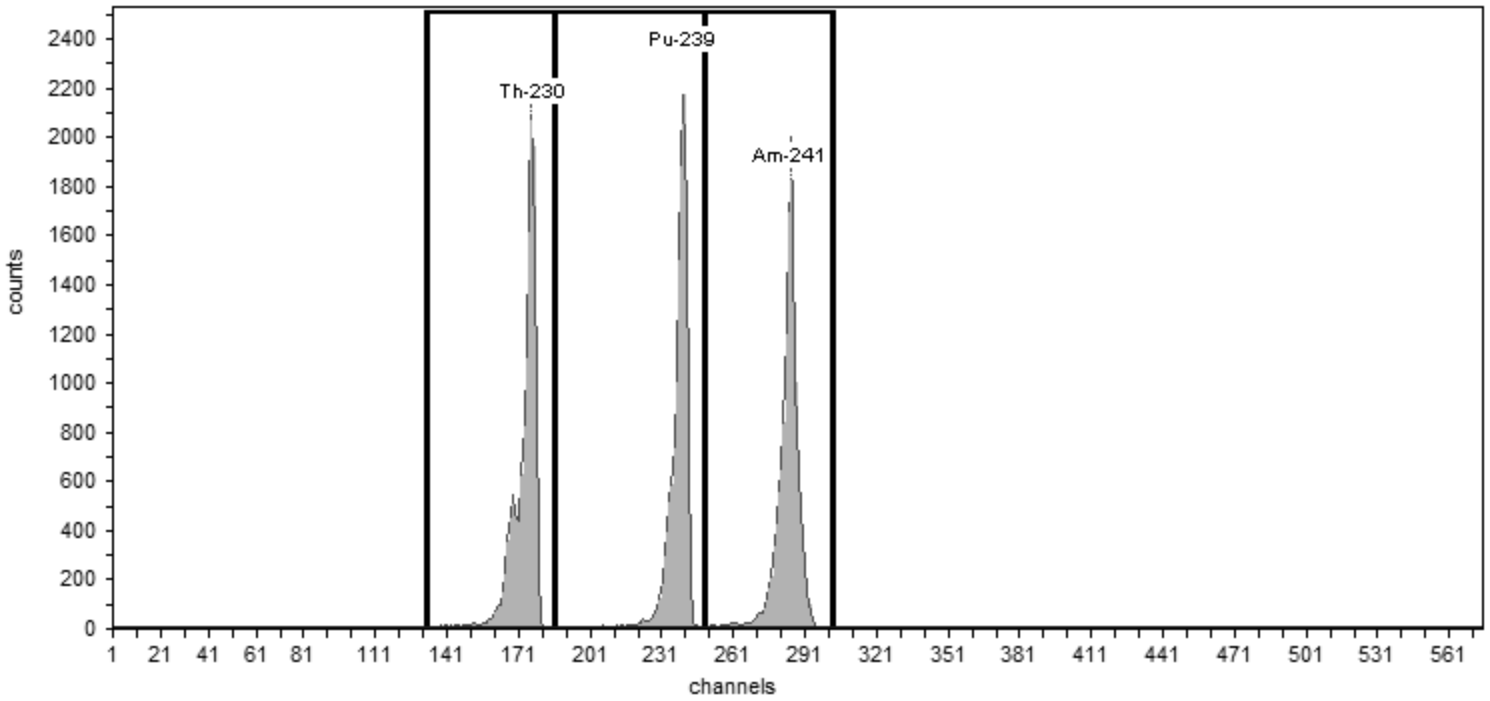
Detector: AV174 , SN: 50-112Y5
Acquisition Start Date: 7/6/2014 6:45:06PM

Live Time: 140.00 min.
Real Time: 140.05 min.

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency Calibration Name: IC-9886;AV174-20140706

Efficiency: 25.47% +/- 0.34% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: Yes
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	29.41	13,191.00	94.22
Pu-239	240	5,155.40	186	249	33.39	12,539.00	89.56
Am-241	284	5,485.70	249	303	33.84	13,336.00	95.26

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
9:06:40PM 7/6/2014

Calibration

Sample Name: IC-8874;AV176-20140706
Description:
Detector: AV176

Analyst: 60040
Analysis Date: 7/6/2014 9:06:39PM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82233-334
Prepared by: Analytics
Description:

Certification Date: 6/3/2010 12:00:00PM

Acquisition

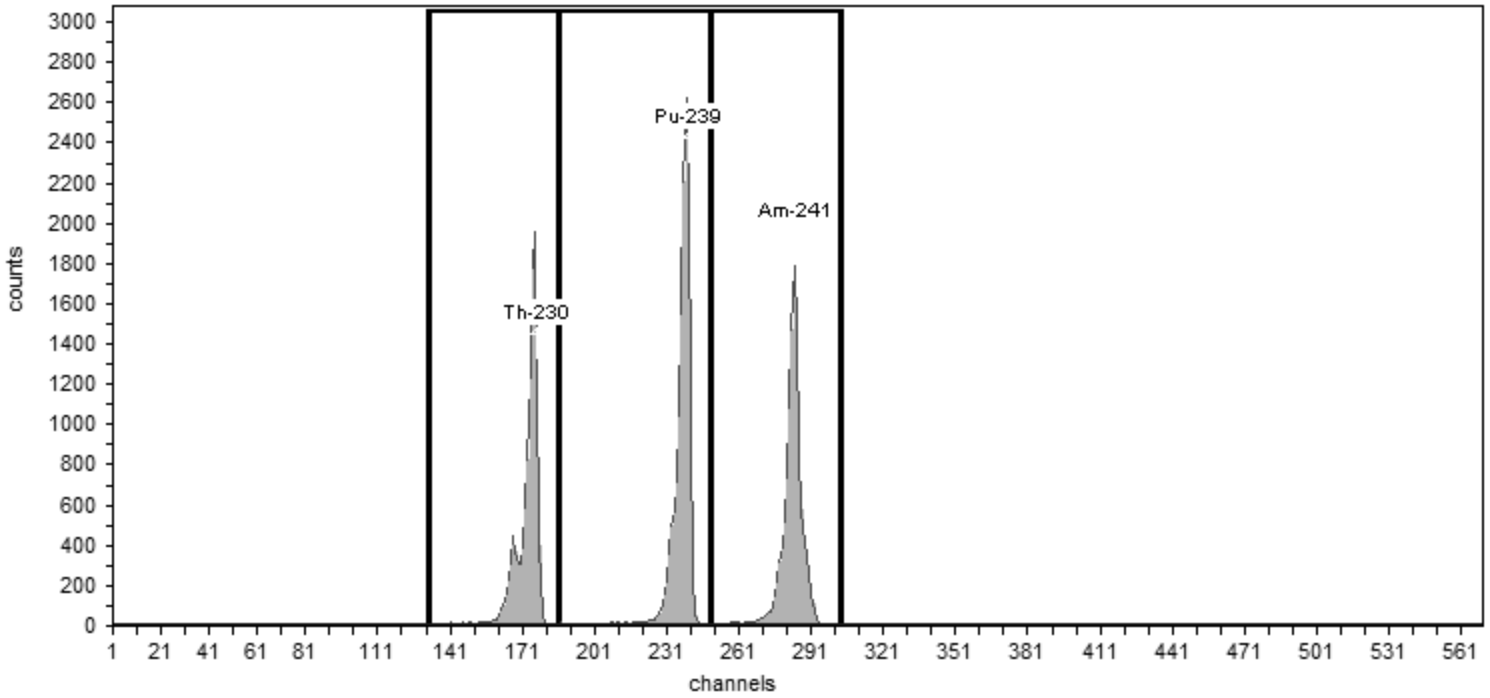
Detector: AV176 , SN: 50-117H2
Acquisition Start Date: 7/6/2014 6:45:39PM

Live Time: 140.00 min.
Real Time: 140.02 min.

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency Calibration Name: IC-8874;AV176-20140706

Efficiency: 26.63% +/- 0.38% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: Yes
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	29.53	10,931.00	78.08
Pu-239	240	5,155.40	186	249	31.38	13,812.00	98.66
Am-241	284	5,485.70	249	303	33.39	11,250.00	80.36

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
9:06:44PM 7/6/2014

Calibration

Sample Name: IC-8875;AV177-20140706
Description:
Detector: AV177

Analyst: 60040
Analysis Date: 7/6/2014 9:06:44PM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82234-334
Prepared by: Analytics
Description:

Certification Date: 6/2/2010 12:00:00PM

Acquisition

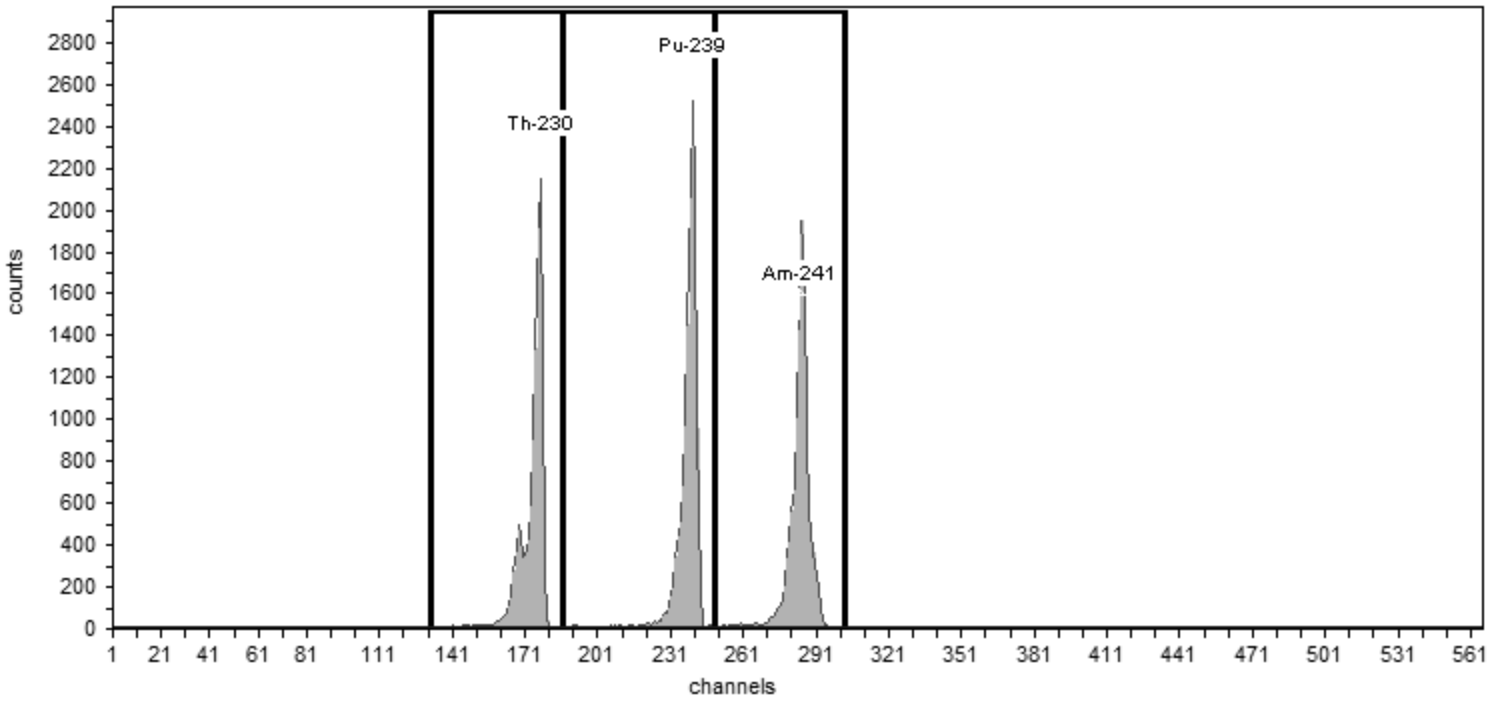
Detector: AV177 , SN: 50-117H3
Acquisition Start Date: 7/6/2014 6:45:56PM

Live Time: 140.00 min.
Real Time: 140.01 min.

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency Calibration Name: IC-8875;AV177-20140706

Efficiency: 25.29% +/- 0.35% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: Yes
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	28.21	11,787.00	84.19
Pu-239	240	5,155.40	186	249	30.73	13,086.00	93.47
Am-241	284	5,485.70	249	303	29.94	11,787.00	84.19

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
9:06:48PM 7/6/2014

Calibration

Sample Name: IC-8876;AV178-20140706
Description:
Detector: AV178

Analyst: 60040
Analysis Date: 7/6/2014 9:06:47PM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82235-334
Prepared by: Analytics
Description:

Certification Date: 6/4/2010 12:00:00PM

Acquisition

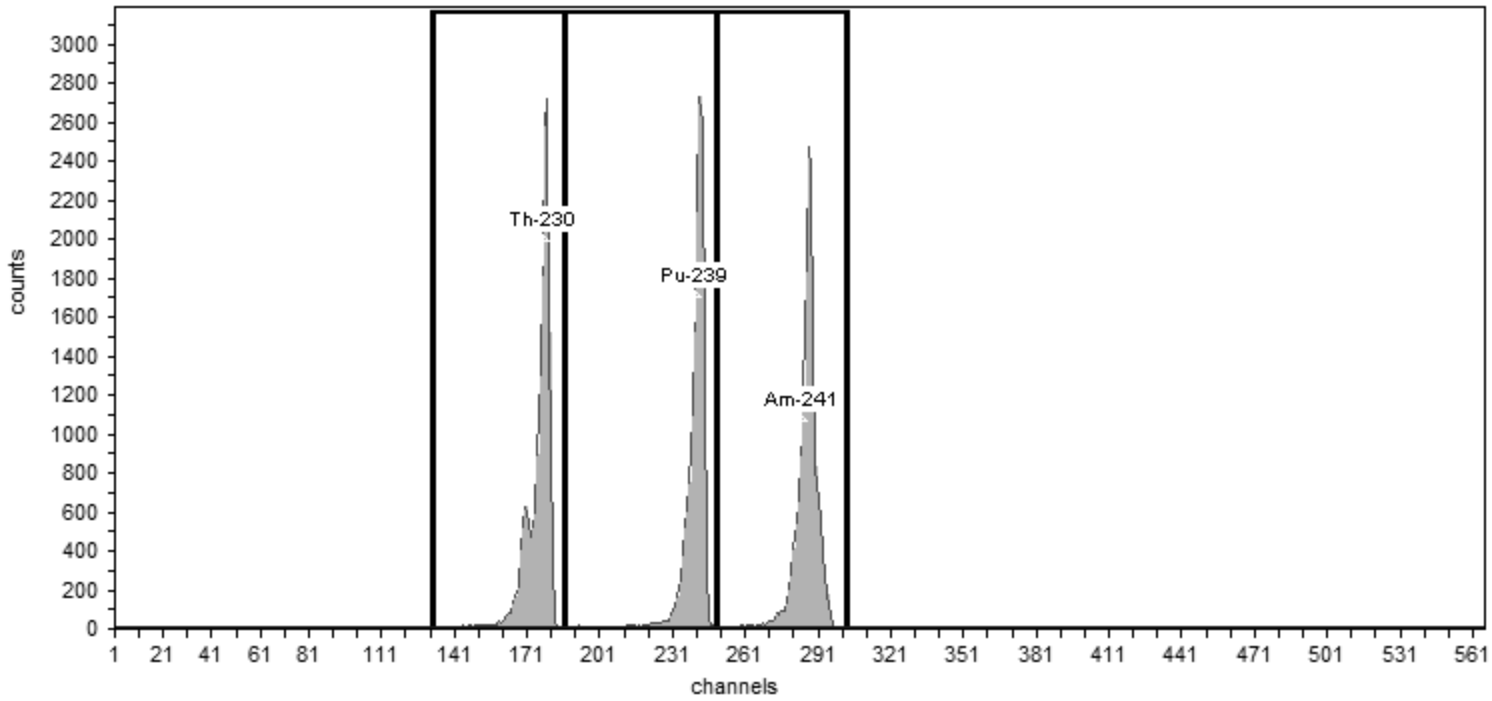
Detector: AV178 , SN: 50-117H4
Acquisition Start Date: 7/6/2014 6:46:15PM

Live Time: 140.00 min.
Real Time: 140.01 min.

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency Calibration Name: IC-8876;AV178-20140706

Efficiency: 25.92% +/- 0.30% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: Yes
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	30.00	15,832.00	113.09
Pu-239	240	5,155.40	186	249	32.25	15,008.00	107.20
Am-241	284	5,485.70	249	303	32.36	15,963.00	114.02

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
7:03:26PM 7/21/2014

Calibration

Sample Name: IC-9792;AV181-20140702
Description:
Detector: AV181

Analyst: 60040
Analysis Date: 7/6/2014 6:16:08PM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82240-334
Prepared by: Analytics
Description:

Certification Date: 6/8/2010 12:00:00PM

Acquisition

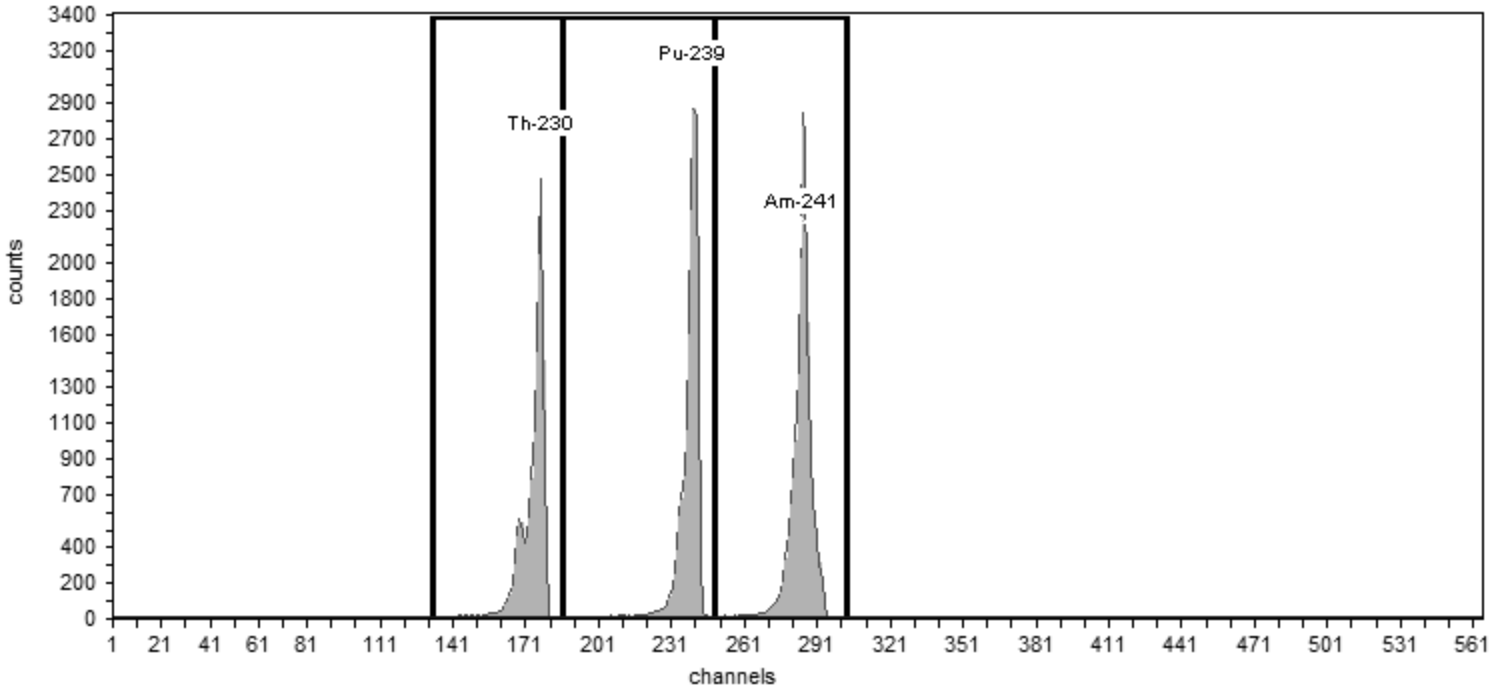
Detector: AV181 , SN: 50-110X1
Acquisition Start Date: 7/2/2014 9:00:50AM

Live Time: 140.00 min.
Real Time: 140.01 min.

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency Calibration Name: IC-9792;AV181-20140702

Efficiency: 26.19% +/- 0.31% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: Yes
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	28.18	13,782.00	98.44
Pu-239	240	5,155.40	186	249	32.37	15,982.00	114.16
Am-241	284	5,485.70	249	303	31.75	18,013.00	128.66

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
7:03:32PM 7/21/2014

Calibration

Sample Name: IC-9793;AV182-20140702
Description:
Detector: AV182

Analyst: 60040
Analysis Date: 7/6/2014 6:16:24PM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82241-334
Prepared by: Analytics
Description:

Certification Date: 6/8/2010 12:00:00PM

Acquisition

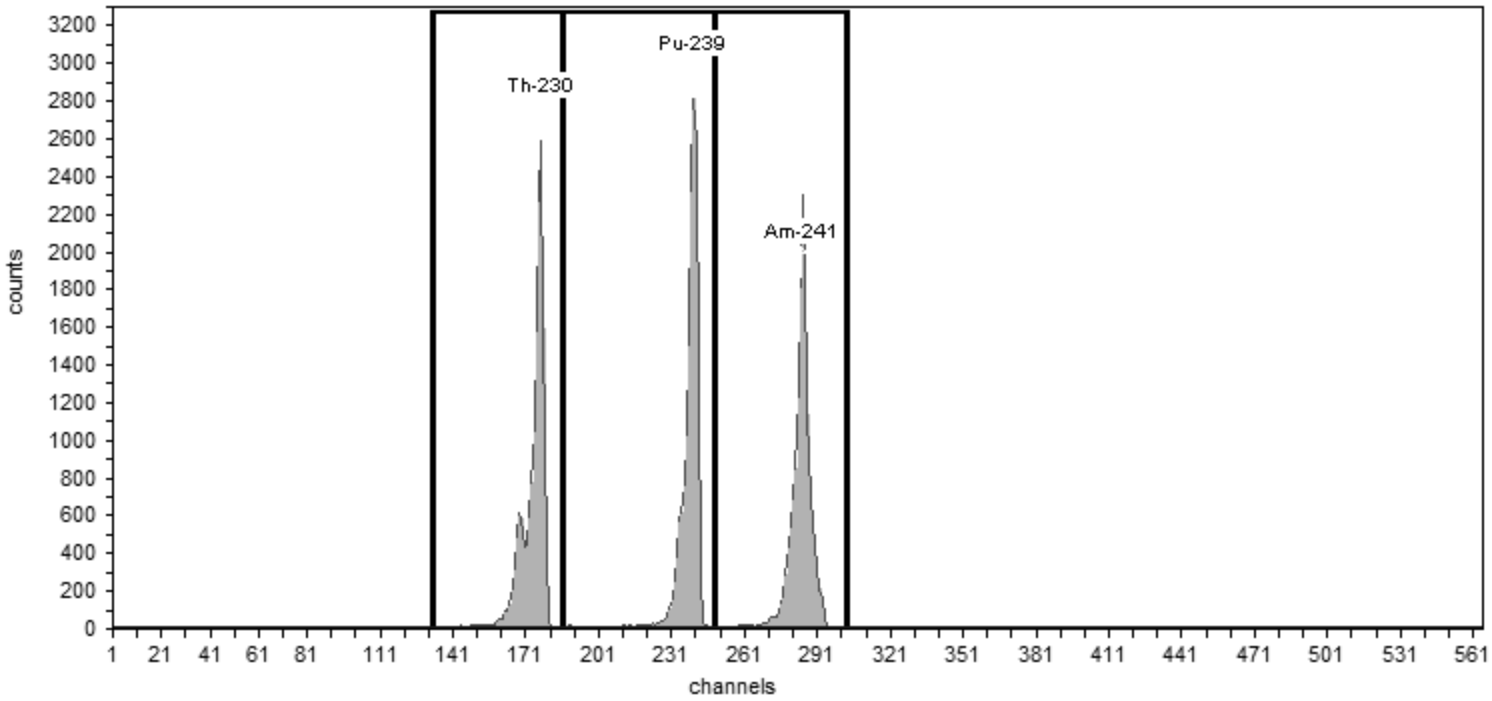
Detector: AV182 , SN: 50-110X6
Acquisition Start Date: 7/2/2014 9:01:02AM

Live Time: 140.00 min.
Real Time: 140.01 min.

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency Calibration Name: IC-9793;AV182-20140702

Efficiency: 26.13% +/- 0.32% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: Yes
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	28.14	14,492.00	103.51
Pu-239	240	5,155.40	186	249	30.75	15,030.00	107.36
Am-241	284	5,485.70	249	303	31.10	14,439.00	103.14

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
12:04:48PM 7/2/2014

Calibration

Sample Name: IC-7107;AV189-20140702
Description:
Detector: AV189

Analyst: 60040
Analysis Date: 7/2/2014 12:04:46PM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82232-334
Prepared by: Analytics
Description:

Certification Date: 6/3/2010 12:00:00PM

Acquisition

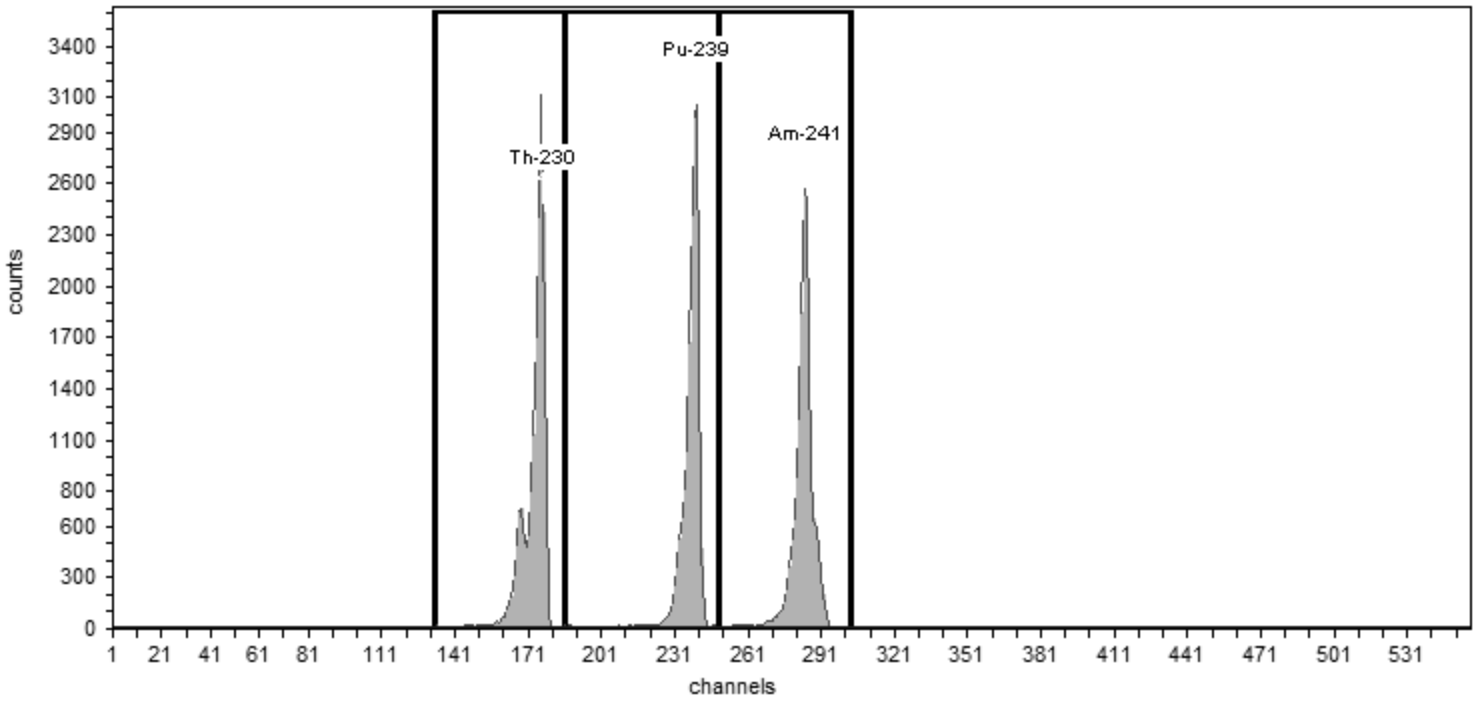
Detector: AV189 , SN: 50-112A3
Acquisition Start Date: 7/2/2014 9:03:34AM

Live Time: 140.00 min.
Real Time: 140.01 min.

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency Calibration Name: IC-7107;AV189-20140702

Efficiency: 27.01% +/- 0.30% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: Yes
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	28.30	16,980.00	121.29
Pu-239	240	5,155.40	186	249	33.18	16,768.00	119.77
Am-241	284	5,485.70	249	303	32.53	16,240.00	116.00

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
7:03:49PM 7/21/2014

Calibration

Sample Name: IC-8874;AV190-20140702
Description:
Detector: AV190

Analyst: 60040
Analysis Date: 7/2/2014 12:04:50PM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82233-334
Prepared by: Analytics
Description:

Certification Date: 6/3/2010 12:00:00PM

Acquisition

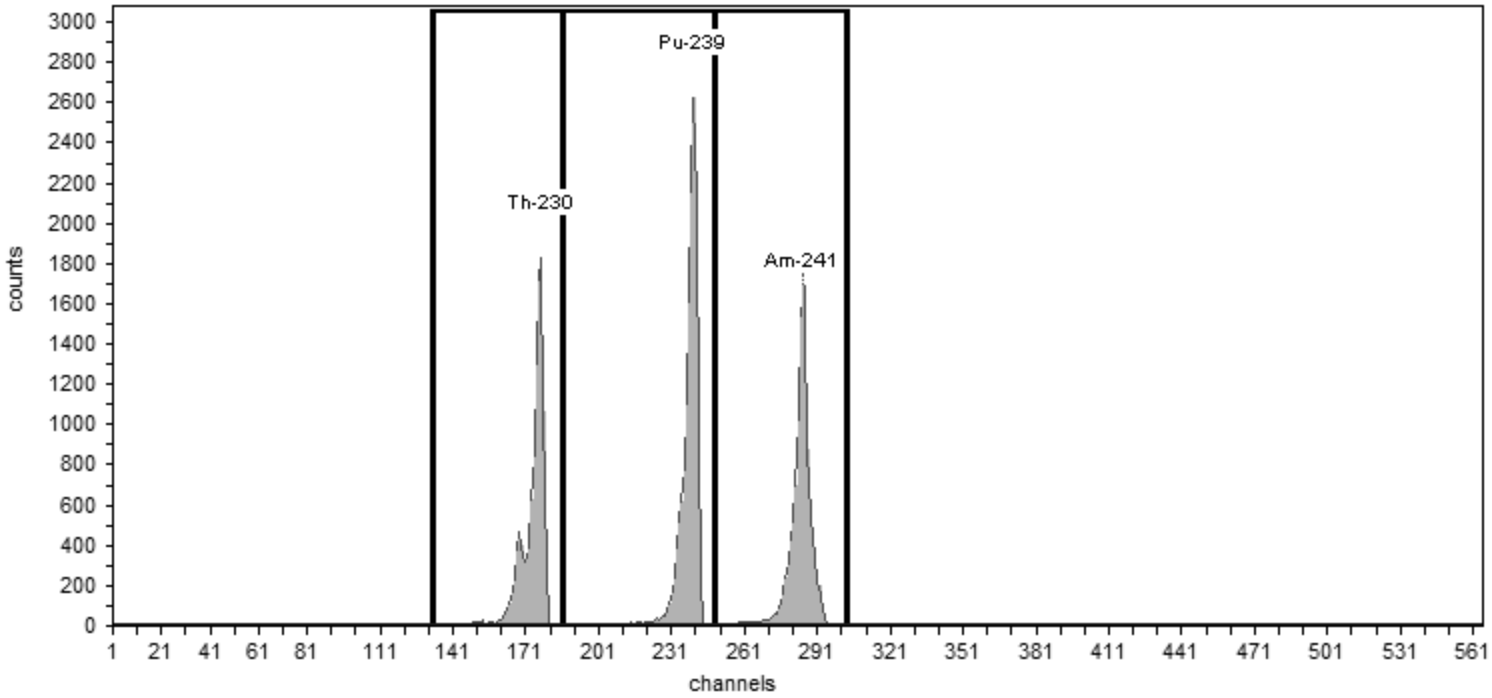
Detector: AV190 , SN: 50-119I7
Acquisition Start Date: 7/2/2014 9:03:43AM

Live Time: 140.00 min.
Real Time: 140.01 min.

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency Calibration Name: IC-8874;AV190-20140702

Efficiency: 26.72% +/- 0.38% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: Yes
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	30.13	10,697.00	76.41
Pu-239	240	5,155.40	186	249	31.83	13,976.00	99.83
Am-241	284	5,485.70	249	303	31.28	11,456.00	81.83

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
12:04:54PM 7/2/2014

Calibration

Sample Name: IC-8875;AV191-20140702
Description:
Detector: AV191

Analyst: 60040
Analysis Date: 7/2/2014 12:04:53PM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82234-334
Prepared by: Analytics
Description:

Certification Date: 6/2/2010 12:00:00PM

Acquisition

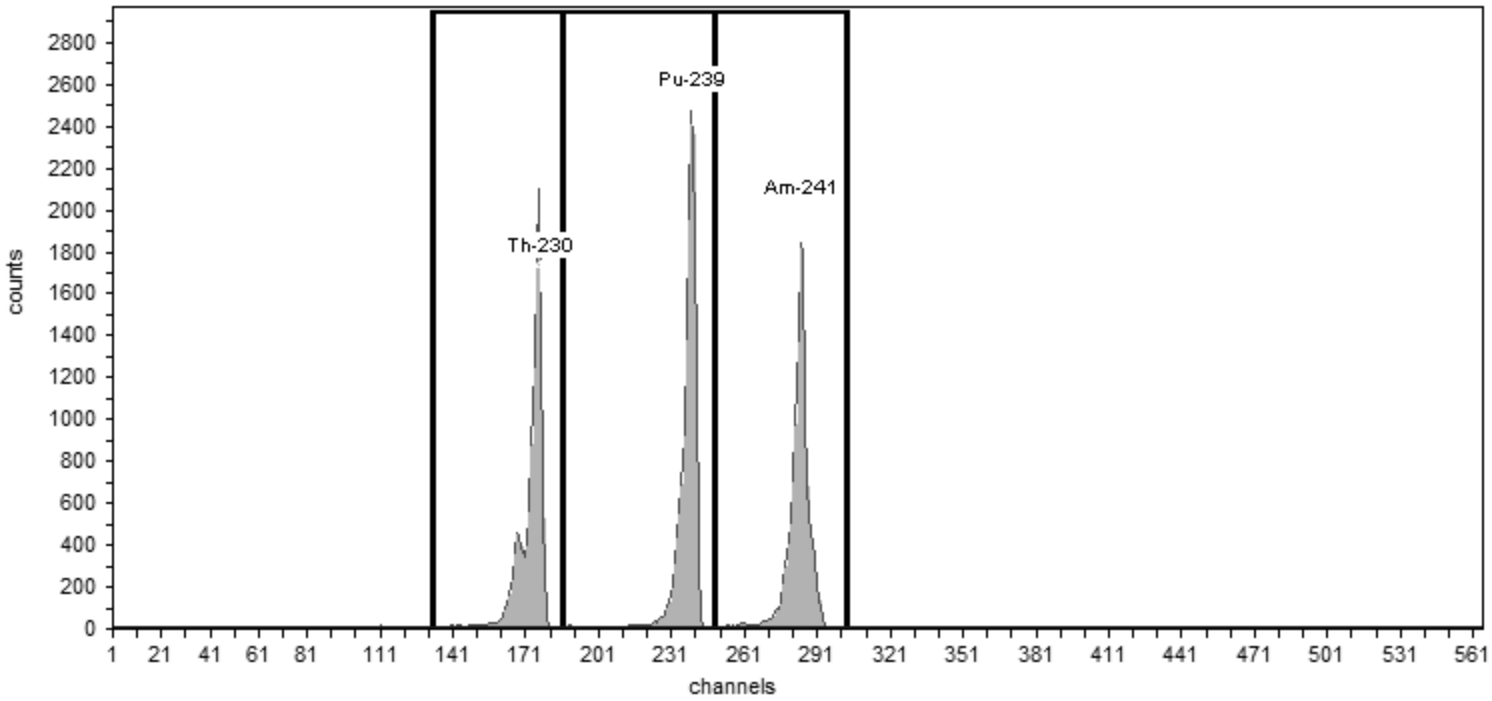
Detector: AV191 , SN: 50-112A2
Acquisition Start Date: 7/2/2014 9:04:00AM

Live Time: 140.00 min.
Real Time: 140.01 min.

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency Calibration Name: IC-8875;AV191-20140702

Efficiency: 25.81% +/- 0.36% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: Yes
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	29.91	11,918.00	85.13
Pu-239	240	5,155.40	186	249	32.38	13,503.00	96.45
Am-241	284	5,485.70	249	303	33.61	12,019.00	85.85

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
12:04:57PM 7/2/2014

Calibration

Sample Name: IC-8876;AV192-20140702
Description:
Detector: AV192

Analyst: 60040
Analysis Date: 7/2/2014 12:04:57PM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82235-334
Prepared by: Analytics
Description:

Certification Date: 6/4/2010 12:00:00PM

Acquisition

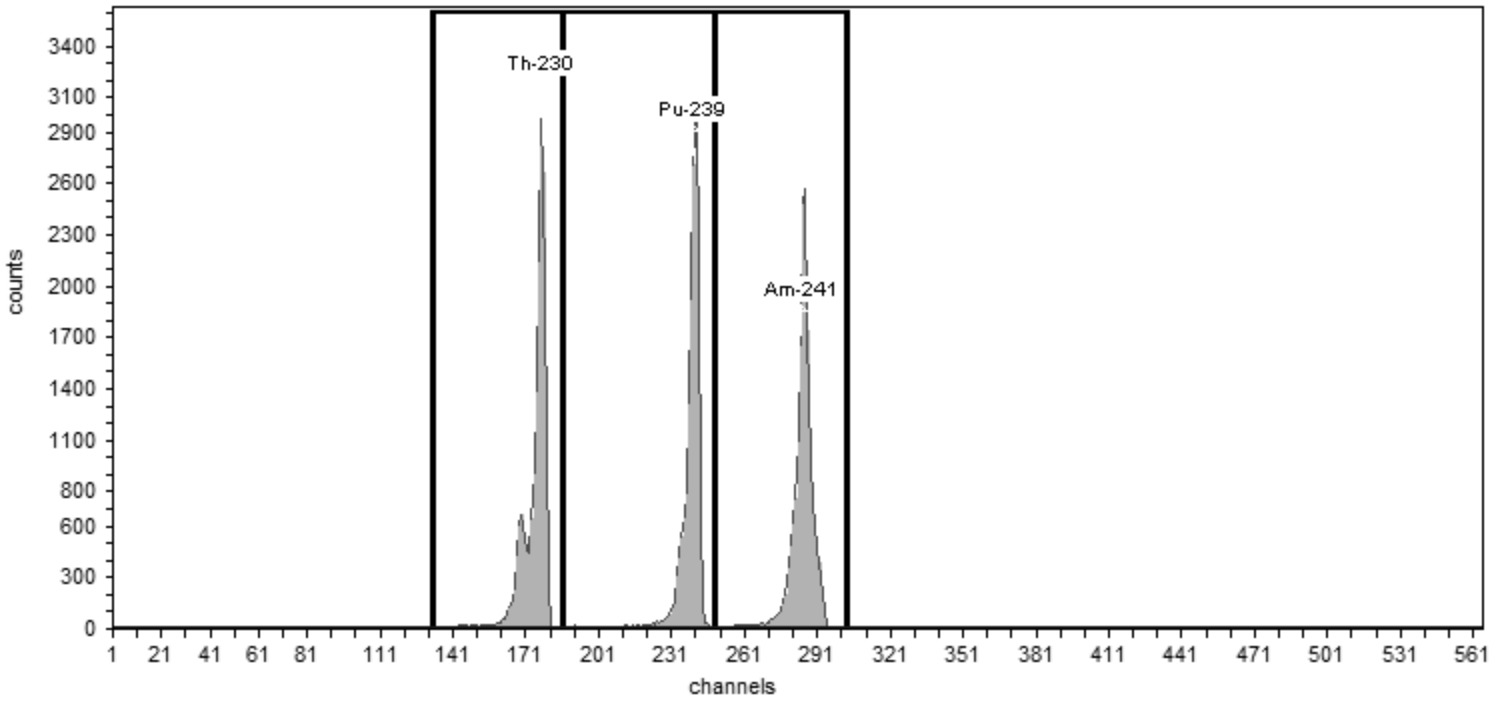
Detector: AV192 , SN: 50-119J7
Acquisition Start Date: 7/2/2014 9:04:11AM

Live Time: 140.00 min.
Real Time: 140.01 min.

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency Calibration Name: IC-8876;AV192-20140702

Efficiency: 26.37% +/- 0.31% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: Yes
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	27.14	16,126.00	115.19
Pu-239	240	5,155.40	186	249	29.71	15,359.00	109.71
Am-241	284	5,485.70	249	303	31.82	16,134.00	115.24

Initial Calibration Verifications

Alpha Spectroscopy Calibration Summary

Detector: AV165

Lab Sample ID	Analysis Date	Reagent ID	Efficiency	Efficiency Limits	Efficiency Recovery	Recovery Limits
IC 160-130240/1	07/06/14 21:29	82236-334_00001	0.2655	0.20-0.32		
ICV 160-130508/1	07/09/14 00:44	82237-334_00003	0.2631	0.20-0.32	99.1	95-105
CCV 160-158316/1	11/19/14 18:45	82236-334_00001	0.2649	0.20-0.32	99.8	95-105

Detector: AV168

Lab Sample ID	Analysis Date	Reagent ID	Efficiency	Efficiency Limits	Efficiency Recovery	Recovery Limits
IC 160-129705/1	07/06/14 18:43	82241-334_00001	0.2632	0.20-0.32		
ICV 160-130510/1	07/09/14 00:44	82242-334_00001	0.2558	0.20-0.32	97.2	95-105
CCV 160-158317/1	11/19/14 18:45	82241-334_00001	0.2567	0.20-0.32	97.5	95-105

Detector: AV174

Lab Sample ID	Analysis Date	Reagent ID	Efficiency	Efficiency Limits	Efficiency Recovery	Recovery Limits
IC 160-129711/1	07/06/14 18:45	82247-334_00001	0.2547	0.20-0.32		
ICV 160-131007/1	07/13/14 18:26	82232-334_00001	0.2538	0.20-0.32	99.7	95-105
CCV 160-158321/1	11/19/14 01:09	82247-334_00001	0.2514	0.20-0.32	98.7	95-105

Detector: AV176

Lab Sample ID	Analysis Date	Reagent ID	Efficiency	Efficiency Limits	Efficiency Recovery	Recovery Limits
IC 160-129713/1	07/06/14 18:45	82233-334_00001	0.2663	0.20-0.32		
ICV 160-130518/1	07/09/14 18:38	82234-334_00001	0.2575	0.20-0.32	96.7	95-105
CCV 160-158322/1	11/19/14 18:46	82233-334_00001	0.2629	0.20-0.32	98.7	95-105

Detector: AV177

Lab Sample ID	Analysis Date	Reagent ID	Efficiency	Efficiency Limits	Efficiency Recovery	Recovery Limits
IC 160-129714/1	07/06/14 18:45	82234-334_00001	0.2529	0.20-0.32		
ICV 160-130519/1	07/09/14 18:39	82235-334_00001	0.2565	0.20-0.32	101.4	95-105
CCV 160-158323/1	11/19/14 21:14	82234-334_00001	0.2526	0.20-0.32	99.9	95-105

Detector: AV178

Lab Sample ID	Analysis Date	Reagent ID	Efficiency	Efficiency Limits	Efficiency Recovery	Recovery Limits
IC 160-129715/1	07/06/14 18:46	82235-334_00001	0.2592	0.20-0.32		
ICV 160-130520/1	07/09/14 18:39	82236-334_00001	0.2597	0.20-0.32	100.2	95-105
CCV 160-158324/1	11/19/14 01:10	82235-334_00001	0.2558	0.20-0.32	98.7	95-105

Detector: AV181

Lab Sample ID	Analysis Date	Reagent ID	Efficiency	Efficiency Limits	Efficiency Recovery	Recovery Limits
IC 160-129668/1	07/02/14 09:00	82240-334_00001	0.2619	0.20-0.32		
ICV 160-130523/1	07/09/14 18:40	82241-334_00001	0.2632	0.20-0.32	100.5	95-105
CCV 160-158241/2	11/18/14 20:50	82240-334_00001	0.2584	0.20-0.32	98.7	95-105

Detector: AV182

Lab Sample ID	Analysis Date	Reagent ID	Efficiency	Efficiency Limits	Efficiency Recovery	Recovery Limits
IC 160-129669/1	07/02/14 09:01	82241-334_00001	0.2613	0.20-0.32		
ICV 160-130524/1	07/09/14 18:40	82242-334_00001	0.2545	0.20-0.32	97.4	95-105
CCV 160-158325/1	11/19/14 21:14	82241-334_00001	0.2594	0.20-0.32	99.3	95-105

Alpha Spectroscopy Calibration Summary

Detector: AV189

Lab Sample ID	Analysis Date	Reagent ID	Efficiency	Efficiency Limits	Efficiency Recovery	Recovery Limits
IC 160-129676/1	07/02/14 09:03	82232-334_00001	0.2701	0.20-0.32		
ICV 160-130531/1	07/09/14 19:54	82233-334_00001	0.2679	0.20-0.32	99.2	95-105
CCV 160-158249/2	11/18/14 22:23	82232-334_00001	0.2678	0.20-0.32	99.1	95-105

Detector: AV190

Lab Sample ID	Analysis Date	Reagent ID	Efficiency	Efficiency Limits	Efficiency Recovery	Recovery Limits
IC 160-129677/1	07/02/14 09:03	82233-334_00001	0.2672	0.20-0.32		
ICV 160-130532/1	07/09/14 19:54	82234-334_00001	0.2575	0.20-0.32	96.4	95-105
CCV 160-158250/2	11/18/14 20:50	82233-334_00001	0.2719	0.20-0.32	101.8	95-105

Detector: AV191

Lab Sample ID	Analysis Date	Reagent ID	Efficiency	Efficiency Limits	Efficiency Recovery	Recovery Limits
IC 160-129678/1	07/02/14 09:04	82234-334_00001	0.2581	0.20-0.32		
ICV 160-130533/1	07/09/14 19:55	82235-334_00001	0.2628	0.20-0.32	101.8	95-105
CCV 160-158251/2	11/18/14 22:24	82234-334_00001	0.2543	0.20-0.32	98.5	95-105

Detector: AV192

Lab Sample ID	Analysis Date	Reagent ID	Efficiency	Efficiency Limits	Efficiency Recovery	Recovery Limits
IC 160-129679/1	07/02/14 09:04	82235-334_00001	0.2637	0.20-0.32		
ICV 160-130534/1	07/09/14 19:55	82236-334_00001	0.2627	0.20-0.32	99.6	95-105
CCV 160-158252/2	11/18/14 20:50	82235-334_00001	0.2588	0.20-0.32	98.2	95-105

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THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
7:09:04PM 7/21/2014

Calibration

Sample Name: ICV-9520;AV165-20140709
Description:
Detector: AV165

Analyst: 60040
Analysis Date: 7/9/2014 6:25:57PM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82237-334
Prepared by: Analytics
Description:

Certification Date: 6/1/2010 12:00:00PM

Acquisition

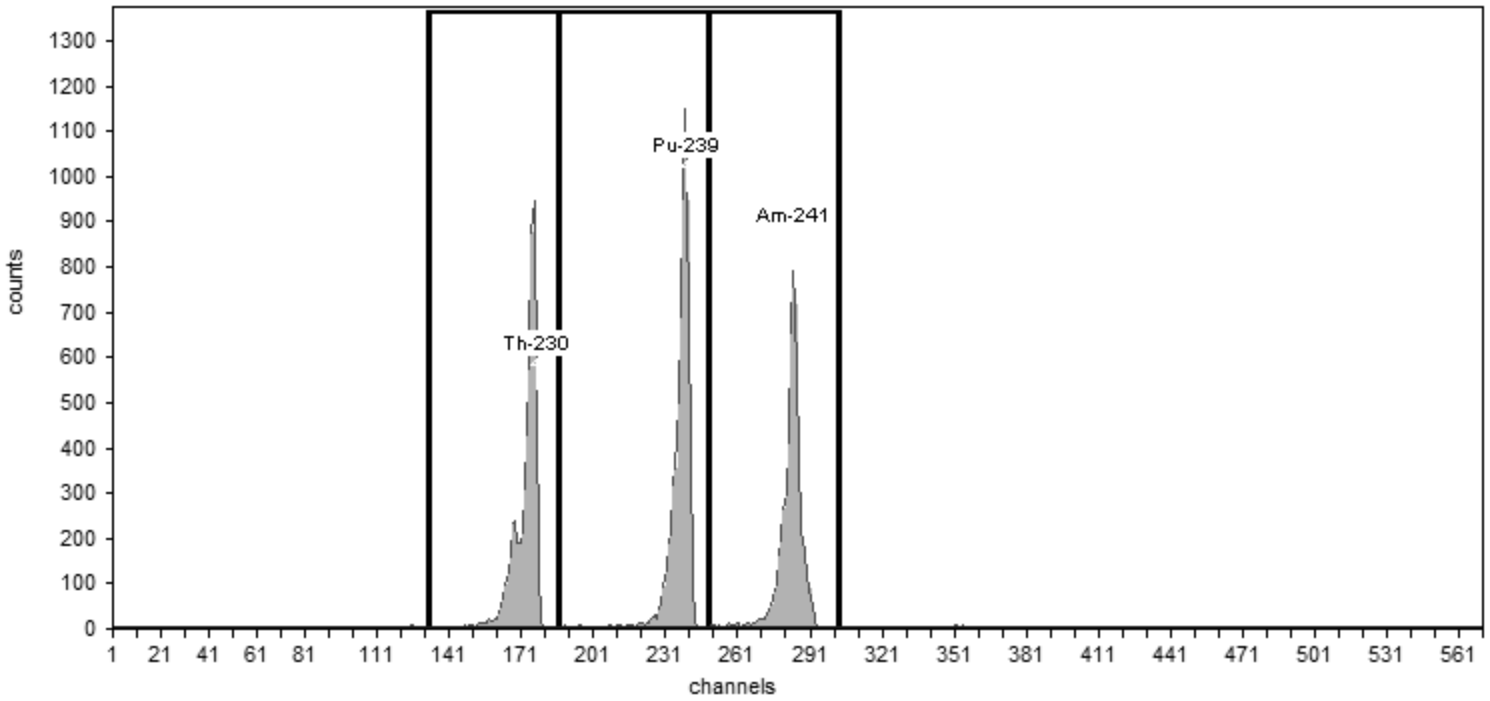
Detector: AV165 , SN: 50-112F7
Acquisition Start Date: 7/9/2014 12:44:16AM

Live Time: 60.00 min.
Real Time: 60.00 min.

Efficiency Calibration Name: ICV-9520;AV165-2014070

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 26.31% +/- 0.47% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	28.11	5,494.00	91.57
Pu-239	240	5,155.40	186	249	31.87	6,282.00	104.70
Am-241	284	5,485.70	249	303	30.44	5,136.00	85.60

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THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
6:26:19PM 7/9/2014

Calibration

Sample Name: ICV-9794;AV168-20140709
Description:
Detector: AV168

Analyst: 60040
Analysis Date: 7/9/2014 6:26:17PM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82242-334
Prepared by: Analytics
Description:

Certification Date: 6/8/2010 12:00:00PM

Acquisition

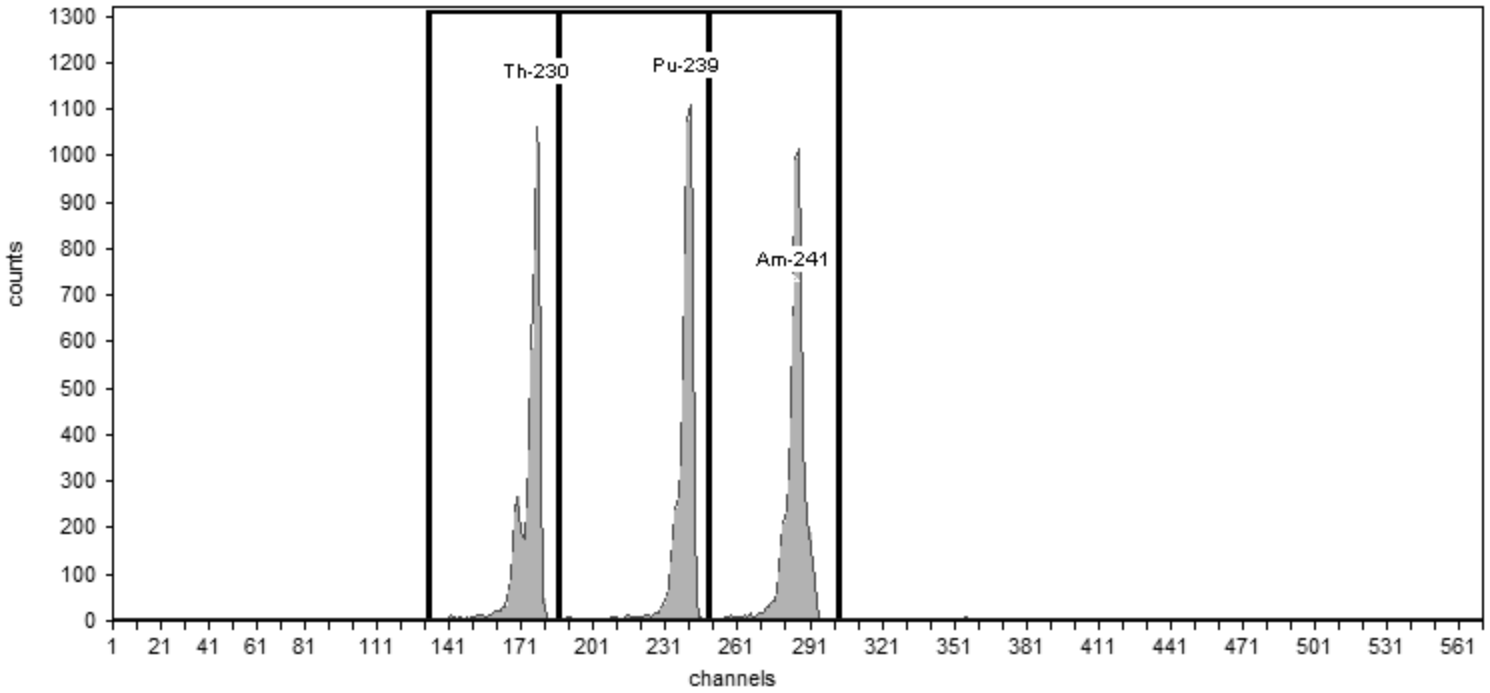
Detector: AV168 , SN: 50-113 G4
Acquisition Start Date: 7/9/2014 12:44:54AM

Live Time: 60.00 min.
Real Time: 60.00 min.

Efficiency Calibration Name: ICV-9794;AV168-2014070

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 25.58% +/- 0.43% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	29.56	6,014.00	100.23
Pu-239	240	5,155.40	186	249	31.59	5,991.00	99.85
Am-241	284	5,485.70	249	303	32.57	6,512.00	108.53

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
7:27:49PM 7/13/2014

Calibration

Sample Name: ICV-7107;AV174-20140713a
Description:
Detector: AV174

Analyst: 60040
Analysis Date: 7/13/2014 7:27:48PM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82232-334
Prepared by: Analytics
Description:

Certification Date: 6/3/2010 12:00:00PM

Acquisition

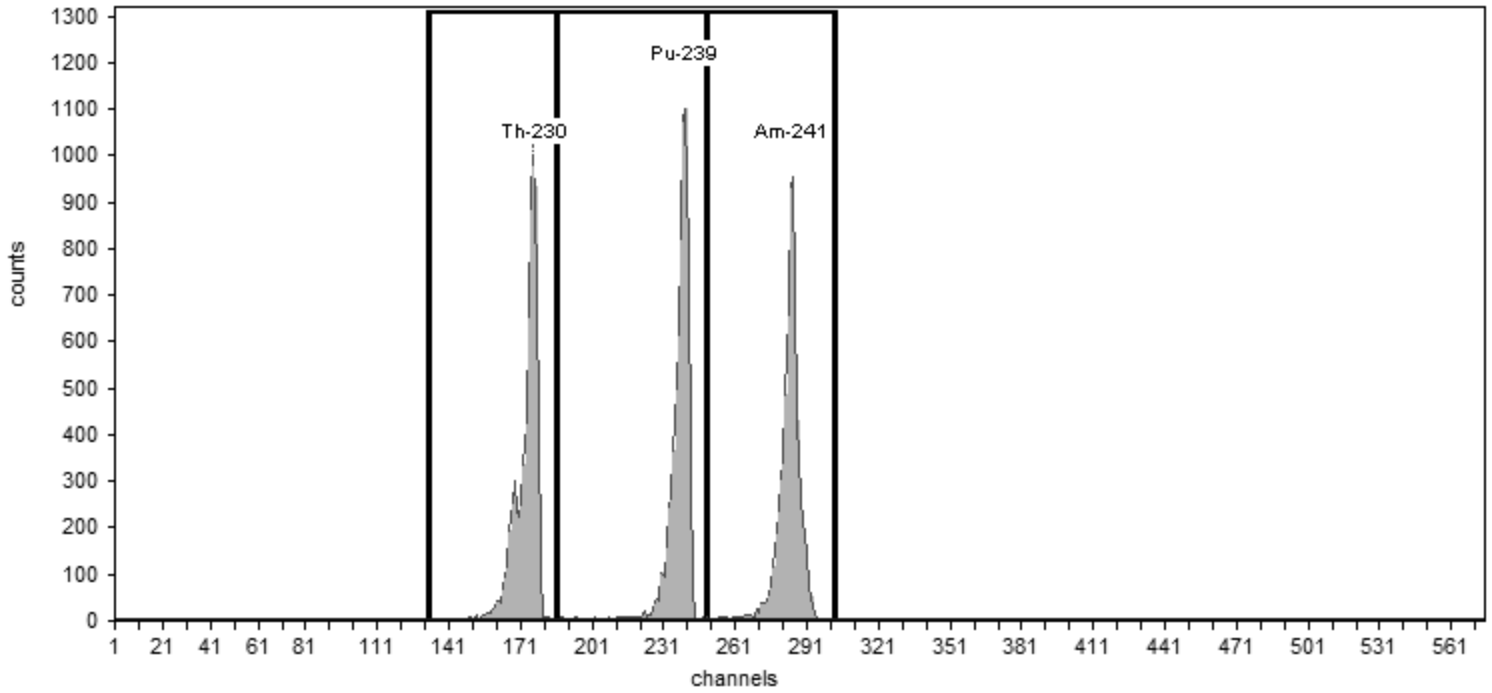
Detector: AV174 , SN: 50-112Y5
Acquisition Start Date: 7/13/2014 6:26:06PM

Live Time: 60.00 min.
Real Time: 60.00 min.

Efficiency Calibration Name: ICV-7107;AV174-2014071

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch²

Efficiency: 25.38% +/- 0.40% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	33.17	6,728.00	112.13
Pu-239	240	5,155.40	186	249	37.64	6,776.00	112.93
Am-241	284	5,485.70	249	303	36.29	6,628.00	110.47

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
7:48:54PM 7/9/2014

Calibration

Sample Name: ICV-8875;AV176-20140709
Description:
Detector: AV176

Analyst: 60040
Analysis Date: 7/9/2014 7:48:53PM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82234-334
Prepared by: Analytics
Description:

Certification Date: 6/2/2010 12:00:00PM

Acquisition

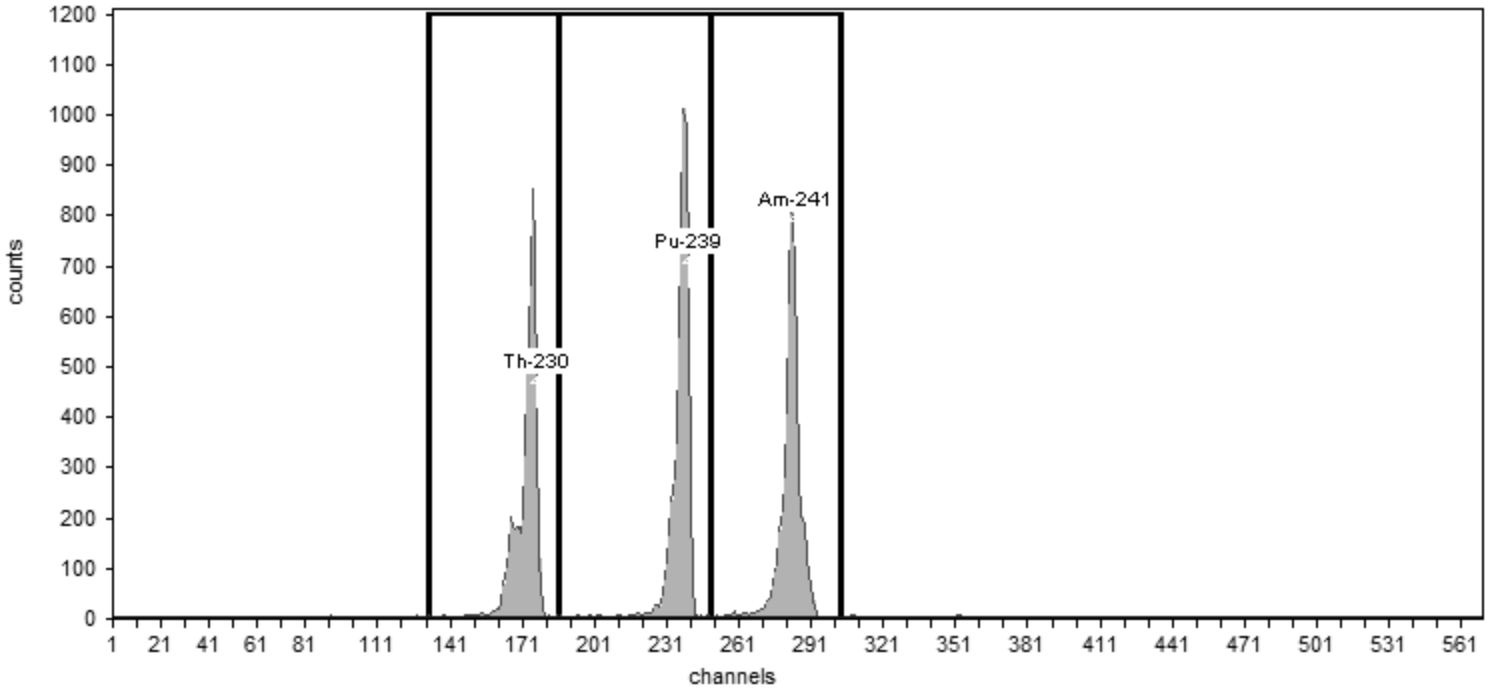
Detector: AV176 , SN: 50-117H2
Acquisition Start Date: 7/9/2014 6:38:53PM

Live Time: 60.00 min.
Real Time: 60.01 min.

Efficiency Calibration Name: ICV-8875;AV176-2014070

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 25.75% +/- 0.47% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	31.95	5,121.00	85.35
Pu-239	240	5,155.40	186	249	34.25	5,687.00	94.78
Am-241	284	5,485.70	249	303	31.98	5,187.00	86.45

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
7:48:57PM 7/9/2014

Calibration

Sample Name: ICV-8876;AV177-20140709
Description:
Detector: AV177

Analyst: 60040
Analysis Date: 7/9/2014 7:48:56PM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82235-334
Prepared by: Analytics
Description:

Certification Date: 6/4/2010 12:00:00PM

Acquisition

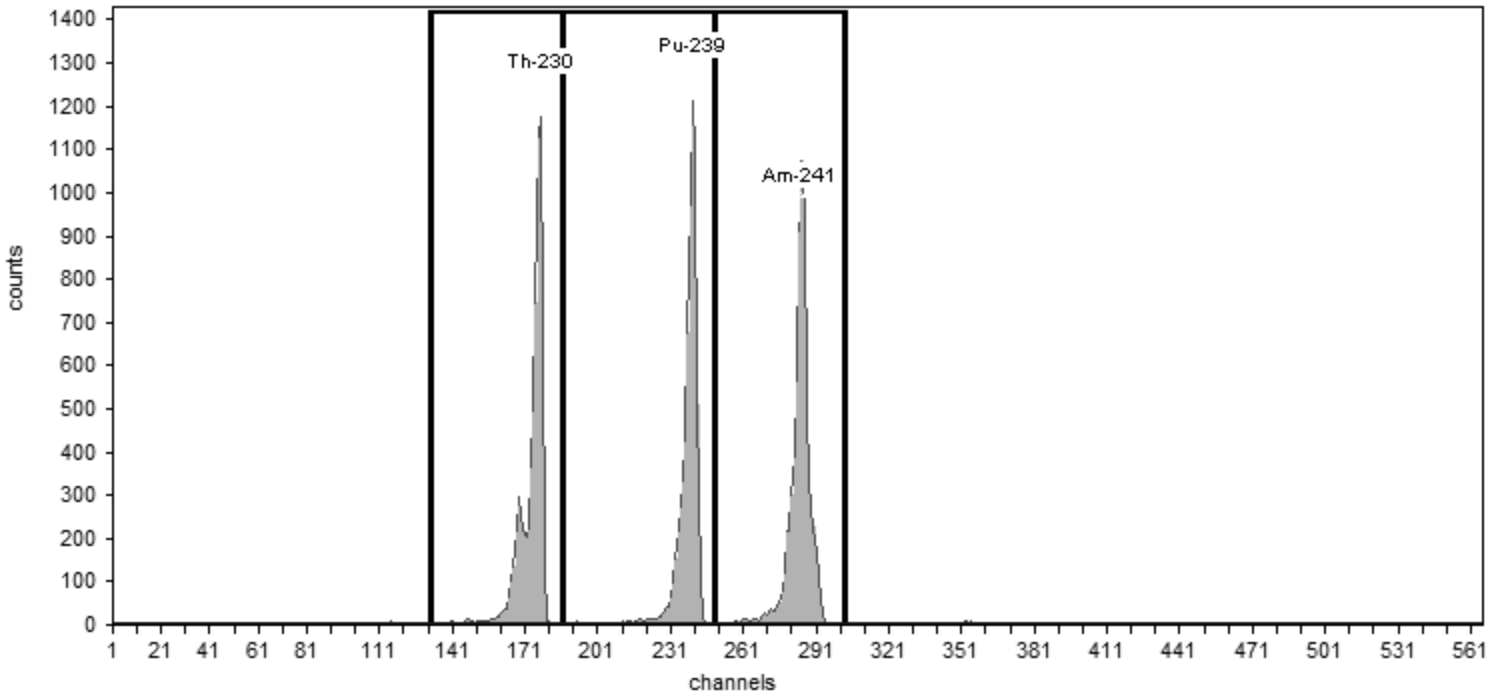
Detector: AV177 , SN: 50-117H3
Acquisition Start Date: 7/9/2014 6:39:05PM

Live Time: 60.00 min.
Real Time: 60.00 min.

Efficiency Calibration Name: ICV-8876;AV177-2014070

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 25.65% +/- 0.41% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	28.37	6,634.00	110.57
Pu-239	240	5,155.40	186	249	30.51	6,384.00	106.40
Am-241	284	5,485.70	249	303	30.43	6,827.00	113.78

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
7:09:28PM 7/21/2014

Calibration

Sample Name: ICV-8877;AV178-20140709
Description:
Detector: AV178

Analyst: 60040
Analysis Date: 7/9/2014 7:49:00PM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82236-334
Prepared by: Analytics
Description:

Certification Date: 6/2/2010 12:00:00PM

Acquisition

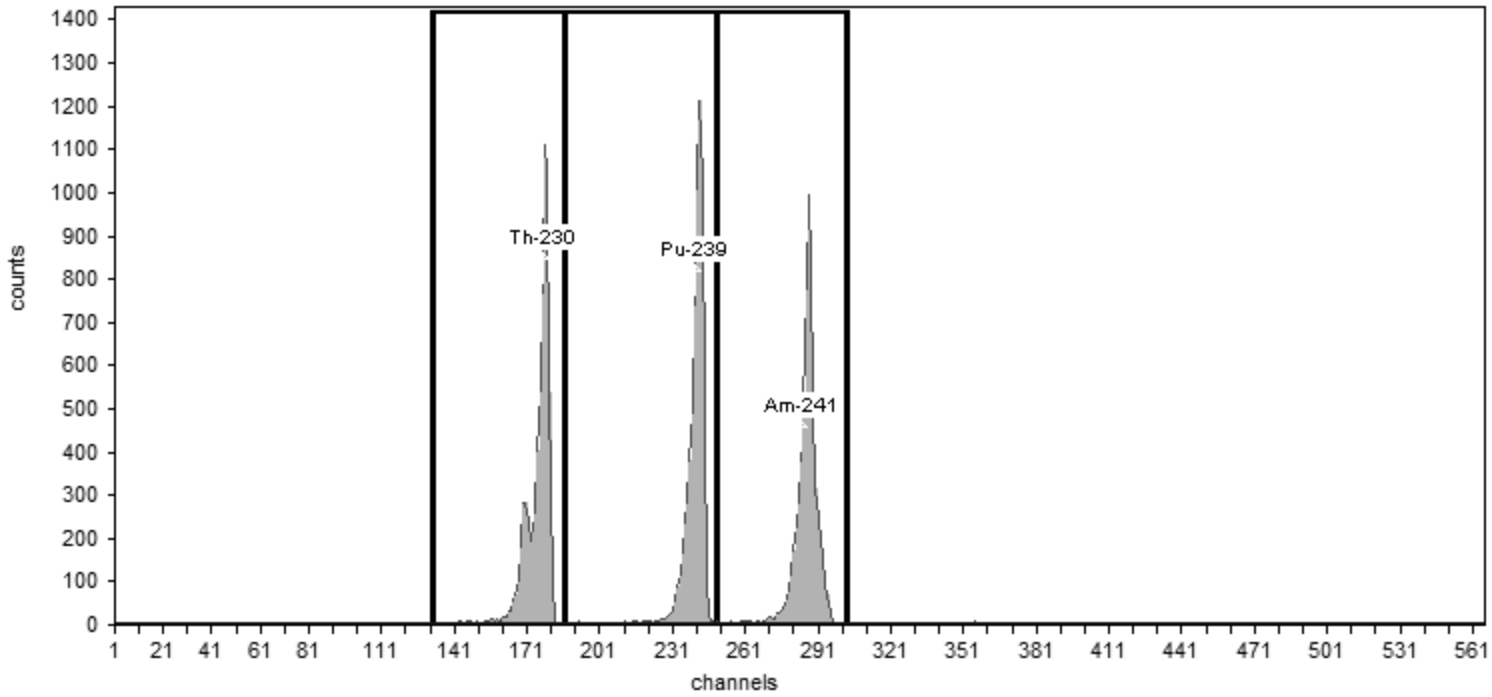
Detector: AV178 , SN: 50-117H4
Acquisition Start Date: 7/9/2014 6:39:18PM

Live Time: 60.00 min.
Real Time: 60.00 min.

Efficiency Calibration Name: ICV-8877;AV178-2014070

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch²

Efficiency: 25.97% +/- 0.42% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	28.86	6,519.00	108.65
Pu-239	240	5,155.40	186	249	31.82	6,559.00	109.32
Am-241	284	5,485.70	249	303	31.09	6,237.00	103.95

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
7:09:35PM 7/21/2014

Calibration

Sample Name: ICV-9793;AV181-20140709
Description:
Detector: AV181

Analyst: 60040
Analysis Date: 7/9/2014 7:49:10PM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82241-334
Prepared by: Analytics
Description:

Certification Date: 6/8/2010 12:00:00PM

Acquisition

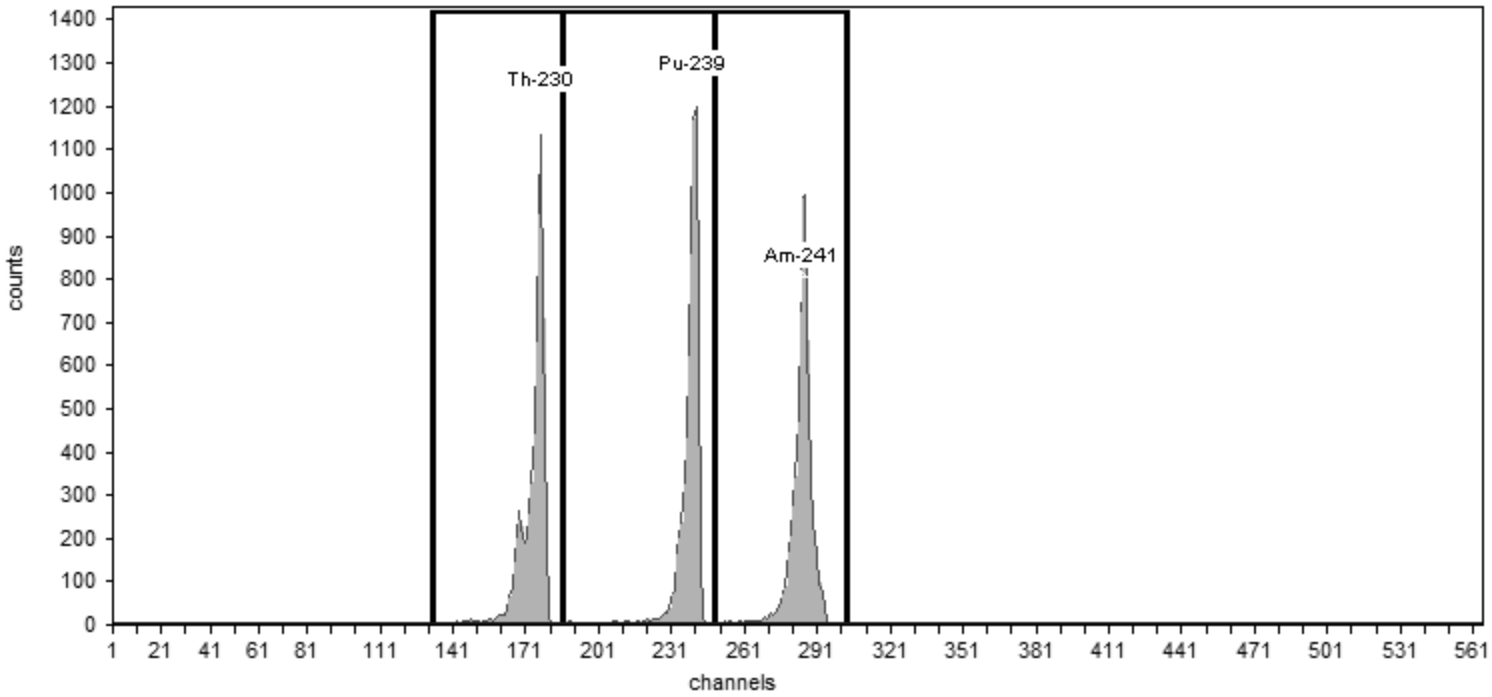
Detector: AV181 , SN: 50-110X1
Acquisition Start Date: 7/9/2014 6:40:05PM

Live Time: 60.00 min.
Real Time: 60.00 min.

Efficiency Calibration Name: ICV-9793;AV181-2014070

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 26.32% +/- 0.43% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	27.50	6,217.00	103.62
Pu-239	240	5,155.40	186	249	31.83	6,412.00	106.87
Am-241	284	5,485.70	249	303	32.91	6,353.00	105.88

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
7:49:14PM 7/9/2014

Calibration

Sample Name: ICV-9794;AV182-20140709
Description:
Detector: AV182

Analyst: 60040
Analysis Date: 7/9/2014 7:49:13PM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82242-334
Prepared by: Analytics
Description:

Certification Date: 6/8/2010 12:00:00PM

Acquisition

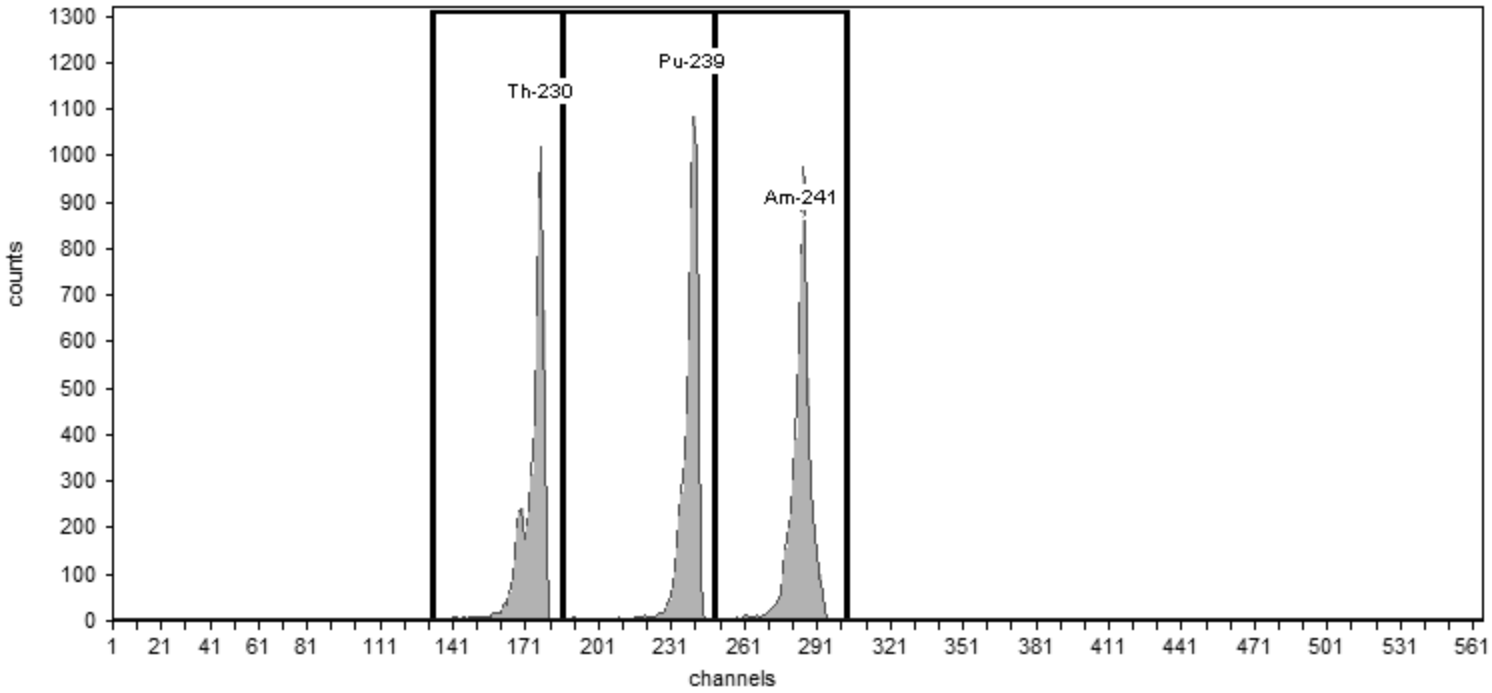
Detector: AV182 , SN: 50-110X6
Acquisition Start Date: 7/9/2014 6:40:16PM

Live Time: 60.00 min.
Real Time: 60.00 min.

Efficiency Calibration Name: ICV-9794;AV182-2014070

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 25.45% +/- 0.43% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	29.32	5,919.00	98.65
Pu-239	240	5,155.40	186	249	31.89	6,025.00	100.42
Am-241	284	5,485.70	249	303	34.17	6,483.00	108.05

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
10:15:08PM 7/9/2014

Calibration

Sample Name: ICV-8874;AV189-20140709
Description:
Detector: AV189

Analyst: 60040
Analysis Date: 7/9/2014 10:15:07PM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82233-334
Prepared by: Analytics
Description:

Certification Date: 6/3/2010 12:00:00PM

Acquisition

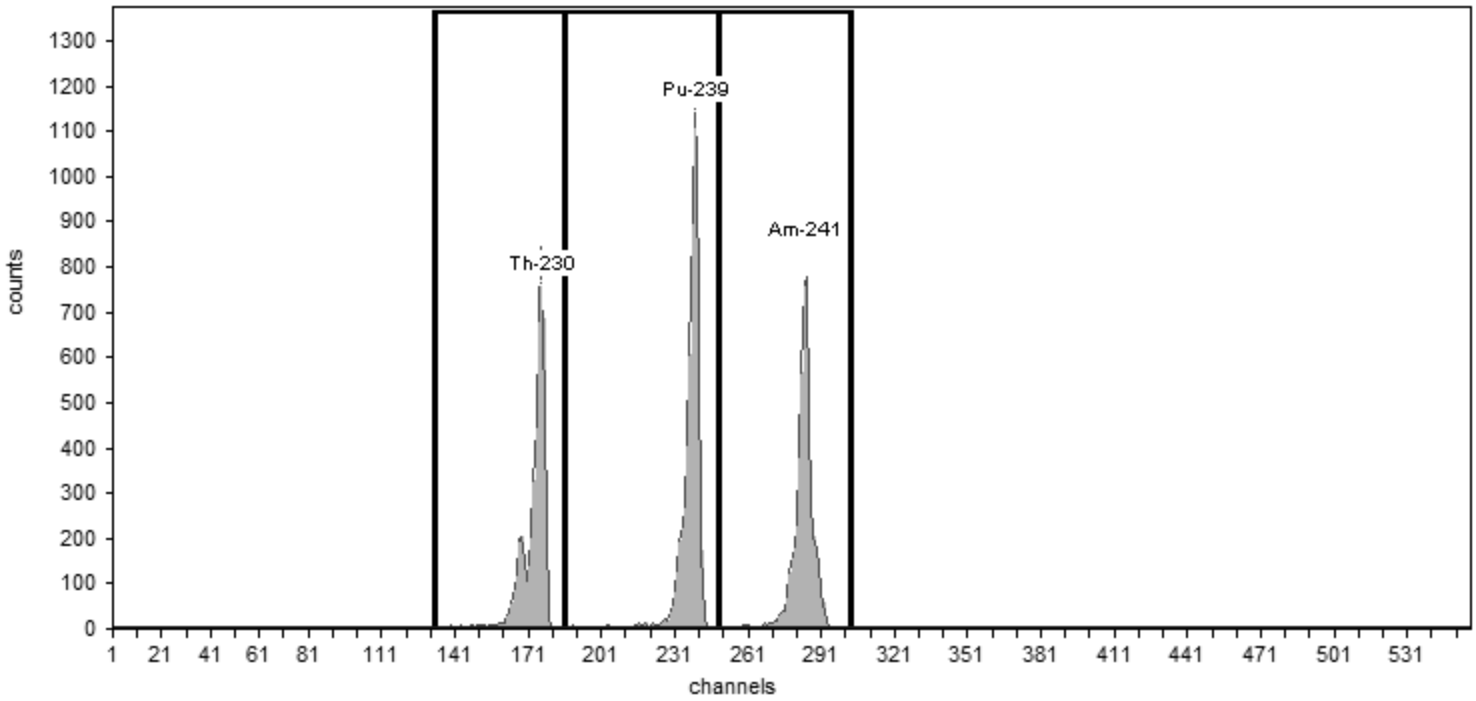
Detector: AV189 , SN: 50-112A3
Acquisition Start Date: 7/9/2014 7:54:47PM

Live Time: 60.00 min.
Real Time: 60.00 min.

Efficiency Calibration Name: ICV-8874;AV189-2014070

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 26.79% +/- 0.50% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	28.09	4,612.00	76.87
Pu-239	240	5,155.40	186	249	32.16	6,077.00	101.28
Am-241	284	5,485.70	249	303	32.45	4,841.00	80.68

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
10:15:11PM 7/9/2014

Calibration

Sample Name: ICV-8875;AV190-20140709
Description:
Detector: AV190

Analyst: 60040
Analysis Date: 7/9/2014 10:15:10PM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82234-334
Prepared by: Analytics
Description:

Certification Date: 6/2/2010 12:00:00PM

Acquisition

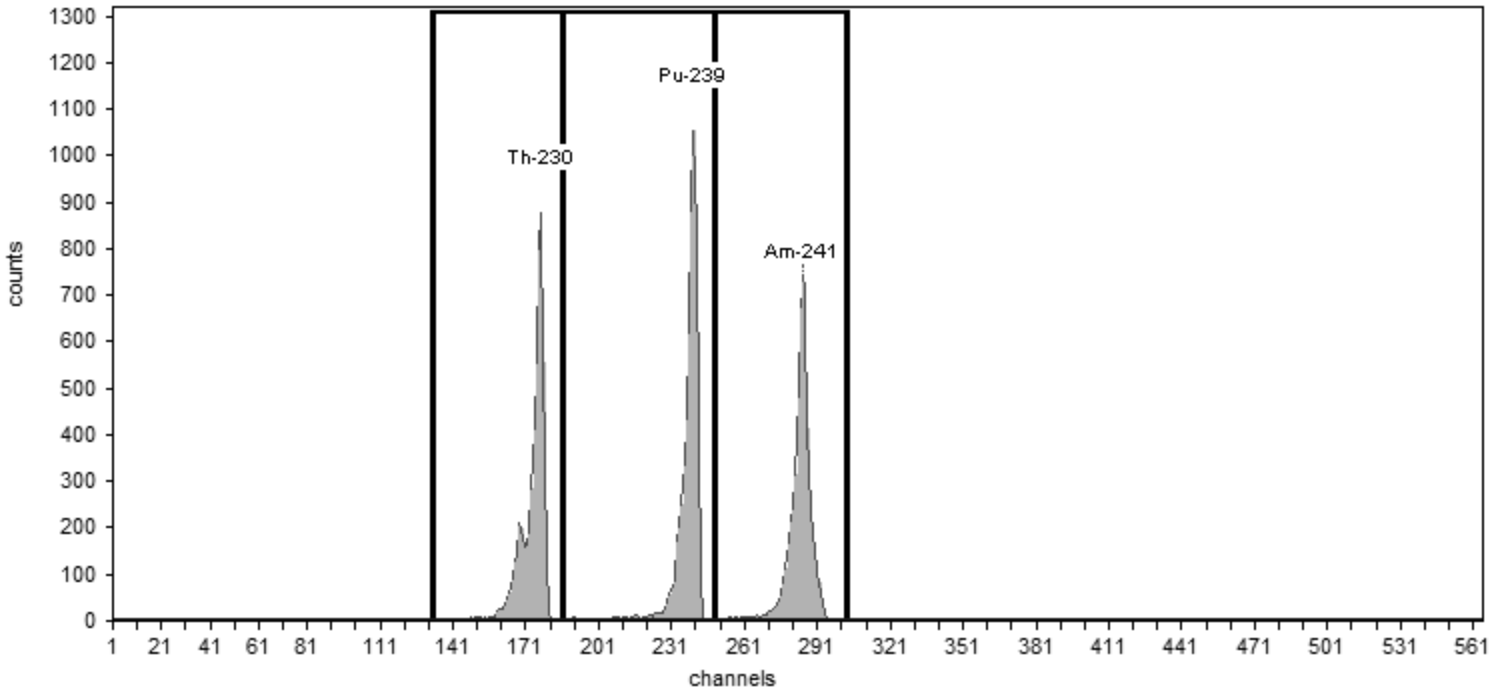
Detector: AV190 , SN: 50-119I7
Acquisition Start Date: 7/9/2014 7:54:59PM

Live Time: 60.00 min.
Real Time: 60.00 min.

Efficiency Calibration Name: ICV-8875;AV190-2014070

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 25.75% +/- 0.47% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	30.53	5,114.00	85.23
Pu-239	240	5,155.40	186	249	31.38	5,678.00	94.63
Am-241	284	5,485.70	249	303	33.88	5,205.00	86.75

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
10:15:15PM 7/9/2014

Calibration

Sample Name: ICV-8876;AV191-20140709
Description:
Detector: AV191

Analyst: 60040
Analysis Date: 7/9/2014 10:15:14PM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82235-334
Prepared by: Analytics
Description:

Certification Date: 6/4/2010 12:00:00PM

Acquisition

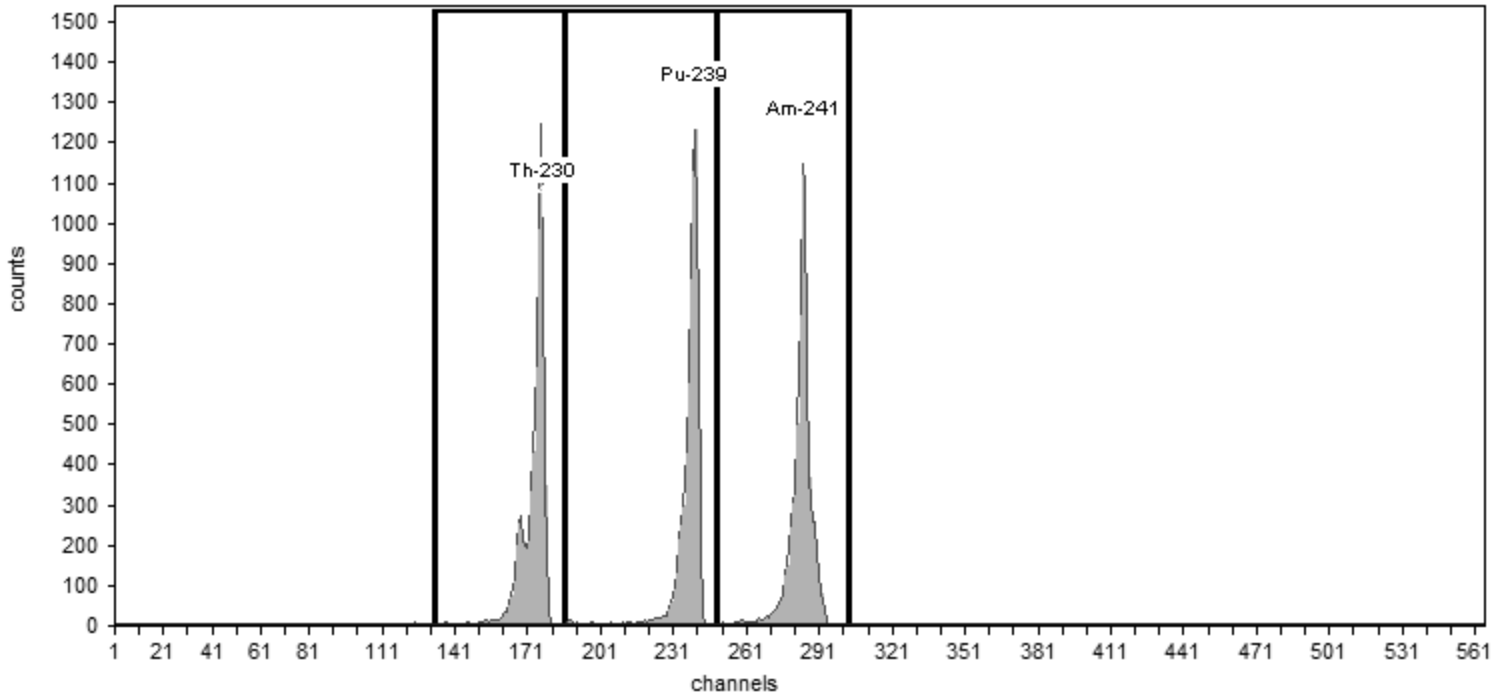
Detector: AV191 , SN: 50-112A2
Acquisition Start Date: 7/9/2014 7:55:12PM

Live Time: 60.00 min.
Real Time: 60.00 min.

Efficiency Calibration Name: ICV-8876;AV191-2014070

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch²

Efficiency: 26.28% +/- 0.41% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	27.36	6,766.00	112.77
Pu-239	240	5,155.40	186	249	31.43	6,541.00	109.02
Am-241	284	5,485.70	249	303	29.87	7,026.00	117.10

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
7:10:02PM 7/21/2014

Calibration

Sample Name: ICV-8877;AV192-20140709
Description:
Detector: AV192

Analyst: 60040
Analysis Date: 7/9/2014 10:15:17PM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82236-334
Prepared by: Analytics
Description:

Certification Date: 6/2/2010 12:00:00PM

Acquisition

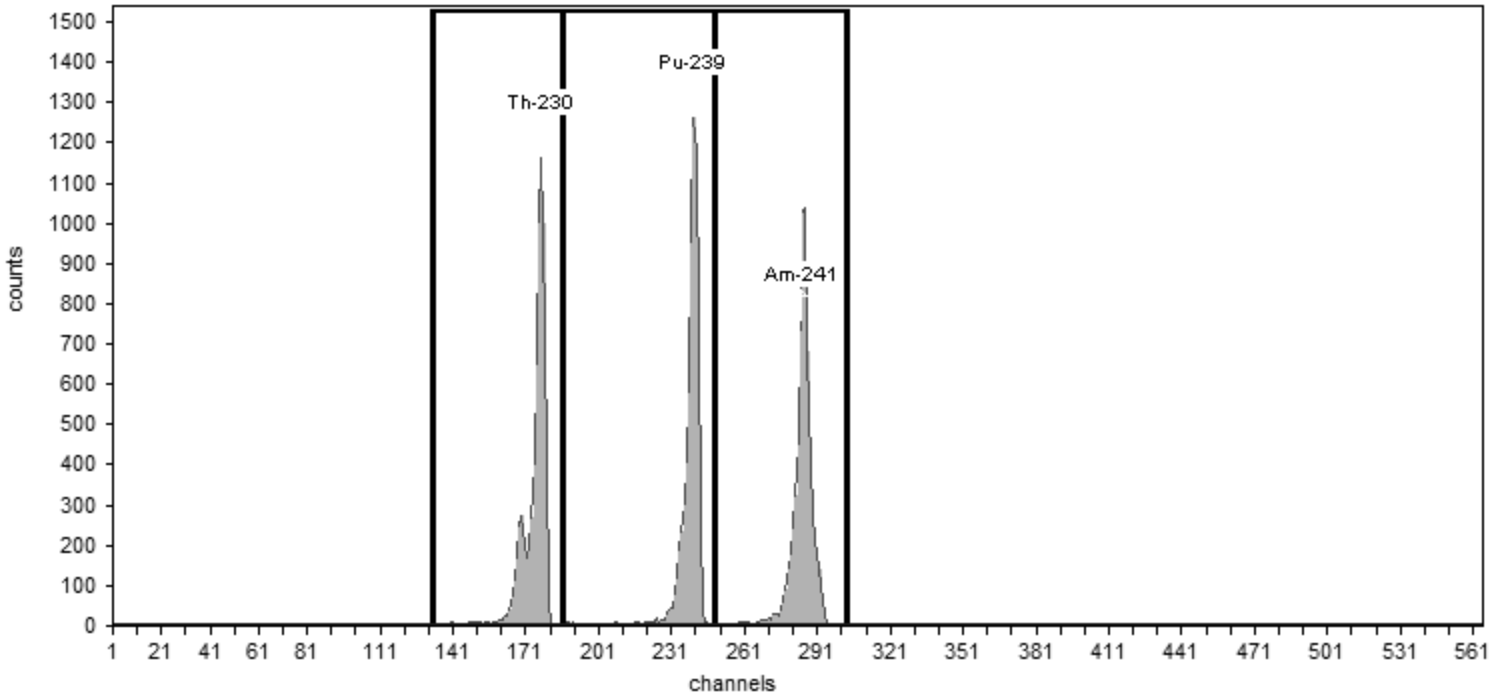
Detector: AV192 , SN: 50-119J7
Acquisition Start Date: 7/9/2014 7:55:24PM

Live Time: 60.00 min.
Real Time: 60.01 min.

Efficiency Calibration Name: ICV-8877;AV192-2014070

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch²

Efficiency: 26.27% +/- 0.42% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	29.78	6,543.00	109.05
Pu-239	240	5,155.40	186	249	30.60	6,547.00	109.12
Am-241	284	5,485.70	249	303	32.15	6,439.00	107.32

Monthly Calibration Verifications

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:41:42AM 11/20/2014

Calibration

Sample Name: CCV-8877;AV165-20141119
Description:
Detector: AV165

Analyst: 60040
Analysis Date: 11/19/2014 8:57:37PM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82236-334
Prepared by: Analytics
Description:

Certification Date: 6/2/2010 12:00:00PM

Acquisition

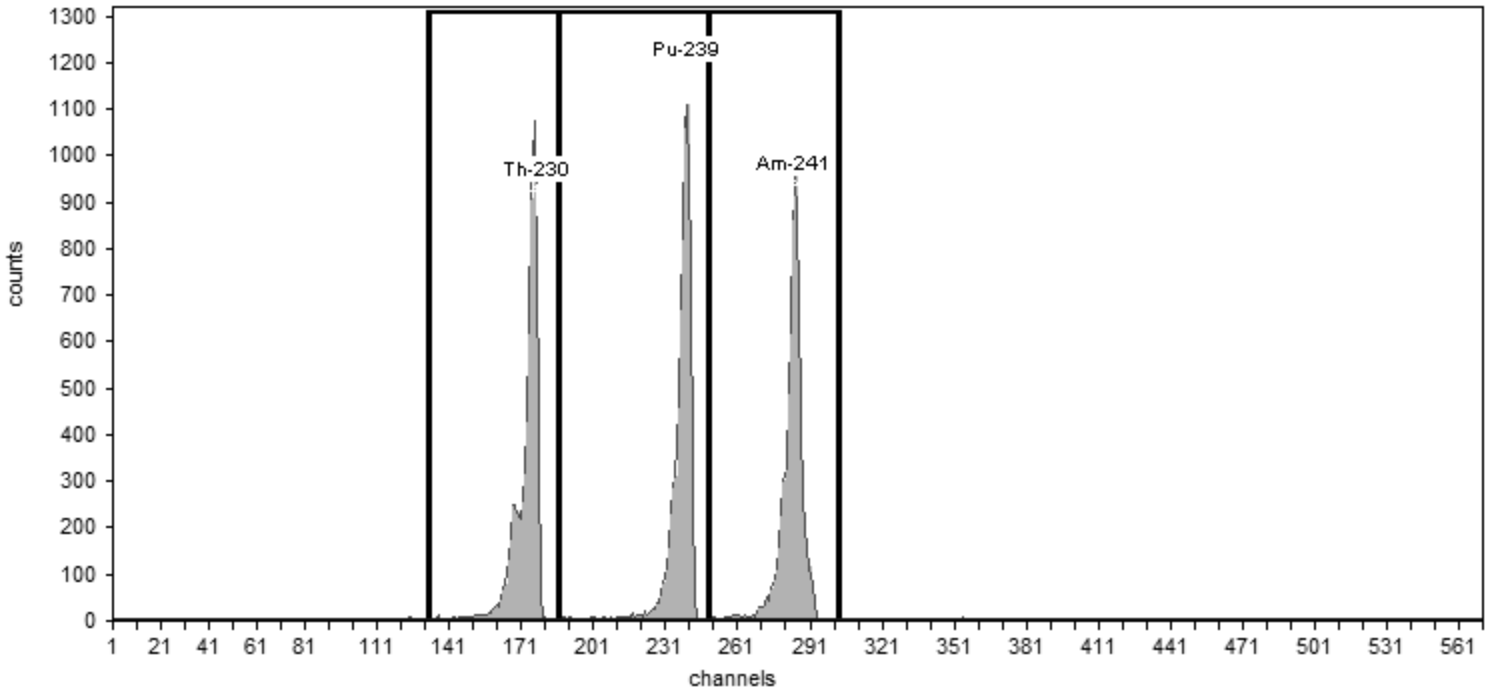
Detector: AV165 , SN: 50-112F7
Acquisition Start Date: 11/19/2014 6:45:14PM

Live Time: 60.00 min.
Real Time: 60.00 min.

Efficiency Calibration Name: CCV-8877;AV165-2014111

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 26.49% +/- 0.43% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	30.37	6,526.00	108.77
Pu-239	240	5,155.40	186	249	37.17	6,709.00	111.82
Am-241	284	5,485.70	249	303	35.47	6,472.00	107.87

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
8:57:42PM 11/19/2014

Calibration

Sample Name: CCV-9793;AV168-20141119
Description:
Detector: AV168

Analyst: 60040
Analysis Date: 11/19/2014 8:57:41PM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82241-334
Prepared by: Analytics
Description:

Certification Date: 6/8/2010 12:00:00PM

Acquisition

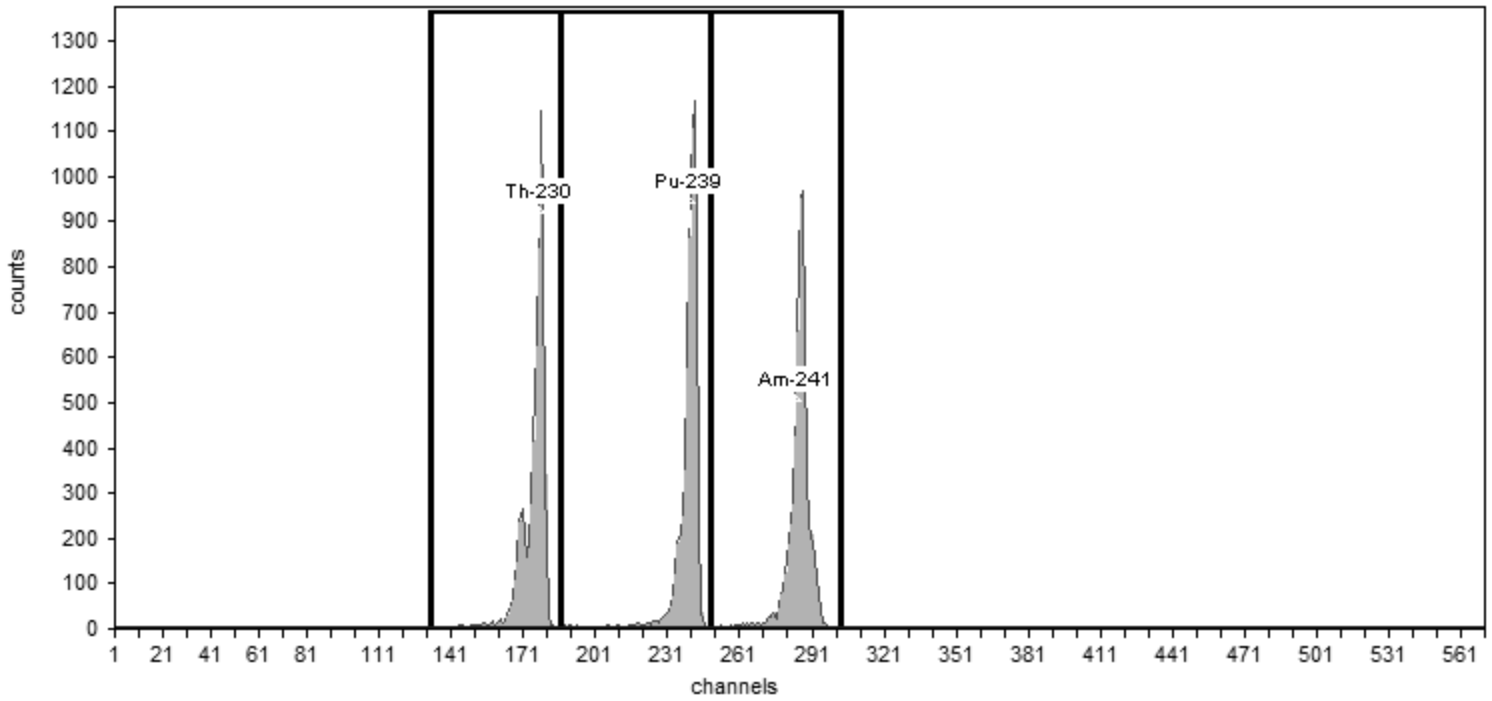
Detector: AV168 , SN: 50-113 G4
Acquisition Start Date: 11/19/2014 6:45:35PM

Live Time: 60.00 min.
Real Time: 60.00 min.

Efficiency Calibration Name: CCV-9793;AV168-2014111

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch²

Efficiency: 25.67% +/- 0.43% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	28.66	6,155.00	102.58
Pu-239	240	5,155.40	186	249	32.77	6,309.00	105.15
Am-241	284	5,485.70	249	303	31.90	6,041.00	100.68

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
2:22:14AM 11/19/2014

Calibration

Sample Name: CCV-9886;AV174-20141119
Description:
Detector: AV174

Analyst: 60040
Analysis Date: 11/19/2014 2:22:13AM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82247-334
Prepared by: Analytics
Description:

Certification Date: 6/10/2010 12:00:00PM

Acquisition

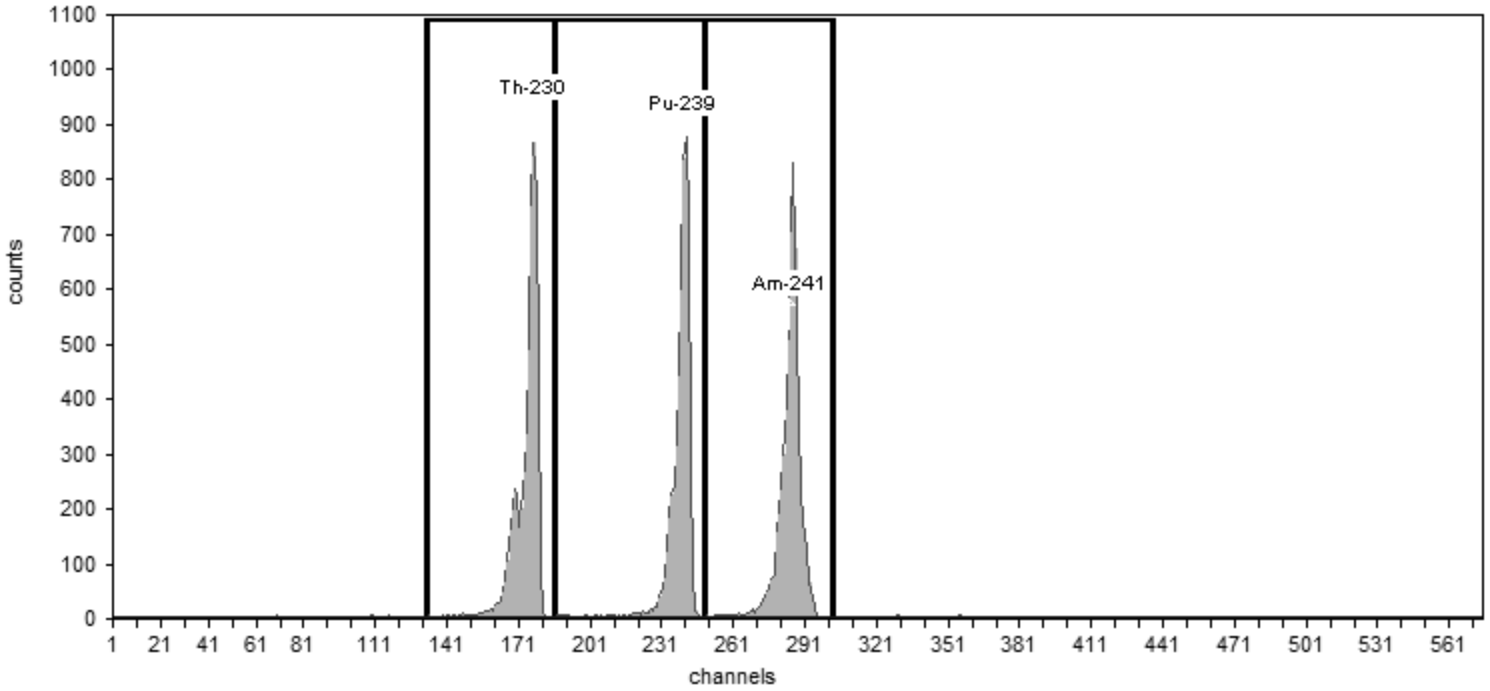
Detector: AV174 , SN: 50-112Y5
Acquisition Start Date: 11/19/2014 1:09:11AM

Live Time: 60.00 min.
Real Time: 60.00 min.

Efficiency Calibration Name: CCV-9886;AV174-2014111

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 25.14% +/- 0.45% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	32.82	5,651.00	94.18
Pu-239	240	5,155.40	186	249	34.75	5,285.00	88.08
Am-241	284	5,485.70	249	303	33.96	5,585.00	93.08

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
8:57:49PM 11/19/2014

Calibration

Sample Name: CCV-8874;AV176-20141119
Description:
Detector: AV176

Analyst: 60040
Analysis Date: 11/19/2014 8:57:48PM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82233-334
Prepared by: Analytics
Description:

Certification Date: 6/3/2010 12:00:00PM

Acquisition

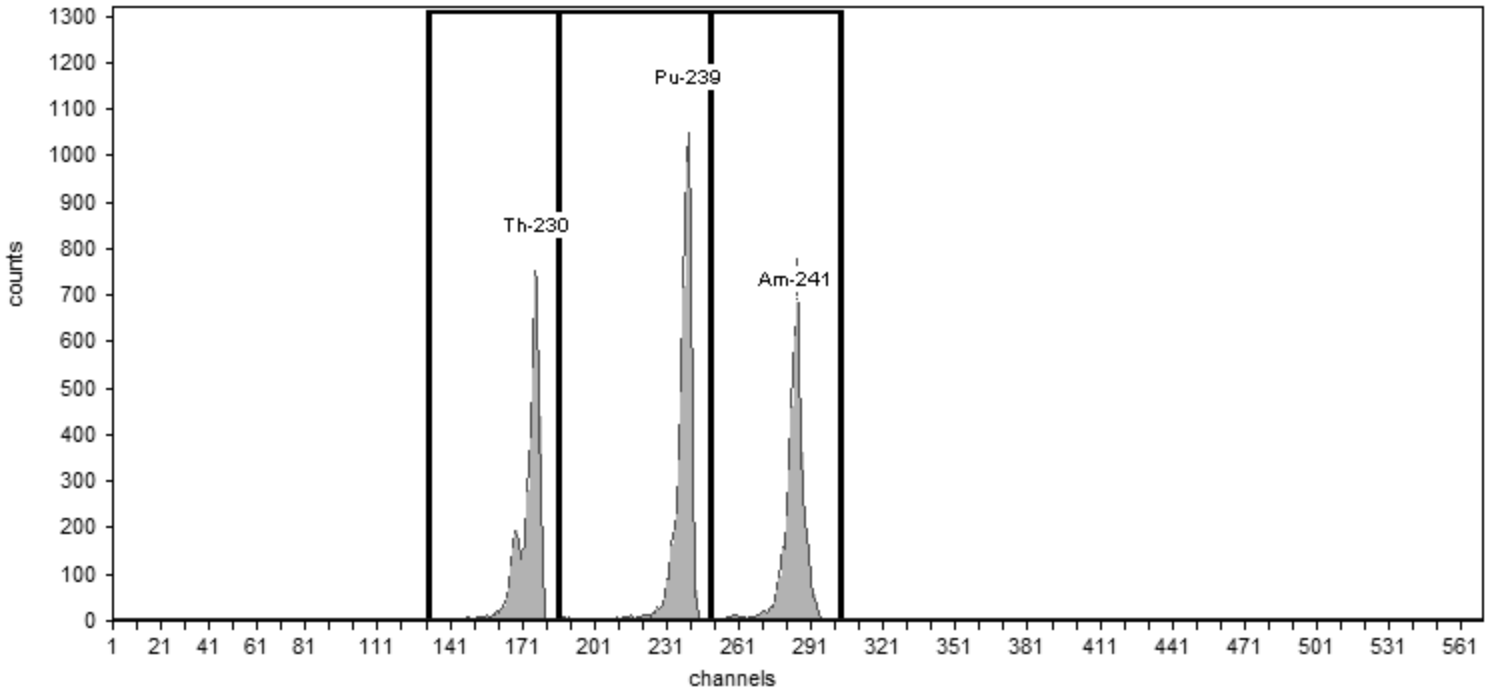
Detector: AV176 , SN: 50-117H2
Acquisition Start Date: 11/19/2014 6:46:07PM

Live Time: 60.00 min.
Real Time: 60.00 min.

Efficiency Calibration Name: CCV-8874;AV176-2014111

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 26.29% +/- 0.49% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	32.31	4,597.00	76.62
Pu-239	240	5,155.40	186	249	33.47	5,849.00	97.48
Am-241	284	5,485.70	249	303	32.83	4,783.00	79.72

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
11:03:06PM 11/19/2014

Calibration

Sample Name: CCV-8875;AV177-20141119
Description:
Detector: AV177

Analyst: 60040
Analysis Date: 11/19/2014 11:03:05PM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82234-334
Prepared by: Analytics
Description:

Certification Date: 6/2/2010 12:00:00PM

Acquisition

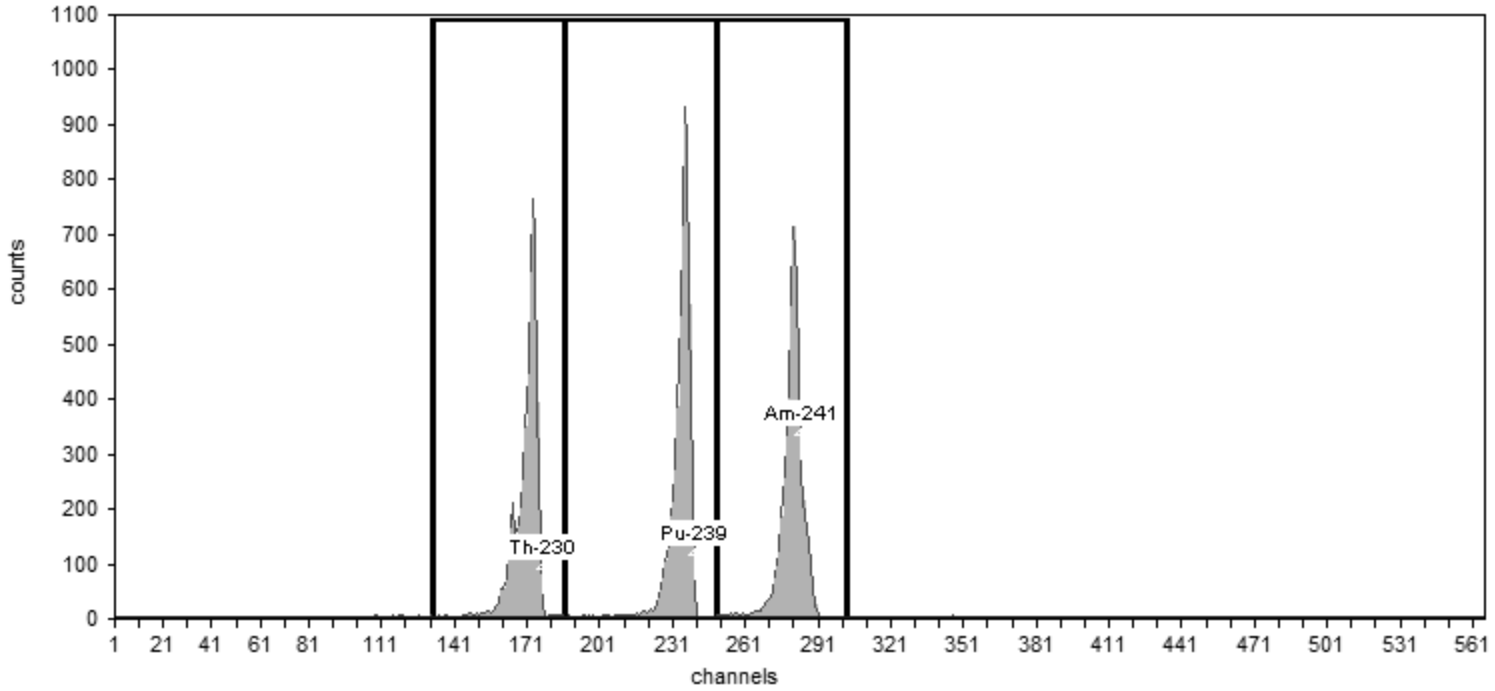
Detector: AV177 , SN: 50-117H3
Acquisition Start Date: 11/19/2014 9:14:40PM

Live Time: 60.00 min.
Real Time: 60.00 min.

Efficiency Calibration Name: CCV-8875;AV177-2014111

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch²

Efficiency: 25.26% +/- 0.47% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	35.01	5,086.00	84.77
Pu-239	240	5,155.40	186	249	35.98	5,565.00	92.75
Am-241	284	5,485.70	249	303	38.46	5,034.00	83.90

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:41:48AM 11/20/2014

Calibration

Sample Name: CCV-8876;AV178-20141119
Description:
Detector: AV178

Analyst: 60040
Analysis Date: 11/19/2014 2:22:17AM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82235-334
Prepared by: Analytics
Description:

Certification Date: 6/4/2010 12:00:00PM

Acquisition

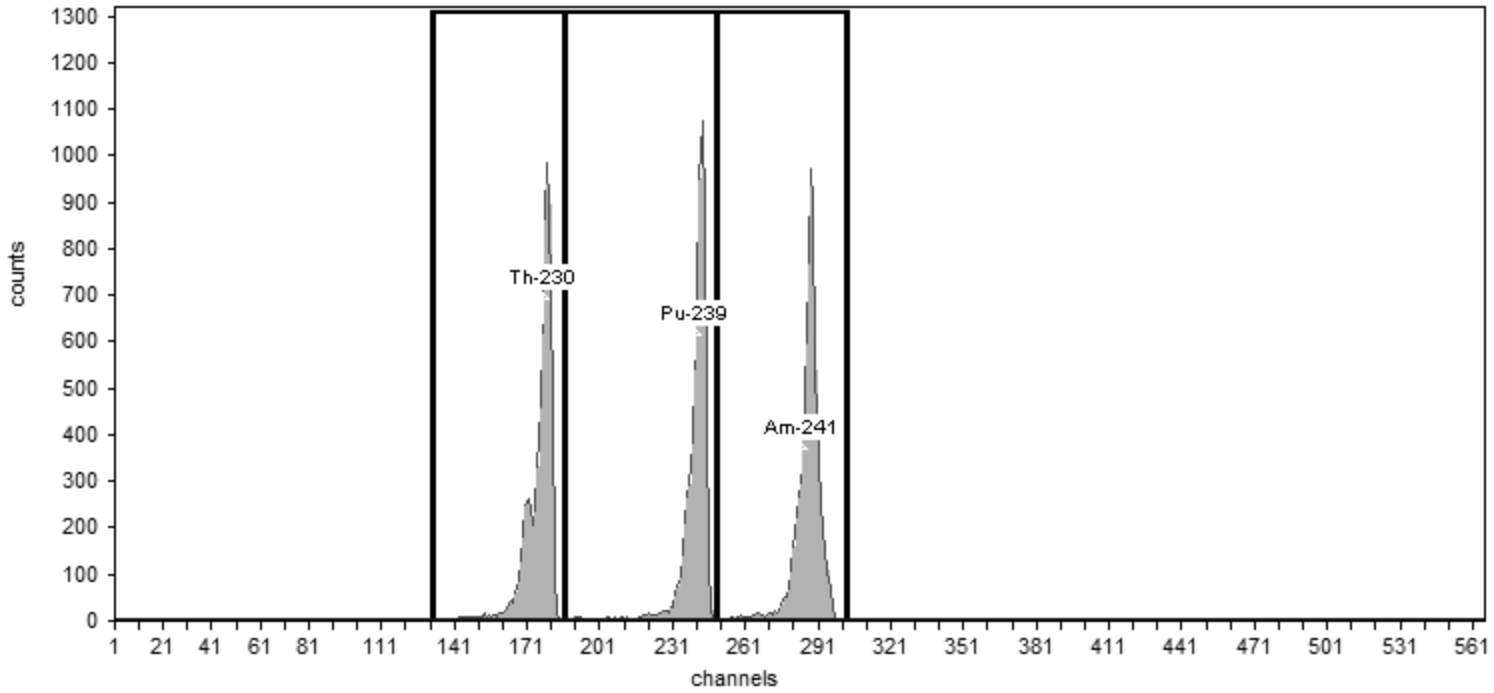
Detector: AV178 , SN: 50-117H4
Acquisition Start Date: 11/19/2014 1:10:36AM

Live Time: 60.00 min.
Real Time: 60.00 min.

Efficiency Calibration Name: CCV-8876;AV178-2014111

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch²

Efficiency: 25.58% +/- 0.41% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	35.51	6,636.00	110.60
Pu-239	240	5,155.40	186	249	35.80	6,442.00	107.37
Am-241	284	5,485.70	249	303	35.75	6,713.00	111.88

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
10:09:44PM 11/18/2014

Calibration

Sample Name: CCV-9792;AV181-20141118
Description:
Detector: AV181

Analyst: 60040
Analysis Date: 11/18/2014 10:09:43PM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82240-334
Prepared by: Analytics
Description:

Certification Date: 6/8/2010 12:00:00PM

Acquisition

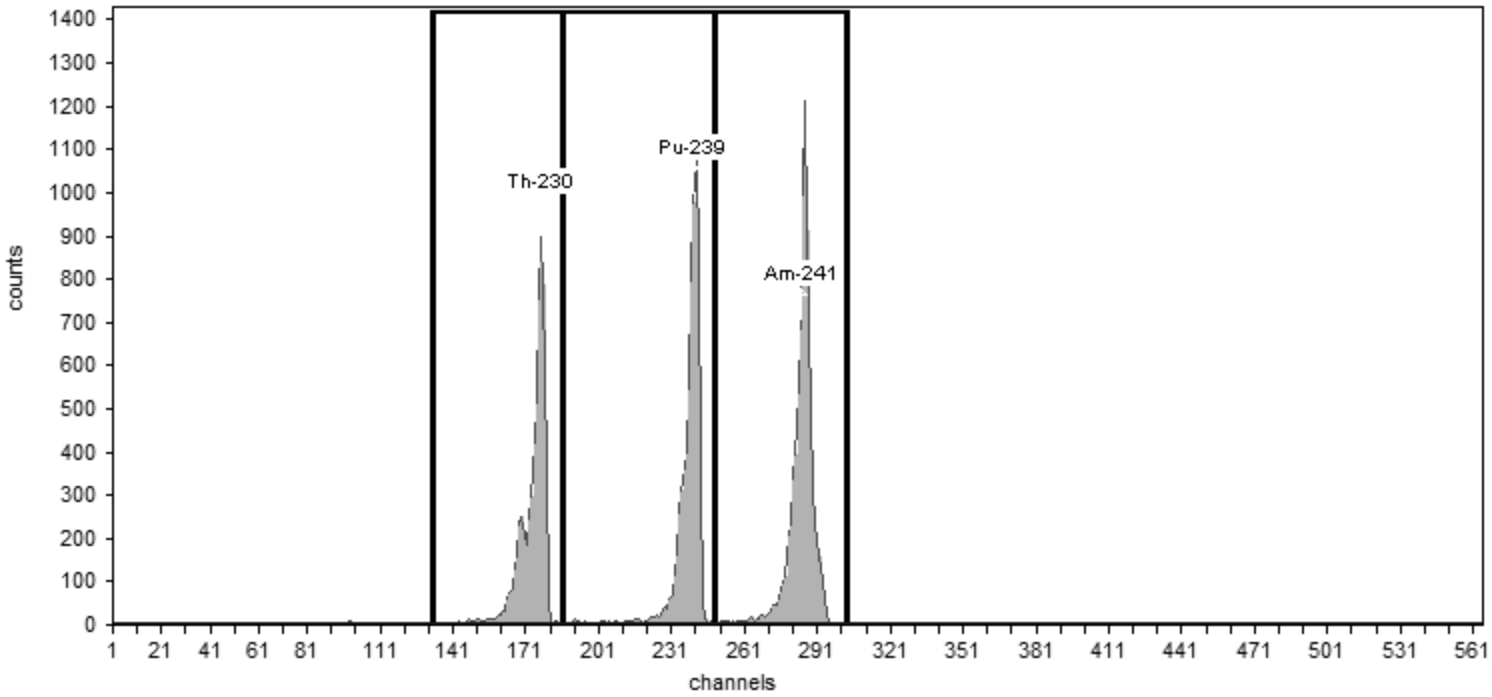
Detector: AV181 , SN: 50-110X1
Acquisition Start Date: 11/18/2014 8:50:17PM

Live Time: 60.00 min.
Real Time: 60.00 min.

Efficiency Calibration Name: CCV-9792;AV181-2014111

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 25.84% +/- 0.41% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	33.42	5,874.00	97.90
Pu-239	240	5,155.40	186	249	34.73	6,642.00	110.70
Am-241	284	5,485.70	249	303	31.51	7,684.00	128.07

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:41:55AM 11/20/2014

Calibration

Sample Name: CCV-9793;AV182-20141119
Description:
Detector: AV182

Analyst: 60040
Analysis Date: 11/19/2014 11:03:08PM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82241-334
Prepared by: Analytics
Description:

Certification Date: 6/8/2010 12:00:00PM

Acquisition

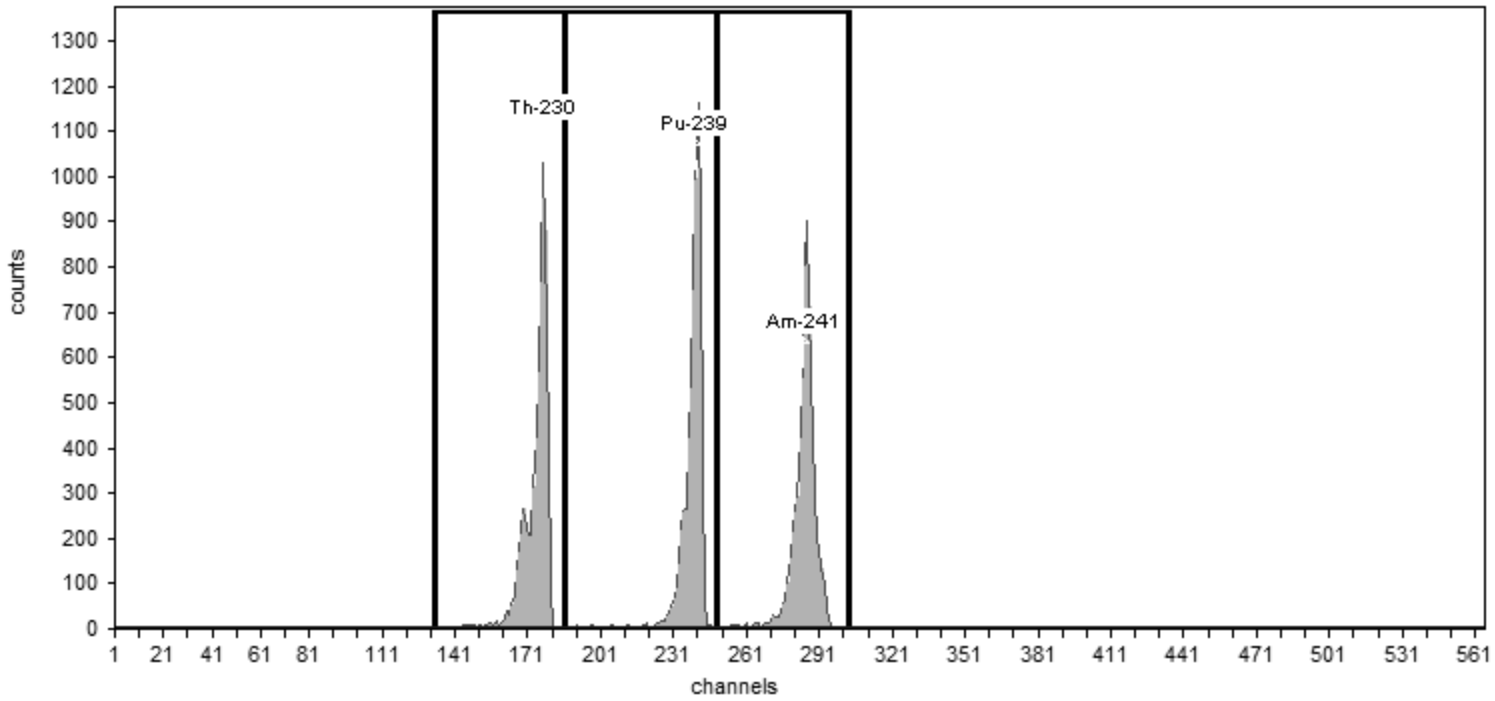
Detector: AV182 , SN: 50-110X6
Acquisition Start Date: 11/19/2014 9:14:51PM

Live Time: 60.00 min.
Real Time: 60.00 min.

Efficiency Calibration Name: CCV-9793;AV182-2014111

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 25.94% +/- 0.43% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	30.72	6,178.00	102.97
Pu-239	240	5,155.40	186	249	32.39	6,414.00	106.90
Am-241	284	5,485.70	249	303	34.99	6,105.00	101.75

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:42:03AM 11/20/2014

Calibration

Sample Name: CCV-7107;AV189-20141118
Description:
Detector: AV189

Analyst: 60040
Analysis Date: 11/19/2014 12:53:03AM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82232-334
Prepared by: Analytics
Description:

Certification Date: 6/3/2010 12:00:00PM

Acquisition

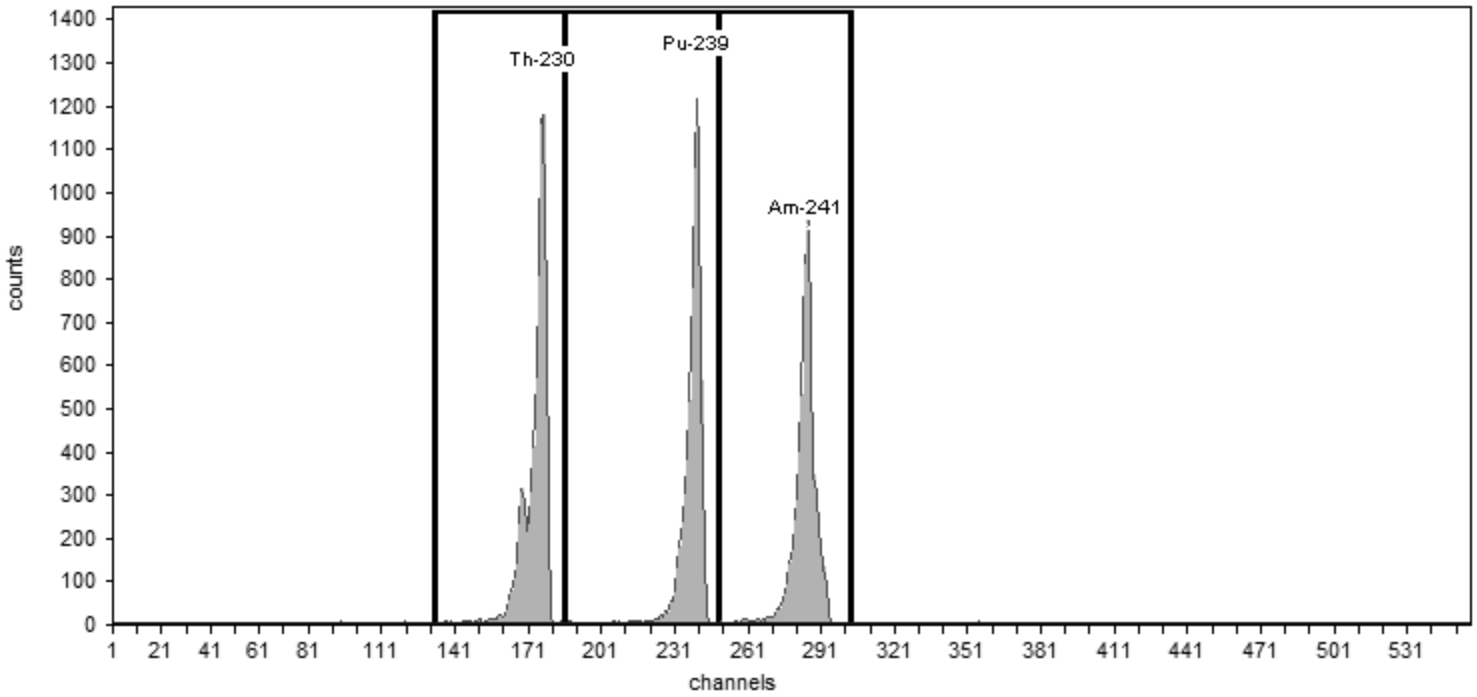
Detector: AV189 , SN: 50-112A3
Acquisition Start Date: 11/18/2014 10:23:53PM

Live Time: 60.00 min.
Real Time: 60.00 min.

Efficiency Calibration Name: CCV-7107;AV189-2014111

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 26.78% +/- 0.41% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	31.32	7,270.00	121.17
Pu-239	240	5,155.40	186	249	33.97	7,017.00	116.95
Am-241	284	5,485.70	249	303	35.22	6,929.00	115.48

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
10:09:47PM 11/18/2014

Calibration

Sample Name: CCV-8874;AV190-20141118
Description:
Detector: AV190

Analyst: 60040
Analysis Date: 11/18/2014 10:09:46PM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82233-334
Prepared by: Analytics
Description:

Certification Date: 6/3/2010 12:00:00PM

Acquisition

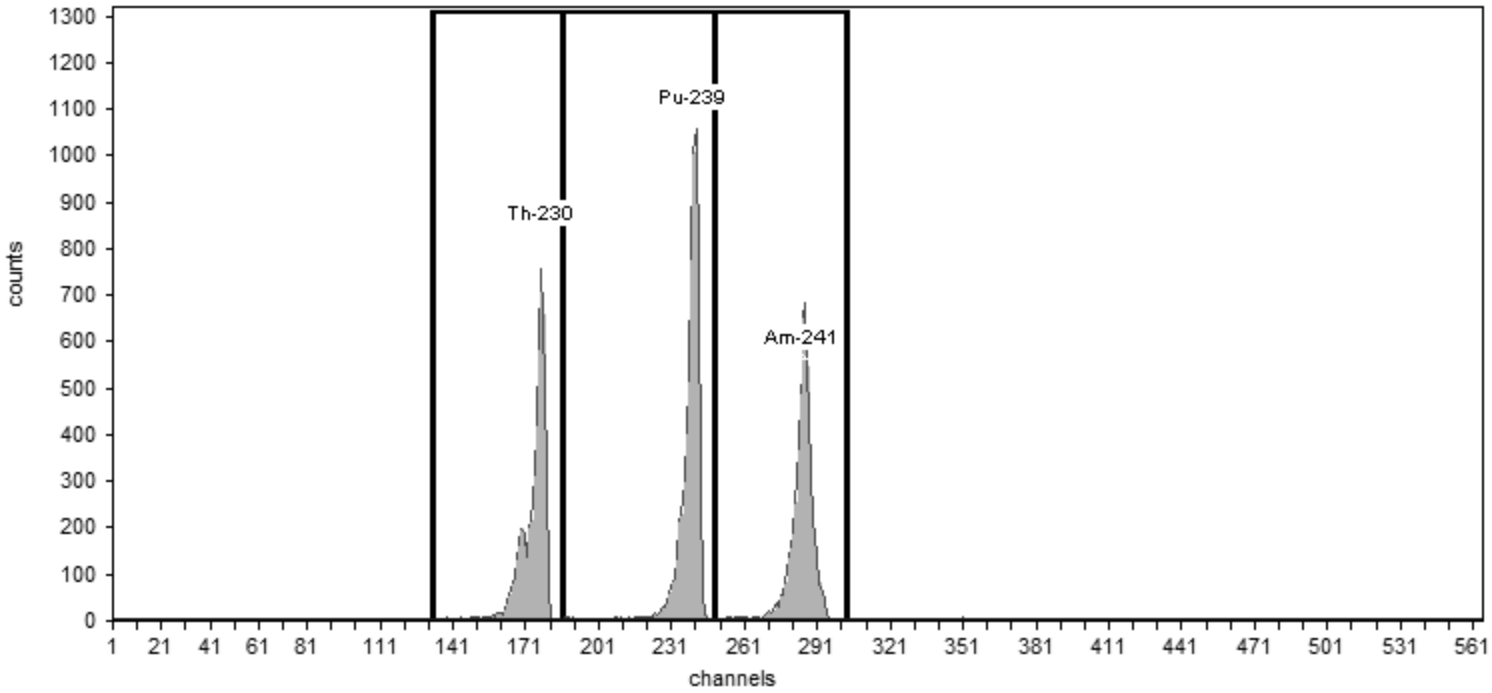
Detector: AV190 , SN: 50-119I7
Acquisition Start Date: 11/18/2014 8:50:35PM

Live Time: 60.00 min.
Real Time: 60.00 min.

Efficiency Calibration Name: CCV-8874;AV190-2014111

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch²

Efficiency: 27.19% +/- 0.50% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	31.41	4,723.00	78.72
Pu-239	240	5,155.40	186	249	32.82	6,147.00	102.45
Am-241	284	5,485.70	249	303	38.56	4,887.00	81.45

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
12:53:08AM 11/19/2014

Calibration

Sample Name: CCV-8875;AV191-20141118
Description:
Detector: AV191

Analyst: 60040
Analysis Date: 11/19/2014 12:53:07AM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82234-334
Prepared by: Analytics
Description:

Certification Date: 6/2/2010 12:00:00PM

Acquisition

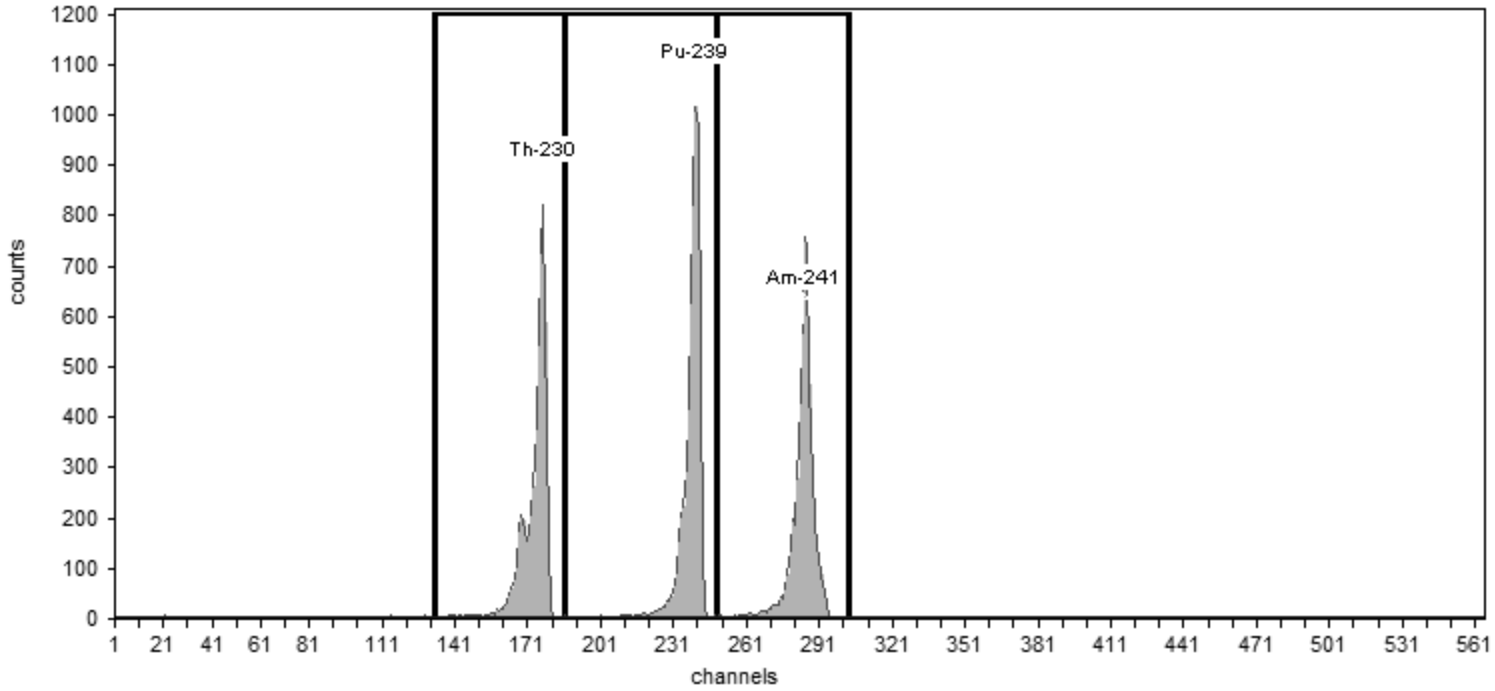
Detector: AV191 , SN: 50-112A2
Acquisition Start Date: 11/18/2014 10:24:07PM

Live Time: 60.00 min.
Real Time: 60.00 min.

Efficiency Calibration Name: CCV-8875;AV191-2014111

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 25.43% +/- 0.47% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	31.32	4,997.00	83.28
Pu-239	240	5,155.40	186	249	33.68	5,765.00	96.08
Am-241	284	5,485.70	249	303	35.61	5,050.00	84.17

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:42:06AM 11/20/2014

Calibration

Sample Name: CCV-8876;AV192-20141118
Description:
Detector: AV192

Analyst: 60040
Analysis Date: 11/18/2014 10:09:49PM
Calibration Type: Energy And Efficiency

Source Info

Certificate ID: 82235-334
Prepared by: Analytics
Description:

Certification Date: 6/4/2010 12:00:00PM

Acquisition

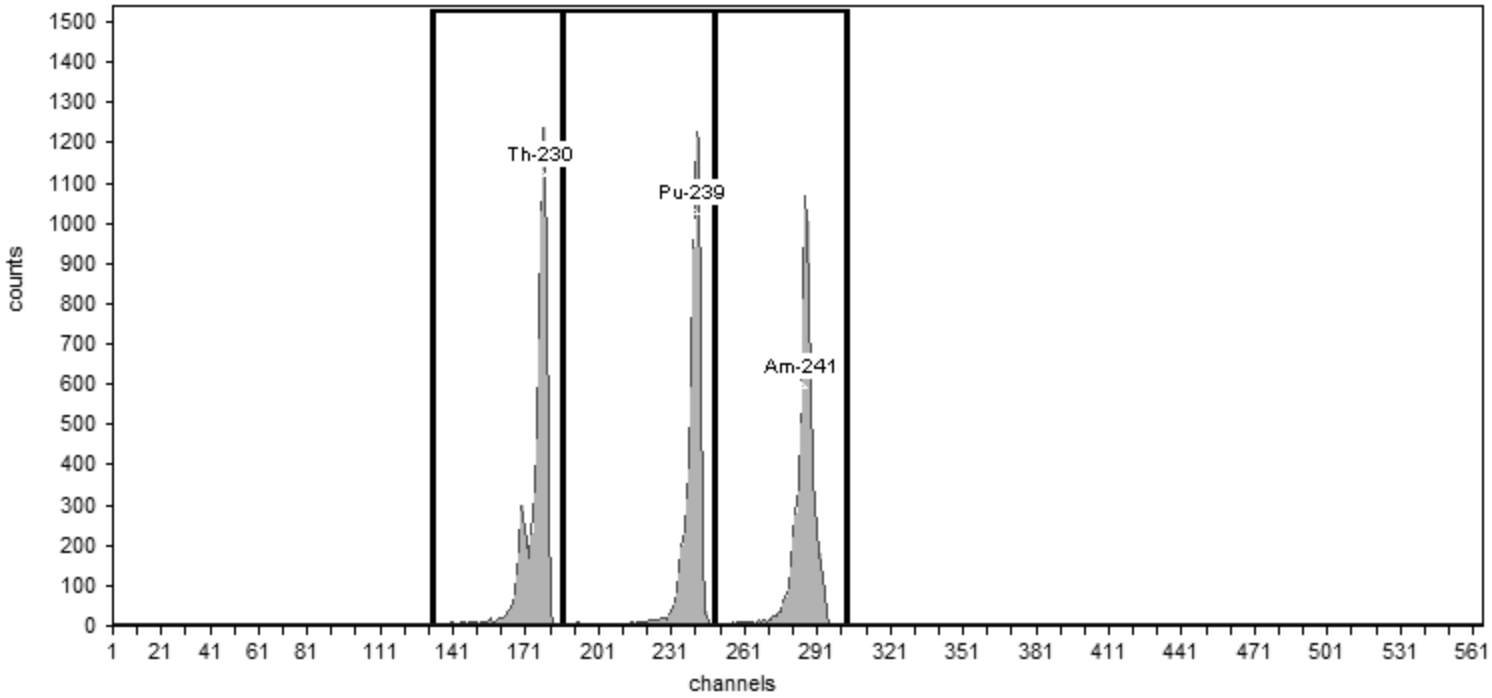
Detector: AV192 , SN: 50-119J7
Acquisition Start Date: 11/18/2014 8:50:54PM

Live Time: 60.00 min.
Real Time: 60.00 min.

Efficiency Calibration Name: CCV-8876;AV192-2014111

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 25.88% +/- 0.41% TPU(2 sigma)



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy keV	ROI Start Channel	ROI End Channel	Peak FWHM keV	Gross Counts	Net Count Rate (cpm)
Th-230	177	4,687.50	132	186	28.99	6,856.00	114.27
Pu-239	240	5,155.40	186	249	30.35	6,479.00	107.98
Am-241	284	5,485.70	249	303	31.28	6,700.00	111.67

Monthly Backgrounds

Sample

Sample Name: ICB;AV165
Comment:

Spectrum #1 Analysis #1
Analyst: 60040

Batch

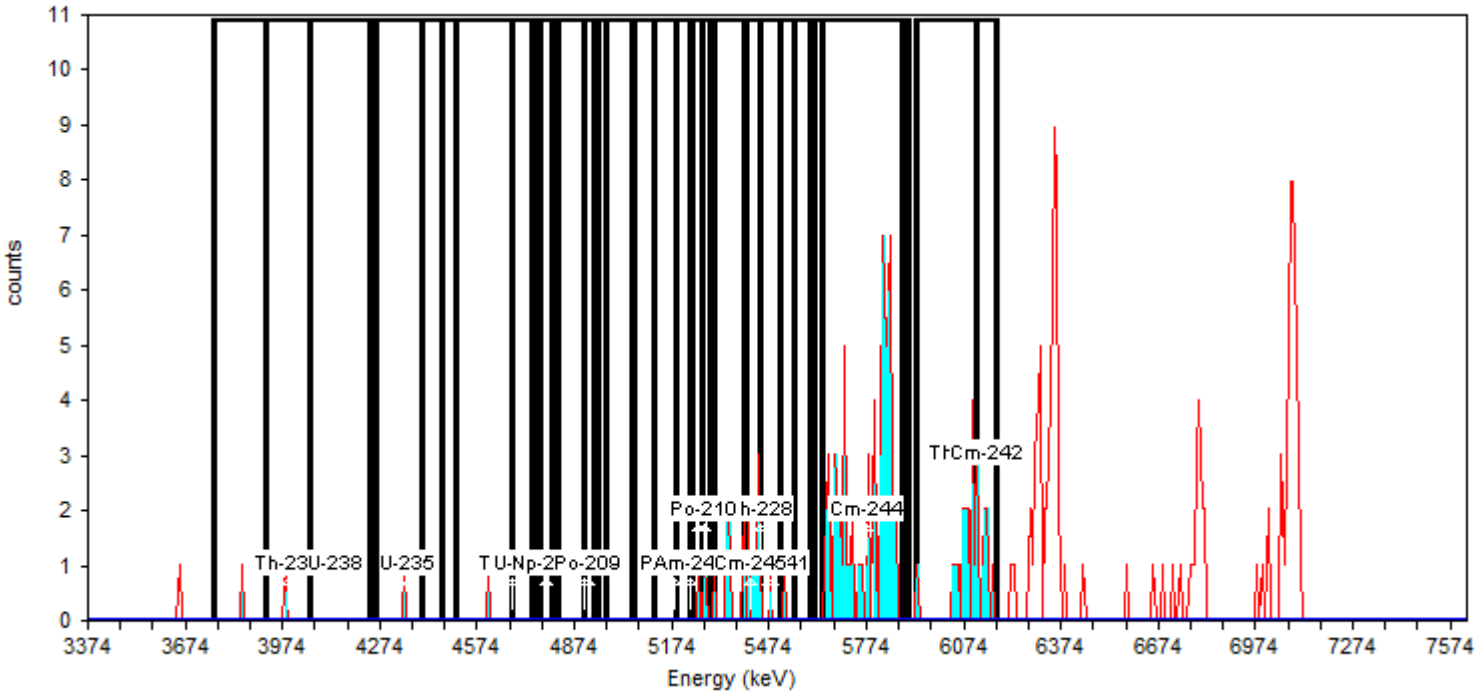
Batch Name: November2014
Description:

Acquisition

Detector: AV165 , SN: 50-112F7
Acquisition Start Date: 11/18/2014 12:05:44AM
Live Time: 960.00 min.
Real Time: 960.01 min.
Calibration Name: IC-8877;AV165-20140706
Calibration Date: 7/8/2014 5:48:08PM

Energy Calibration Equation:

Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 228.00

Nuclide Summary (ROI)

RegionName	Peak Energy (keV)	Start Energy (keV)	End Energy (keV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3,985.93	3,754.75	4,053.05	2.00	2.083E-003	1.804E-003
U-238	4,135.08	3,918.81	4,239.49	1.00	1.042E-003	1.473E-003
U-235	4,358.81	4,261.86	4,463.21	1.00	1.042E-003	1.473E-003
Th-230	4,679.48	4,403.55	4,746.60	1.00	1.042E-003	1.473E-003
U-234	4,709.31	4,507.96	4,821.17	1.00	1.042E-003	1.473E-003
Pu-242	4,903.21	4,679.48	4,947.95	0.00	0.000E+000	1.473E-003
Th-229	4,858.46	4,739.14	5,119.48	0.00	0.000E+000	1.473E-003
Np-237	4,783.89	4,768.97	4,806.26	0.00	0.000E+000	1.473E-003
Po-209	4,918.12	4,903.21	4,933.04	0.00	0.000E+000	1.473E-003
Pu-239	5,179.14	4,970.33	5,238.80	0.00	0.000E+000	1.473E-003
Am-243	5,231.34	5,052.36	5,305.92	3.00	3.125E-003	2.083E-003
U-232	5,253.71	5,059.82	5,402.86	9.00	9.375E-003	3.294E-003
Th-228	5,447.61	5,186.59	5,507.27	18.00	1.875E-002	4.541E-003
Po-210	5,276.09	5,231.34	5,291.00	2.00	2.083E-003	1.804E-003
Pu-238	5,469.98	5,268.63	5,552.01	18.00	1.875E-002	4.541E-003
Am-241	5,484.90	5,298.46	5,604.22	17.00	1.771E-002	4.419E-003
Cm-245	5,417.78	5,395.41	5,447.61	10.00	1.042E-002	3.455E-003
Pu-236	5,760.83	5,611.67	5,887.60	66.00	6.875E-002	8.526E-003
Cm-244	5,775.74	5,641.51	5,902.52	66.00	6.875E-002	8.526E-003
Th-227	6,074.04	5,932.35	6,178.45	24.00	2.500E-002	5.208E-003
Cm-242	6,148.62	6,118.79	6,178.45	9.00	9.375E-003	3.294E-003

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
4:08:15PM 11/18/2014

Sample

Sample Name: ICB;AV168
Comment:

Spectrum #1 Analysis #1
Analyst: 60040

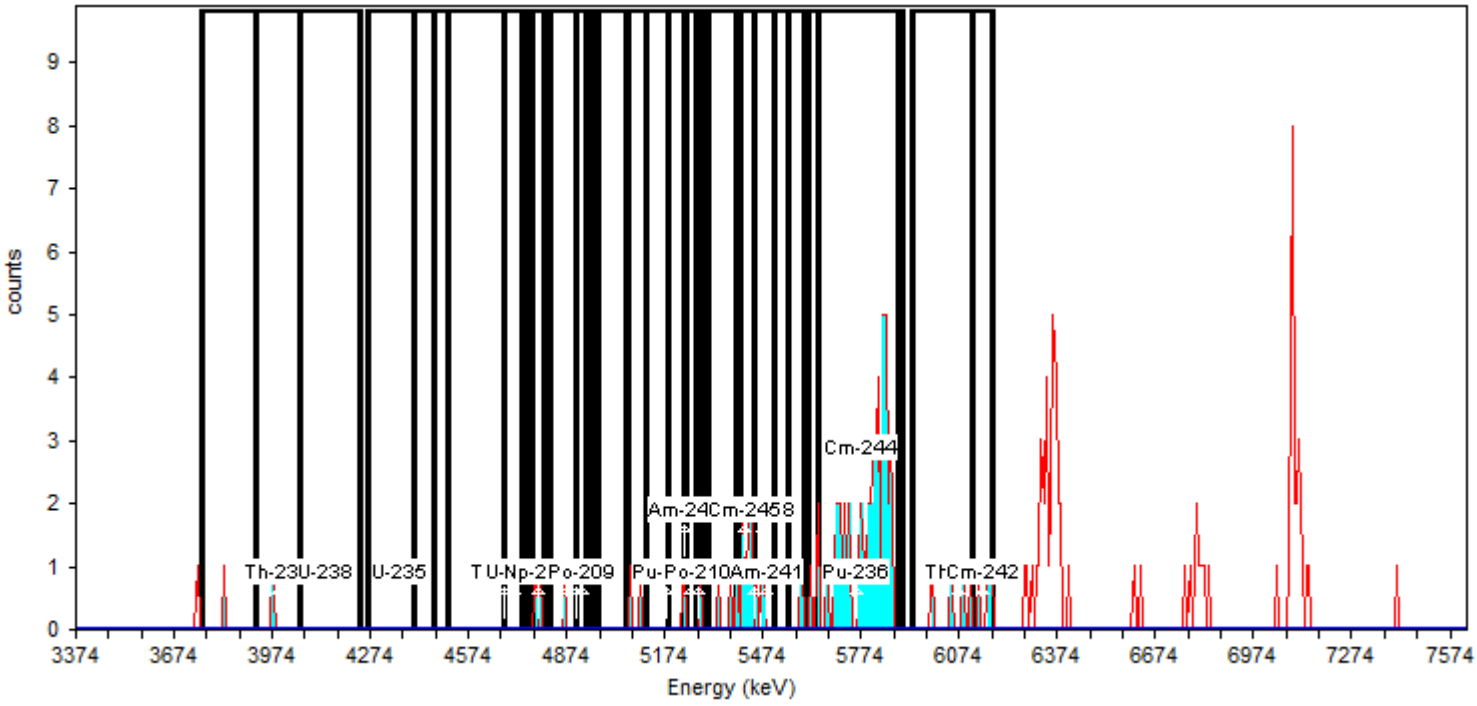
Batch

Batch Name: November2014
Description:

Acquisition

Detector: AV168 , SN: 50-113 G4
Acquisition Start Date: 11/18/2014 12:05:45AM
Live Time: 960.00 min.
Real Time: 960.00 min.
Calibration Name: IC-9793;AV168-20140706
Calibration Date: 7/6/2014 9:06:10PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 150.00

Nuclide Summary (ROI)

RegionName	Peak Energy (keV)	Start Energy (keV)	End Energy (keV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3,985.93	3,754.75	4,053.05	2.00	2.083E-003	1.804E-003
U-238	4,135.08	3,918.81	4,239.49	1.00	1.042E-003	1.473E-003
U-235	4,358.81	4,261.86	4,463.21	0.00	0.000E+000	1.473E-003
Th-230	4,679.48	4,403.55	4,746.60	0.00	0.000E+000	1.473E-003
U-234	4,709.31	4,507.96	4,821.17	2.00	2.083E-003	1.804E-003
Pu-242	4,903.21	4,679.48	4,947.95	3.00	3.125E-003	2.083E-003
Th-229	4,858.46	4,739.14	5,119.48	5.00	5.208E-003	2.552E-003
Np-237	4,783.89	4,768.97	4,806.26	2.00	2.083E-003	1.804E-003
Po-209	4,918.12	4,903.21	4,933.04	0.00	0.000E+000	1.473E-003
Pu-239	5,179.14	4,970.33	5,238.80	3.00	3.125E-003	2.083E-003
Am-243	5,231.34	5,052.36	5,305.92	4.00	4.167E-003	2.329E-003
U-232	5,253.71	5,059.82	5,402.86	7.00	7.292E-003	2.946E-003
Th-228	5,447.61	5,186.59	5,507.27	16.00	1.667E-002	4.295E-003
Po-210	5,276.09	5,231.34	5,291.00	2.00	2.083E-003	1.804E-003
Pu-238	5,469.98	5,268.63	5,552.01	15.00	1.563E-002	4.167E-003
Am-241	5,484.90	5,298.46	5,604.22	16.00	1.667E-002	4.295E-003
Cm-245	5,417.78	5,395.41	5,447.61	9.00	9.375E-003	3.294E-003
Pu-236	5,760.83	5,611.67	5,887.60	52.00	5.417E-002	7.583E-003
Cm-244	5,775.74	5,641.51	5,902.52	51.00	5.313E-002	7.512E-003
Th-227	6,074.04	5,932.35	6,178.45	8.00	8.333E-003	3.125E-003
Cm-242	6,148.62	6,118.79	6,178.45	4.00	4.167E-003	2.329E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
4:08:28PM 11/18/2014

Sample

Sample Name: ICB;AV174
Comment:

Spectrum #1 Analysis #1
Analyst: 60040

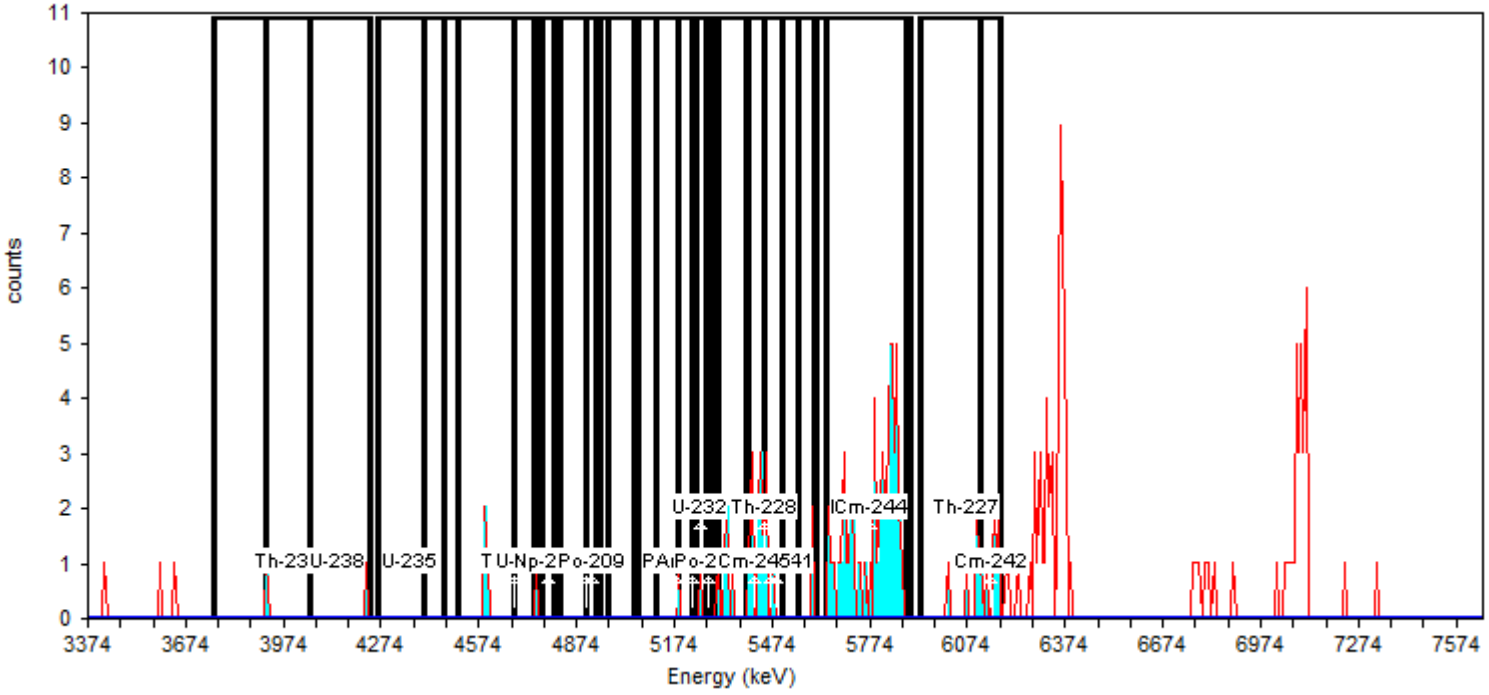
Batch

Batch Name: November2014
Description:

Acquisition

Detector: AV174 , SN: 50-112Y5
Acquisition Start Date: 11/18/2014 12:05:45AM
Live Time: 960.00 min.
Real Time: 960.05 min.
Calibration Name: IC-9886;AV174-20140706
Calibration Date: 7/6/2014 9:06:32PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 183.00

Nuclide Summary (ROI)

RegionName	Peak Energy (keV)	Start Energy (keV)	End Energy (keV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3,985.93	3,754.75	4,053.05	1.00	1.042E-003	1.473E-003
U-238	4,135.08	3,918.81	4,239.49	2.00	2.083E-003	1.804E-003
U-235	4,358.81	4,261.86	4,463.21	0.00	0.000E+000	1.473E-003
Th-230	4,679.48	4,403.55	4,746.60	4.00	4.167E-003	2.329E-003
U-234	4,709.31	4,507.96	4,821.17	4.00	4.167E-003	2.329E-003
Pu-242	4,903.21	4,679.48	4,947.95	1.00	1.042E-003	1.473E-003
Th-229	4,858.46	4,739.14	5,119.48	1.00	1.042E-003	1.473E-003
Np-237	4,783.89	4,768.97	4,806.26	0.00	0.000E+000	1.473E-003
Po-209	4,918.12	4,903.21	4,933.04	0.00	0.000E+000	1.473E-003
Pu-239	5,179.14	4,970.33	5,238.80	1.00	1.042E-003	1.473E-003
Am-243	5,231.34	5,052.36	5,305.92	3.00	3.125E-003	2.083E-003
U-232	5,253.71	5,059.82	5,402.86	8.00	8.333E-003	3.125E-003
Th-228	5,447.61	5,186.59	5,507.27	21.00	2.188E-002	4.886E-003
Po-210	5,276.09	5,231.34	5,291.00	1.00	1.042E-003	1.473E-003
Pu-238	5,469.98	5,268.63	5,552.01	19.00	1.979E-002	4.658E-003
Am-241	5,484.90	5,298.46	5,604.22	21.00	2.188E-002	4.886E-003
Cm-245	5,417.78	5,395.41	5,447.61	10.00	1.042E-002	3.455E-003
Pu-236	5,760.83	5,611.67	5,887.60	54.00	5.625E-002	7.725E-003
Cm-244	5,775.74	5,641.51	5,902.52	54.00	5.625E-002	7.725E-003
Th-227	6,074.04	5,932.35	6,178.45	12.00	1.250E-002	3.756E-003
Cm-242	6,148.62	6,118.79	6,178.45	7.00	7.292E-003	2.946E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
4:08:26PM 11/18/2014

Sample

Sample Name: ICB;AV176
Comment:

Spectrum #1 Analysis #1
Analyst: 60040

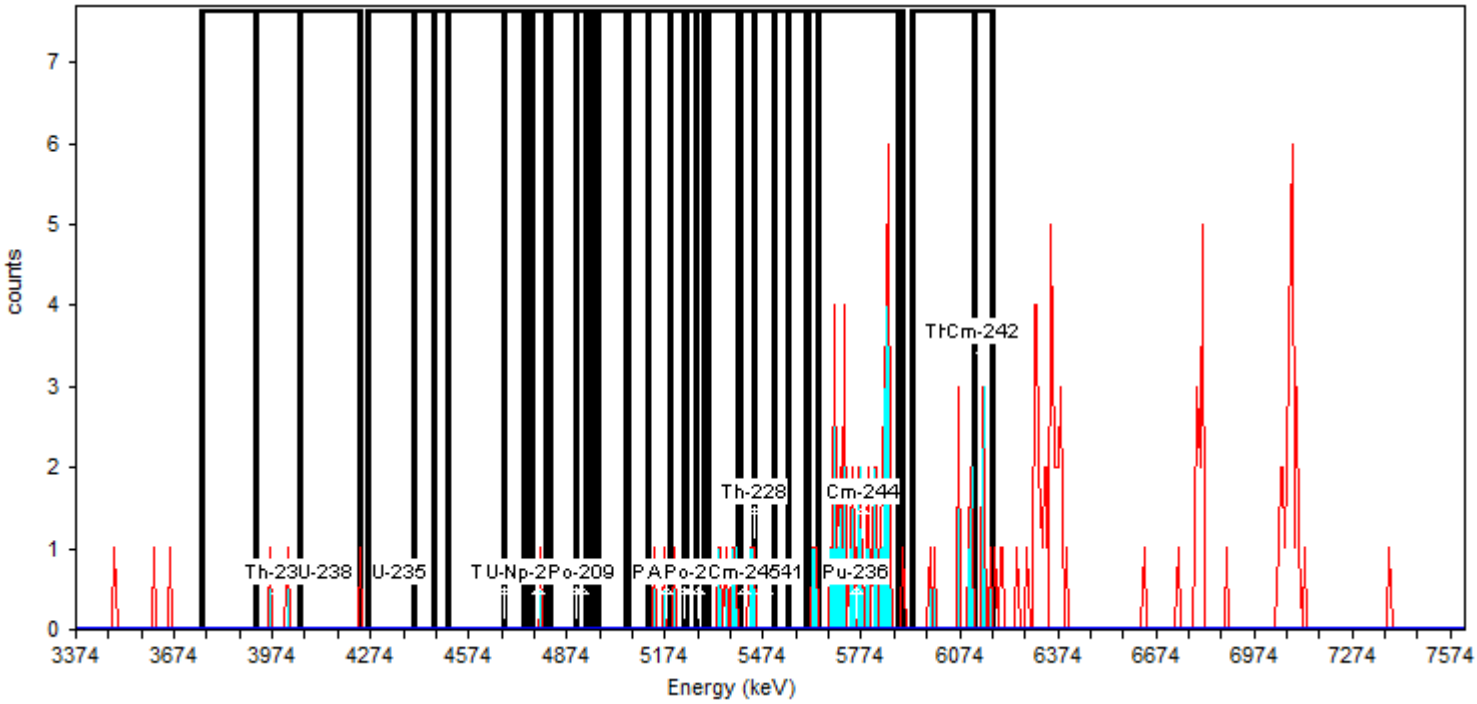
Batch

Batch Name: November2014
Description:

Acquisition

Detector: AV176 , SN: 50-117H2
Acquisition Start Date: 11/18/2014 12:05:46AM
Live Time: 960.00 min.
Real Time: 960.01 min.
Calibration Name: IC-8874;AV176-20140706
Calibration Date: 7/6/2014 9:06:39PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 151.00

Nuclide Summary (ROI)

RegionName	Peak Energy (keV)	Start Energy (keV)	End Energy (keV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3,985.93	3,754.75	4,053.05	2.00	2.083E-003	1.804E-003
U-238	4,135.08	3,918.81	4,239.49	3.00	3.125E-003	2.083E-003
U-235	4,358.81	4,261.86	4,463.21	0.00	0.000E+000	1.473E-003
Th-230	4,679.48	4,403.55	4,746.60	0.00	0.000E+000	1.473E-003
U-234	4,709.31	4,507.96	4,821.17	1.00	1.042E-003	1.473E-003
Pu-242	4,903.21	4,679.48	4,947.95	1.00	1.042E-003	1.473E-003
Th-229	4,858.46	4,739.14	5,119.48	1.00	1.042E-003	1.473E-003
Np-237	4,783.89	4,768.97	4,806.26	1.00	1.042E-003	1.473E-003
Po-209	4,918.12	4,903.21	4,933.04	0.00	0.000E+000	1.473E-003
Pu-239	5,179.14	4,970.33	5,238.80	3.00	3.125E-003	2.083E-003
Am-243	5,231.34	5,052.36	5,305.92	3.00	3.125E-003	2.083E-003
U-232	5,253.71	5,059.82	5,402.86	8.00	8.333E-003	3.125E-003
Th-228	5,447.61	5,186.59	5,507.27	9.00	9.375E-003	3.294E-003
Po-210	5,276.09	5,231.34	5,291.00	0.00	0.000E+000	1.473E-003
Pu-238	5,469.98	5,268.63	5,552.01	8.00	8.333E-003	3.125E-003
Am-241	5,484.90	5,298.46	5,604.22	8.00	8.333E-003	3.125E-003
Cm-245	5,417.78	5,395.41	5,447.61	3.00	3.125E-003	2.083E-003
Pu-236	5,760.83	5,611.67	5,887.60	45.00	4.688E-002	7.065E-003
Cm-244	5,775.74	5,641.51	5,902.52	44.00	4.583E-002	6.988E-003
Th-227	6,074.04	5,932.35	6,178.45	12.00	1.250E-002	3.756E-003
Cm-242	6,148.62	6,118.79	6,178.45	4.00	4.167E-003	2.329E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
4:08:32PM 11/18/2014

Sample

Sample Name: ICB;AV177
Comment:

Spectrum #1 Analysis #1
Analyst: 60040

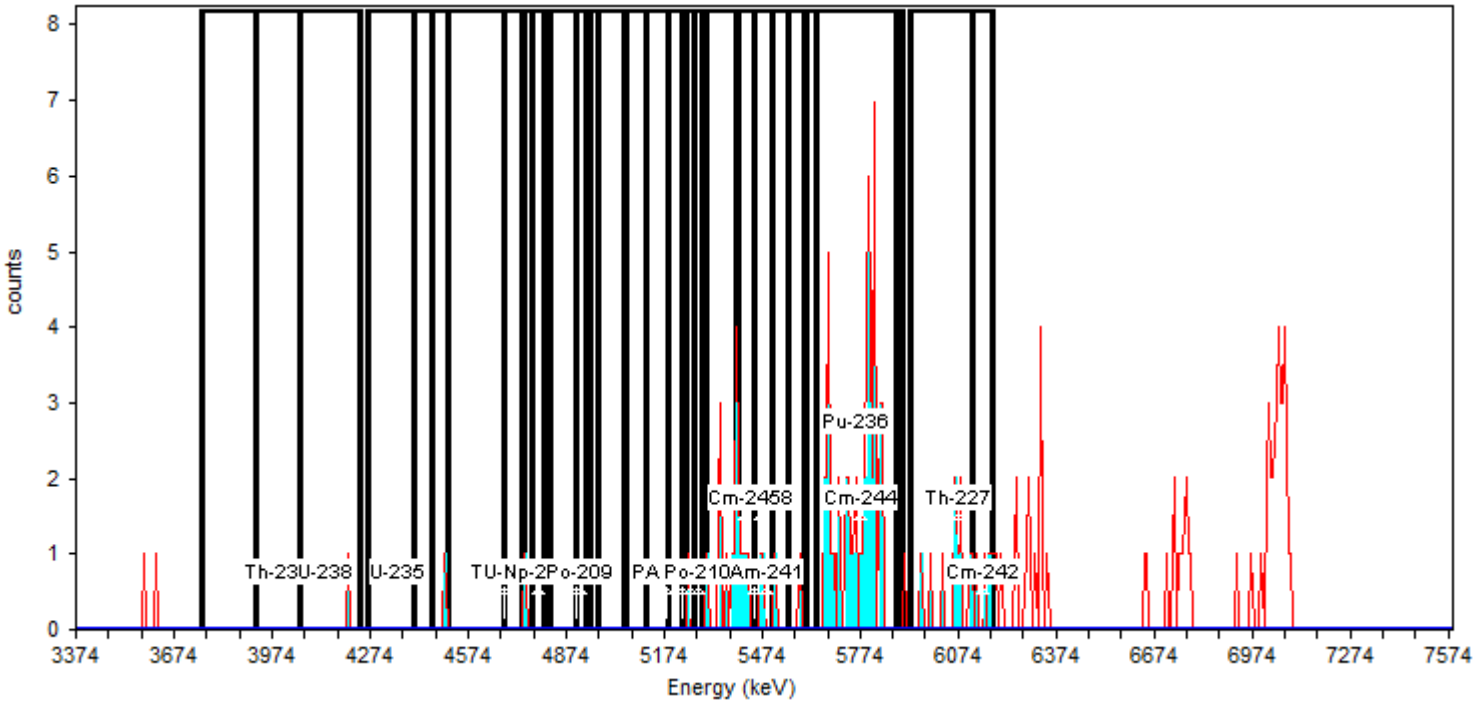
Batch

Batch Name: November2014
Description:

Acquisition

Detector: AV177 , SN: 50-117H3
Acquisition Start Date: 11/18/2014 12:05:47AM
Live Time: 960.00 min.
Real Time: 960.00 min.
Calibration Name: IC-8875;AV177-20140706
Calibration Date: 7/6/2014 9:06:44PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 152.00

Nuclide Summary (ROI)

RegionName	Peak Energy (keV)	Start Energy (keV)	End Energy (keV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3,985.93	3,754.75	4,053.05	0.00	0.000E+000	1.473E-003
U-238	4,135.08	3,918.81	4,239.49	1.00	1.042E-003	1.473E-003
U-235	4,358.81	4,261.86	4,463.21	0.00	0.000E+000	1.473E-003
Th-230	4,679.48	4,403.55	4,746.60	2.00	2.083E-003	1.804E-003
U-234	4,709.31	4,507.96	4,821.17	1.00	1.042E-003	1.473E-003
Pu-242	4,903.21	4,679.48	4,947.95	1.00	1.042E-003	1.473E-003
Th-229	4,858.46	4,739.14	5,119.48	1.00	1.042E-003	1.473E-003
Np-237	4,783.89	4,768.97	4,806.26	0.00	0.000E+000	1.473E-003
Po-209	4,918.12	4,903.21	4,933.04	0.00	0.000E+000	1.473E-003
Pu-239	5,179.14	4,970.33	5,238.80	0.00	0.000E+000	1.473E-003
Am-243	5,231.34	5,052.36	5,305.92	2.00	2.083E-003	1.804E-003
U-232	5,253.71	5,059.82	5,402.86	14.00	1.458E-002	4.034E-003
Th-228	5,447.61	5,186.59	5,507.27	20.00	2.083E-002	4.774E-003
Po-210	5,276.09	5,231.34	5,291.00	1.00	1.042E-003	1.473E-003
Pu-238	5,469.98	5,268.63	5,552.01	20.00	2.083E-002	4.774E-003
Am-241	5,484.90	5,298.46	5,604.22	21.00	2.188E-002	4.886E-003
Cm-245	5,417.78	5,395.41	5,447.61	10.00	1.042E-002	3.455E-003
Pu-236	5,760.83	5,611.67	5,887.60	51.00	5.313E-002	7.512E-003
Cm-244	5,775.74	5,641.51	5,902.52	51.00	5.313E-002	7.512E-003
Th-227	6,074.04	5,932.35	6,178.45	14.00	1.458E-002	4.034E-003
Cm-242	6,148.62	6,118.79	6,178.45	5.00	5.208E-003	2.552E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
4:08:30PM 11/18/2014

Sample

Sample Name: ICB;AV178
Comment:

Spectrum #1 Analysis #1
Analyst: 60040

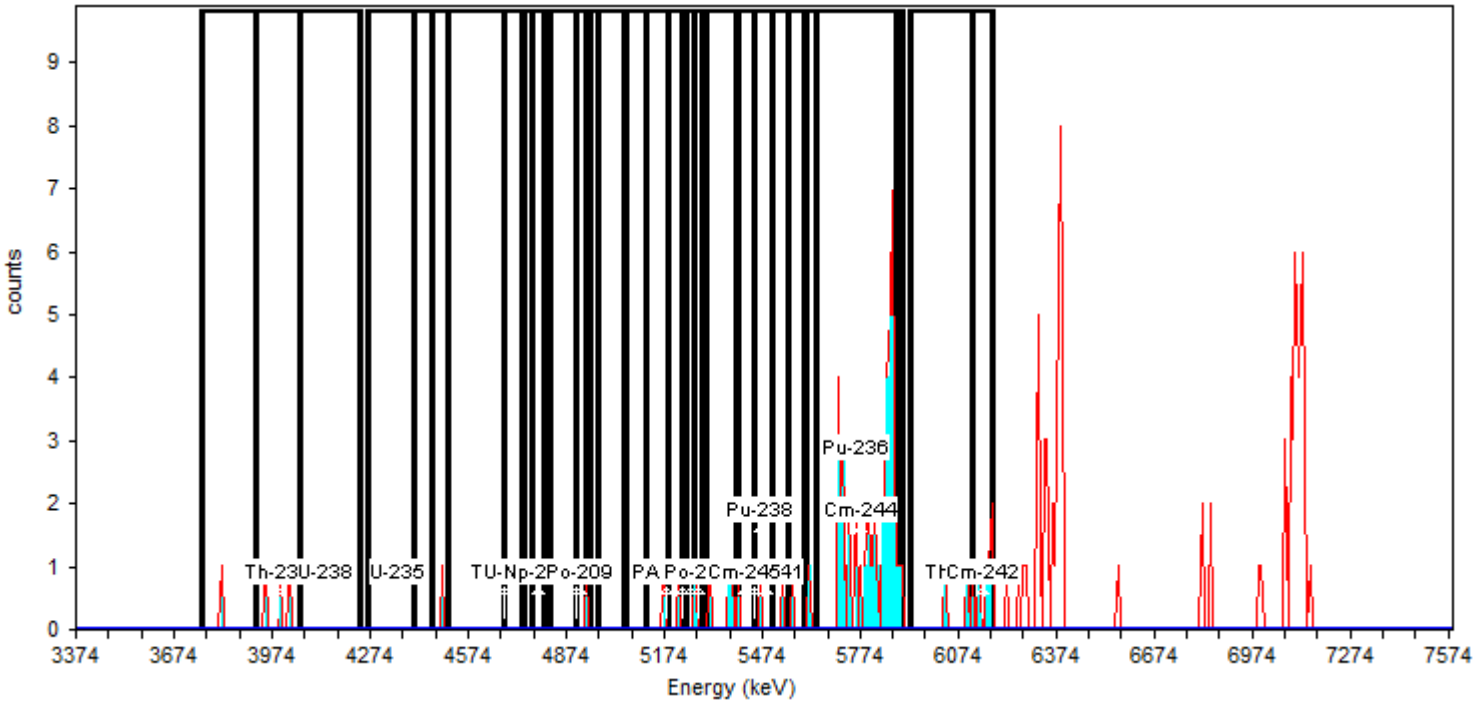
Batch

Batch Name: November2014
Description:

Acquisition

Detector: AV178 , SN: 50-117H4
Acquisition Start Date: 11/18/2014 12:05:47AM
Live Time: 960.00 min.
Real Time: 960.01 min.
Calibration Name: IC-8876;AV178-20140706
Calibration Date: 7/6/2014 9:06:47PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 152.00

Nuclide Summary (ROI)

RegionName	Peak Energy (keV)	Start Energy (keV)	End Energy (keV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3,985.93	3,754.75	4,053.05	4.00	4.167E-003	2.329E-003
U-238	4,135.08	3,918.81	4,239.49	3.00	3.125E-003	2.083E-003
U-235	4,358.81	4,261.86	4,463.21	0.00	0.000E+000	1.473E-003
Th-230	4,679.48	4,403.55	4,746.60	1.00	1.042E-003	1.473E-003
U-234	4,709.31	4,507.96	4,821.17	0.00	0.000E+000	1.473E-003
Pu-242	4,903.21	4,679.48	4,947.95	1.00	1.042E-003	1.473E-003
Th-229	4,858.46	4,739.14	5,119.48	1.00	1.042E-003	1.473E-003
Np-237	4,783.89	4,768.97	4,806.26	0.00	0.000E+000	1.473E-003
Po-209	4,918.12	4,903.21	4,933.04	1.00	1.042E-003	1.473E-003
Pu-239	5,179.14	4,970.33	5,238.80	2.00	2.083E-003	1.804E-003
Am-243	5,231.34	5,052.36	5,305.92	3.00	3.125E-003	2.083E-003
U-232	5,253.71	5,059.82	5,402.86	7.00	7.292E-003	2.946E-003
Th-228	5,447.61	5,186.59	5,507.27	7.00	7.292E-003	2.946E-003
Po-210	5,276.09	5,231.34	5,291.00	1.00	1.042E-003	1.473E-003
Pu-238	5,469.98	5,268.63	5,552.01	7.00	7.292E-003	2.946E-003
Am-241	5,484.90	5,298.46	5,604.22	7.00	7.292E-003	2.946E-003
Cm-245	5,417.78	5,395.41	5,447.61	1.00	1.042E-003	1.473E-003
Pu-236	5,760.83	5,611.67	5,887.60	48.00	5.000E-002	7.292E-003
Cm-244	5,775.74	5,641.51	5,902.52	49.00	5.104E-002	7.366E-003
Th-227	6,074.04	5,932.35	6,178.45	8.00	8.333E-003	3.125E-003
Cm-242	6,148.62	6,118.79	6,178.45	6.00	6.250E-003	2.756E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
4:08:38PM 11/18/2014

Sample

Sample Name: ICB;AV181
Comment:

Spectrum #1 Analysis #1
Analyst: 60040

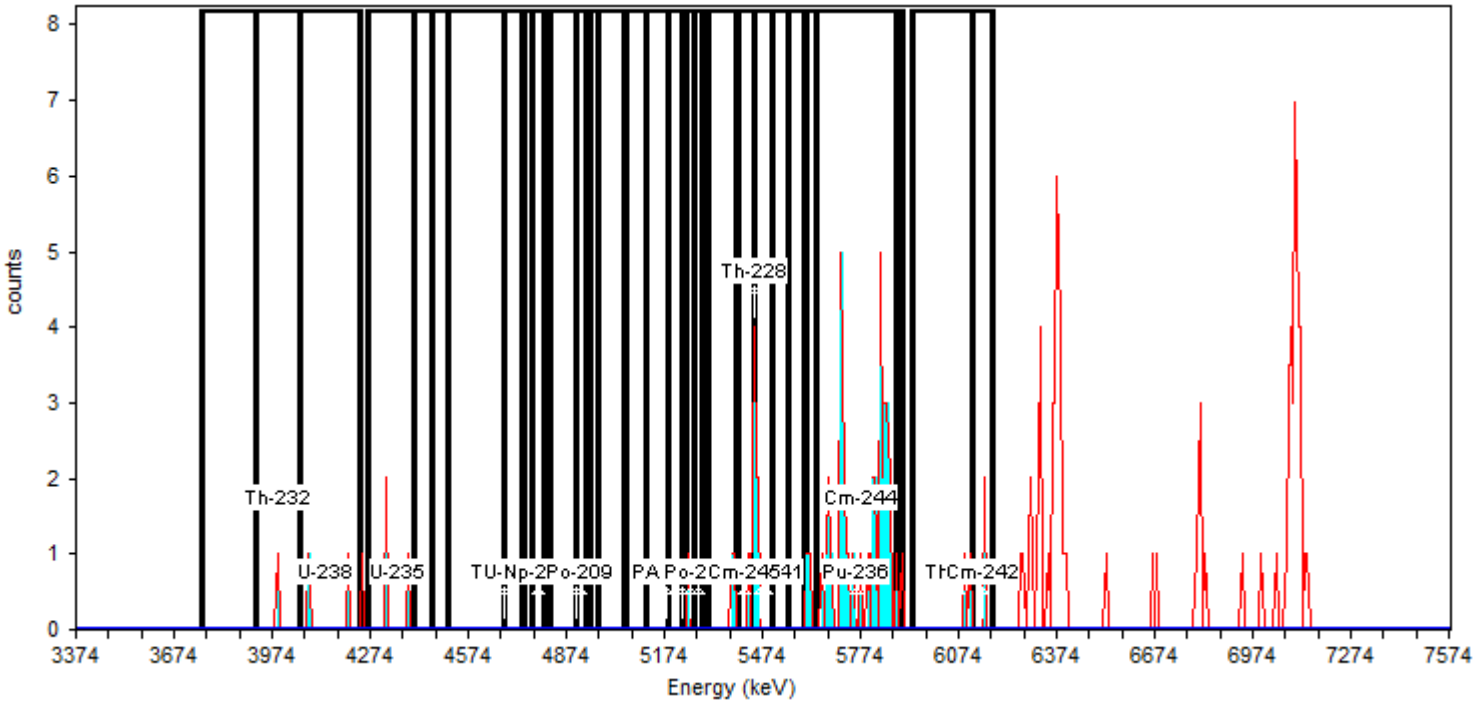
Batch

Batch Name: November2014
Description:

Acquisition

Detector: AV181 , SN: 50-110X1
Acquisition Start Date: 11/18/2014 12:05:48AM
Live Time: 960.00 min.
Real Time: 960.00 min.
Calibration Name: IC-9792;AV181-20140702
Calibration Date: 7/6/2014 6:16:08PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 136.00

Nuclide Summary (ROI)

RegionName	Peak Energy (keV)	Start Energy (keV)	End Energy (keV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3,985.93	3,754.75	4,053.05	1.00	1.042E-003	1.473E-003
U-238	4,135.08	3,918.81	4,239.49	3.00	3.125E-003	2.083E-003
U-235	4,358.81	4,261.86	4,463.21	3.00	3.125E-003	2.083E-003
Th-230	4,679.48	4,403.55	4,746.60	0.00	0.000E+000	1.473E-003
U-234	4,709.31	4,507.96	4,821.17	0.00	0.000E+000	1.473E-003
Pu-242	4,903.21	4,679.48	4,947.95	0.00	0.000E+000	1.473E-003
Th-229	4,858.46	4,739.14	5,119.48	0.00	0.000E+000	1.473E-003
Np-237	4,783.89	4,768.97	4,806.26	0.00	0.000E+000	1.473E-003
Po-209	4,918.12	4,903.21	4,933.04	0.00	0.000E+000	1.473E-003
Pu-239	5,179.14	4,970.33	5,238.80	0.00	0.000E+000	1.473E-003
Am-243	5,231.34	5,052.36	5,305.92	1.00	1.042E-003	1.473E-003
U-232	5,253.71	5,059.82	5,402.86	3.00	3.125E-003	2.083E-003
Th-228	5,447.61	5,186.59	5,507.27	12.00	1.250E-002	3.756E-003
Po-210	5,276.09	5,231.34	5,291.00	1.00	1.042E-003	1.473E-003
Pu-238	5,469.98	5,268.63	5,552.01	11.00	1.146E-002	3.608E-003
Am-241	5,484.90	5,298.46	5,604.22	11.00	1.146E-002	3.608E-003
Cm-245	5,417.78	5,395.41	5,447.61	5.00	5.208E-003	2.552E-003
Pu-236	5,760.83	5,611.67	5,887.60	39.00	4.062E-002	6.588E-003
Cm-244	5,775.74	5,641.51	5,902.52	38.00	3.958E-002	6.505E-003
Th-227	6,074.04	5,932.35	6,178.45	4.00	4.167E-003	2.329E-003
Cm-242	6,148.62	6,118.79	6,178.45	2.00	2.083E-003	1.804E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
10:25:27AM 11/19/2014

Sample

Sample Name: ICB;AV182
Comment:

Spectrum #1 Analysis #1
Analyst: 60040

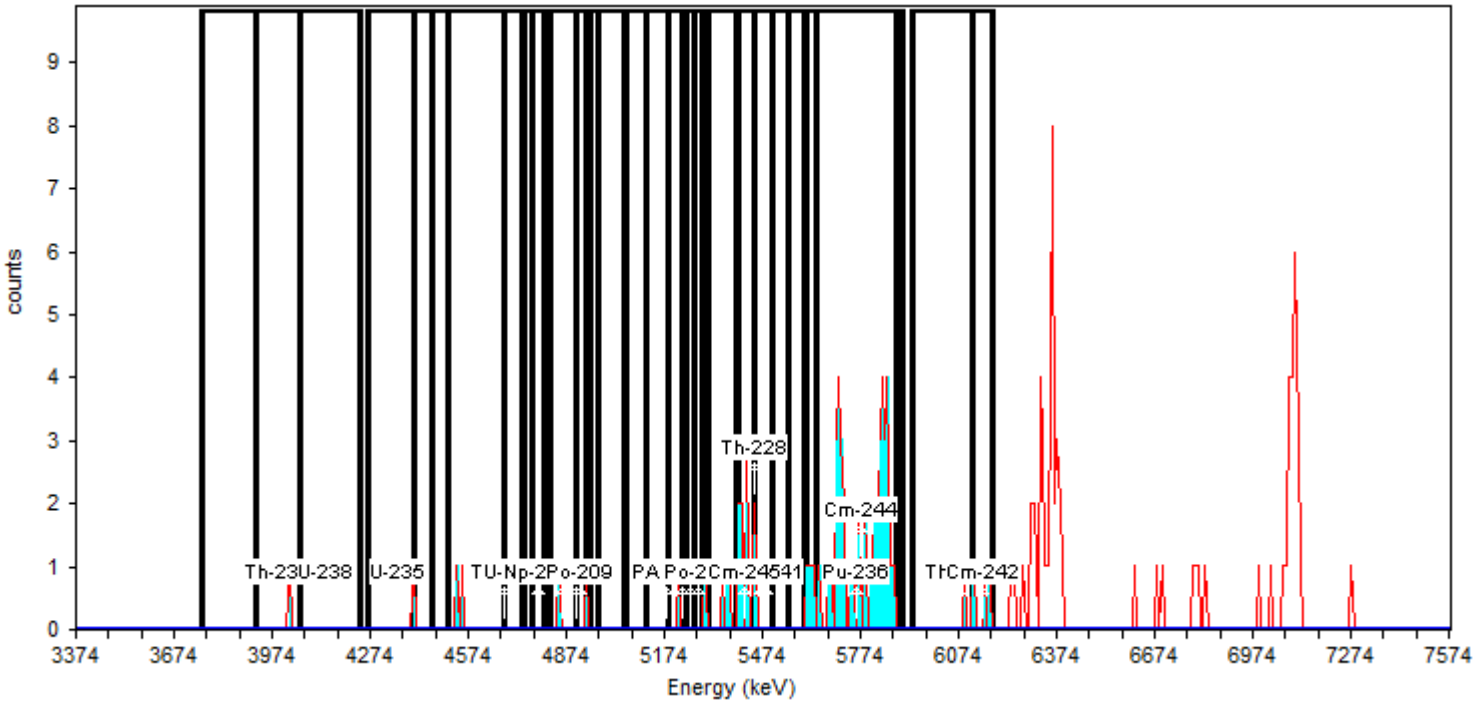
Batch

Batch Name: November2014a
Description:

Acquisition

Detector: AV182 , SN: 50-110X6
Acquisition Start Date: 11/18/2014 5:54:38PM
Live Time: 960.00 min.
Real Time: 960.00 min.
Calibration Name: IC-9793;AV182-20140702
Calibration Date: 7/6/2014 6:16:24PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 148.00

Nuclide Summary (ROI)

RegionName	Peak Energy (keV)	Start Energy (keV)	End Energy (keV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3,985.93	3,754.75	4,053.05	1.00	1.042E-003	1.473E-003
U-238	4,135.08	3,918.81	4,239.49	1.00	1.042E-003	1.473E-003
U-235	4,358.81	4,261.86	4,463.21	1.00	1.042E-003	1.473E-003
Th-230	4,679.48	4,403.55	4,746.60	3.00	3.125E-003	2.083E-003
U-234	4,709.31	4,507.96	4,821.17	2.00	2.083E-003	1.804E-003
Pu-242	4,903.21	4,679.48	4,947.95	2.00	2.083E-003	1.804E-003
Th-229	4,858.46	4,739.14	5,119.48	2.00	2.083E-003	1.804E-003
Np-237	4,783.89	4,768.97	4,806.26	0.00	0.000E+000	1.473E-003
Po-209	4,918.12	4,903.21	4,933.04	1.00	1.042E-003	1.473E-003
Pu-239	5,179.14	4,970.33	5,238.80	1.00	1.042E-003	1.473E-003
Am-243	5,231.34	5,052.36	5,305.92	2.00	2.083E-003	1.804E-003
U-232	5,253.71	5,059.82	5,402.86	7.00	7.292E-003	2.946E-003
Th-228	5,447.61	5,186.59	5,507.27	16.00	1.667E-002	4.295E-003
Po-210	5,276.09	5,231.34	5,291.00	0.00	0.000E+000	1.473E-003
Pu-238	5,469.98	5,268.63	5,552.01	15.00	1.563E-002	4.167E-003
Am-241	5,484.90	5,298.46	5,604.22	15.00	1.563E-002	4.167E-003
Cm-245	5,417.78	5,395.41	5,447.61	10.00	1.042E-002	3.455E-003
Pu-236	5,760.83	5,611.67	5,887.60	49.00	5.104E-002	7.366E-003
Cm-244	5,775.74	5,641.51	5,902.52	45.00	4.688E-002	7.065E-003
Th-227	6,074.04	5,932.35	6,178.45	5.00	5.208E-003	2.552E-003
Cm-242	6,148.62	6,118.79	6,178.45	4.00	4.167E-003	2.329E-003

Sample

Sample Name: ICB;AV189
Comment:

Spectrum #1 Analysis #1
Analyst: 60040

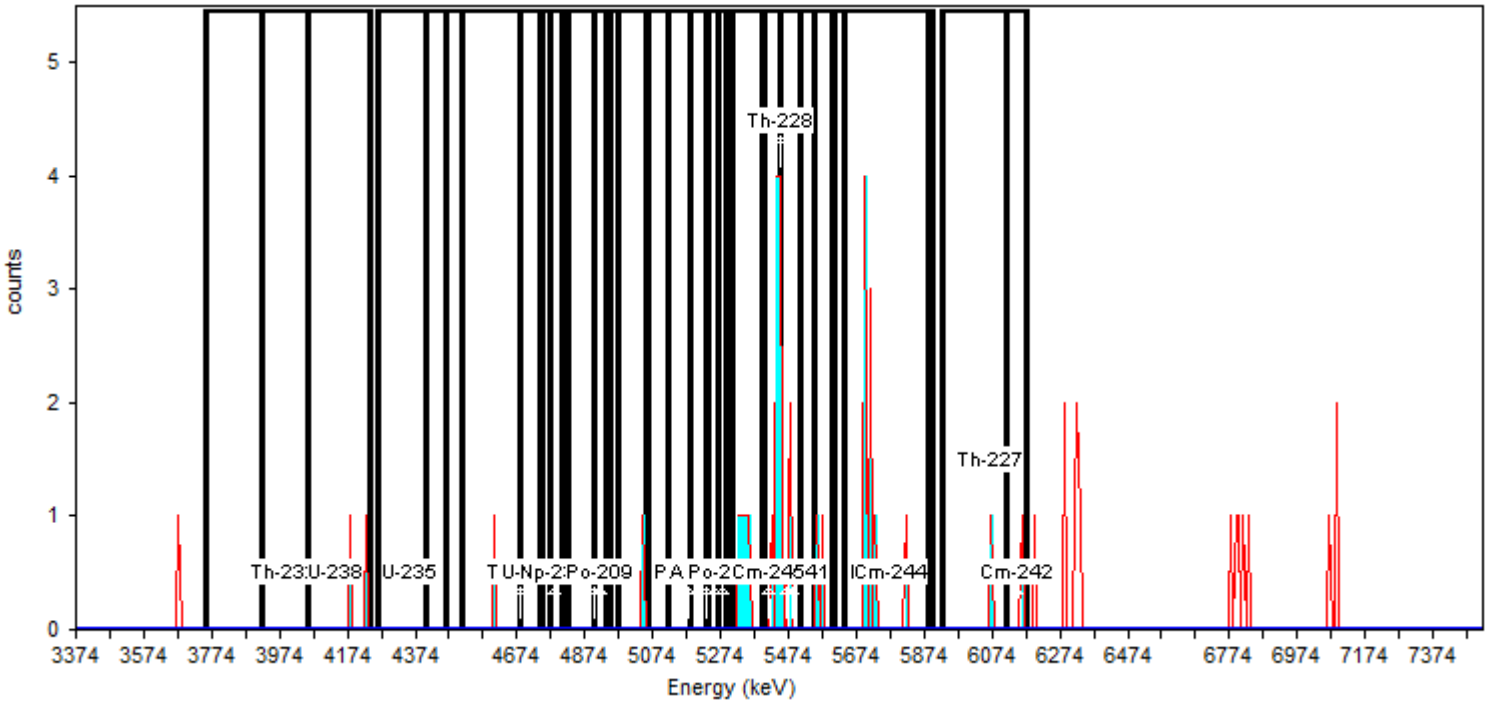
Batch

Batch Name: November2014
Description:

Acquisition

Detector: AV189 , SN: 50-112A3
Acquisition Start Date: 11/18/2014 12:05:48AM
Live Time: 960.00 min.
Real Time: 960.00 min.
Calibration Name: IC-7107;AV189-20140702
Calibration Date: 7/2/2014 12:04:46PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 50.00

Nuclide Summary (ROI)

RegionName	Peak Energy (keV)	Start Energy (keV)	End Energy (keV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3,985.93	3,754.75	4,053.05	0.00	0.000E+000	1.473E-003
U-238	4,135.08	3,918.81	4,239.49	2.00	2.083E-003	1.804E-003
U-235	4,358.81	4,261.86	4,463.21	0.00	0.000E+000	1.473E-003
Th-230	4,679.48	4,403.55	4,746.60	1.00	1.042E-003	1.473E-003
U-234	4,709.31	4,507.96	4,821.17	1.00	1.042E-003	1.473E-003
Pu-242	4,903.21	4,679.48	4,947.95	0.00	0.000E+000	1.473E-003
Th-229	4,858.46	4,739.14	5,119.48	1.00	1.042E-003	1.473E-003
Np-237	4,783.89	4,768.97	4,806.26	0.00	0.000E+000	1.473E-003
Po-209	4,918.12	4,903.21	4,933.04	0.00	0.000E+000	1.473E-003
Pu-239	5,179.14	4,970.33	5,238.80	1.00	1.042E-003	1.473E-003
Am-243	5,231.34	5,052.36	5,305.92	0.00	0.000E+000	1.473E-003
U-232	5,253.71	5,059.82	5,402.86	5.00	5.208E-003	2.552E-003
Th-228	5,447.61	5,186.59	5,507.27	17.00	1.771E-002	4.419E-003
Po-210	5,276.09	5,231.34	5,291.00	0.00	0.000E+000	1.473E-003
Pu-238	5,469.98	5,268.63	5,552.01	17.00	1.771E-002	4.419E-003
Am-241	5,484.90	5,298.46	5,604.22	19.00	1.979E-002	4.658E-003
Cm-245	5,417.78	5,395.41	5,447.61	9.00	9.375E-003	3.294E-003
Pu-236	5,760.83	5,611.67	5,887.60	9.00	9.375E-003	3.294E-003
Cm-244	5,775.74	5,641.51	5,902.52	9.00	9.375E-003	3.294E-003
Th-227	6,074.04	5,932.35	6,178.45	2.00	2.083E-003	1.804E-003
Cm-242	6,148.62	6,118.79	6,178.45	1.00	1.042E-003	1.473E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
4:08:54PM 11/18/2014

Sample

Sample Name: ICB;AV190
Comment:

Spectrum #1 Analysis #1
Analyst: 60040

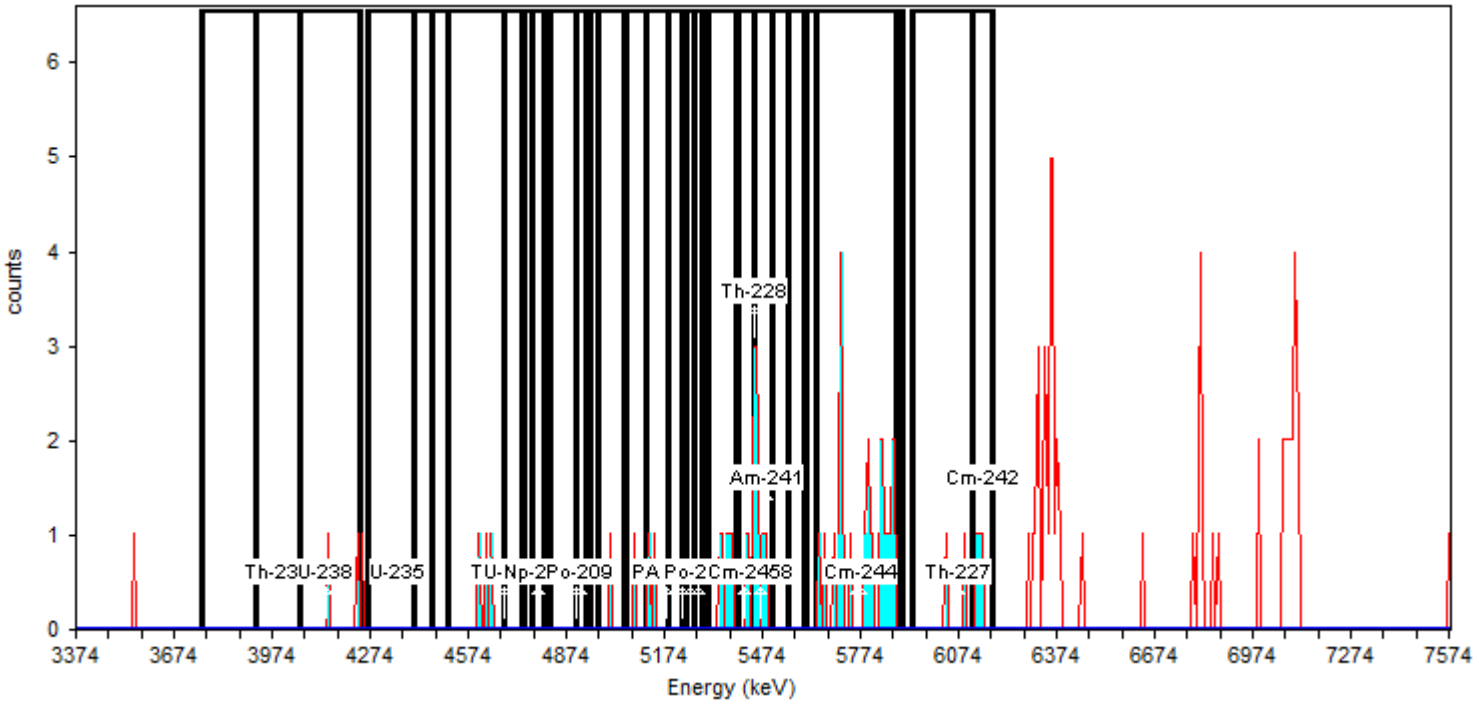
Batch

Batch Name: November2014
Description:

Acquisition

Detector: AV190 , SN: 50-119I7
Acquisition Start Date: 11/18/2014 12:05:50AM
Live Time: 960.00 min.
Real Time: 960.00 min.
Calibration Name: IC-8874;AV190-20140702
Calibration Date: 7/2/2014 12:04:50PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 114.00

Nuclide Summary (ROI)

RegionName	Peak Energy (keV)	Start Energy (keV)	End Energy (keV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3,985.93	3,754.75	4,053.05	0.00	0.000E+000	1.473E-003
U-238	4,135.08	3,918.81	4,239.49	2.00	2.083E-003	1.804E-003
U-235	4,358.81	4,261.86	4,463.21	0.00	0.000E+000	1.473E-003
Th-230	4,679.48	4,403.55	4,746.60	3.00	3.125E-003	2.083E-003
U-234	4,709.31	4,507.96	4,821.17	3.00	3.125E-003	2.083E-003
Pu-242	4,903.21	4,679.48	4,947.95	0.00	0.000E+000	1.473E-003
Th-229	4,858.46	4,739.14	5,119.48	2.00	2.083E-003	1.804E-003
Np-237	4,783.89	4,768.97	4,806.26	0.00	0.000E+000	1.473E-003
Po-209	4,918.12	4,903.21	4,933.04	0.00	0.000E+000	1.473E-003
Pu-239	5,179.14	4,970.33	5,238.80	4.00	4.167E-003	2.329E-003
Am-243	5,231.34	5,052.36	5,305.92	3.00	3.125E-003	2.083E-003
U-232	5,253.71	5,059.82	5,402.86	8.00	8.333E-003	3.125E-003
Th-228	5,447.61	5,186.59	5,507.27	17.00	1.771E-002	4.419E-003
Po-210	5,276.09	5,231.34	5,291.00	0.00	0.000E+000	1.473E-003
Pu-238	5,469.98	5,268.63	5,552.01	17.00	1.771E-002	4.419E-003
Am-241	5,484.90	5,298.46	5,604.22	17.00	1.771E-002	4.419E-003
Cm-245	5,417.78	5,395.41	5,447.61	5.00	5.208E-003	2.552E-003
Pu-236	5,760.83	5,611.67	5,887.60	25.00	2.604E-002	5.311E-003
Cm-244	5,775.74	5,641.51	5,902.52	25.00	2.604E-002	5.311E-003
Th-227	6,074.04	5,932.35	6,178.45	5.00	5.208E-003	2.552E-003
Cm-242	6,148.62	6,118.79	6,178.45	3.00	3.125E-003	2.083E-003

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
4:08:59PM 11/18/2014

Sample

Sample Name: ICB;AV191
Comment:

Spectrum #1 Analysis #1
Analyst: 60040

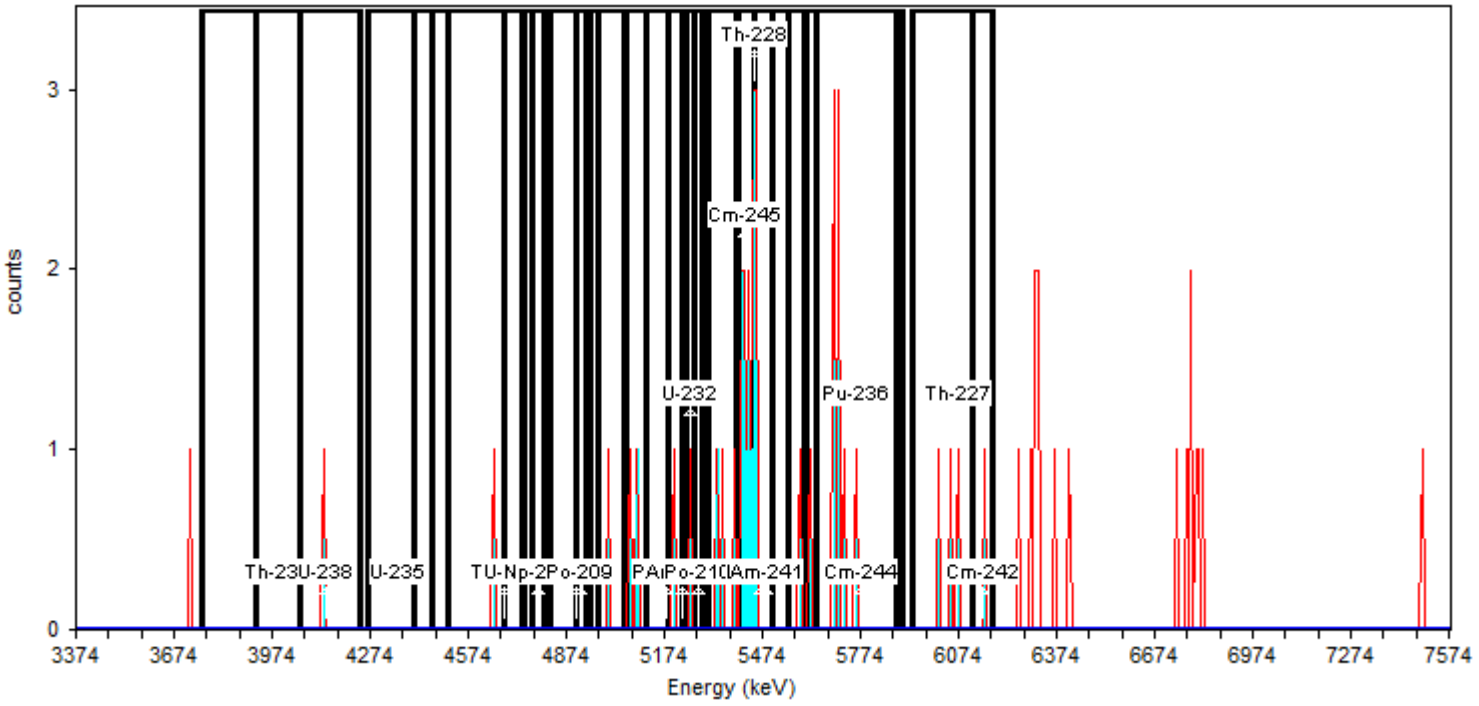
Batch

Batch Name: November2014
Description:

Acquisition

Detector: AV191 , SN: 50-112A2
Acquisition Start Date: 11/18/2014 12:05:49AM
Live Time: 960.00 min.
Real Time: 960.00 min.
Calibration Name: IC-8875;AV191-20140702
Calibration Date: 7/2/2014 12:04:53PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch²



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 55.00

Nuclide Summary (ROI)

RegionName	Peak Energy (keV)	Start Energy (keV)	End Energy (keV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3,985.93	3,754.75	4,053.05	0.00	0.000E+000	1.473E-003
U-238	4,135.08	3,918.81	4,239.49	1.00	1.042E-003	1.473E-003
U-235	4,358.81	4,261.86	4,463.21	0.00	0.000E+000	1.473E-003
Th-230	4,679.48	4,403.55	4,746.60	1.00	1.042E-003	1.473E-003
U-234	4,709.31	4,507.96	4,821.17	1.00	1.042E-003	1.473E-003
Pu-242	4,903.21	4,679.48	4,947.95	0.00	0.000E+000	1.473E-003
Th-229	4,858.46	4,739.14	5,119.48	3.00	3.125E-003	2.083E-003
Np-237	4,783.89	4,768.97	4,806.26	0.00	0.000E+000	1.473E-003
Po-209	4,918.12	4,903.21	4,933.04	0.00	0.000E+000	1.473E-003
Pu-239	5,179.14	4,970.33	5,238.80	4.00	4.167E-003	2.329E-003
Am-243	5,231.34	5,052.36	5,305.92	4.00	4.167E-003	2.329E-003
U-232	5,253.71	5,059.82	5,402.86	7.00	7.292E-003	2.946E-003
Th-228	5,447.61	5,186.59	5,507.27	19.00	1.979E-002	4.658E-003
Po-210	5,276.09	5,231.34	5,291.00	1.00	1.042E-003	1.473E-003
Pu-238	5,469.98	5,268.63	5,552.01	17.00	1.771E-002	4.419E-003
Am-241	5,484.90	5,298.46	5,604.22	18.00	1.875E-002	4.541E-003
Cm-245	5,417.78	5,395.41	5,447.61	11.00	1.146E-002	3.608E-003
Pu-236	5,760.83	5,611.67	5,887.60	9.00	9.375E-003	3.294E-003
Cm-244	5,775.74	5,641.51	5,902.52	8.00	8.333E-003	3.125E-003
Th-227	6,074.04	5,932.35	6,178.45	4.00	4.167E-003	2.329E-003
Cm-242	6,148.62	6,118.79	6,178.45	1.00	1.042E-003	1.473E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
4:08:56PM 11/18/2014

Sample

Sample Name: ICB;AV192
Comment:

Spectrum #1 Analysis #1
Analyst: 60040

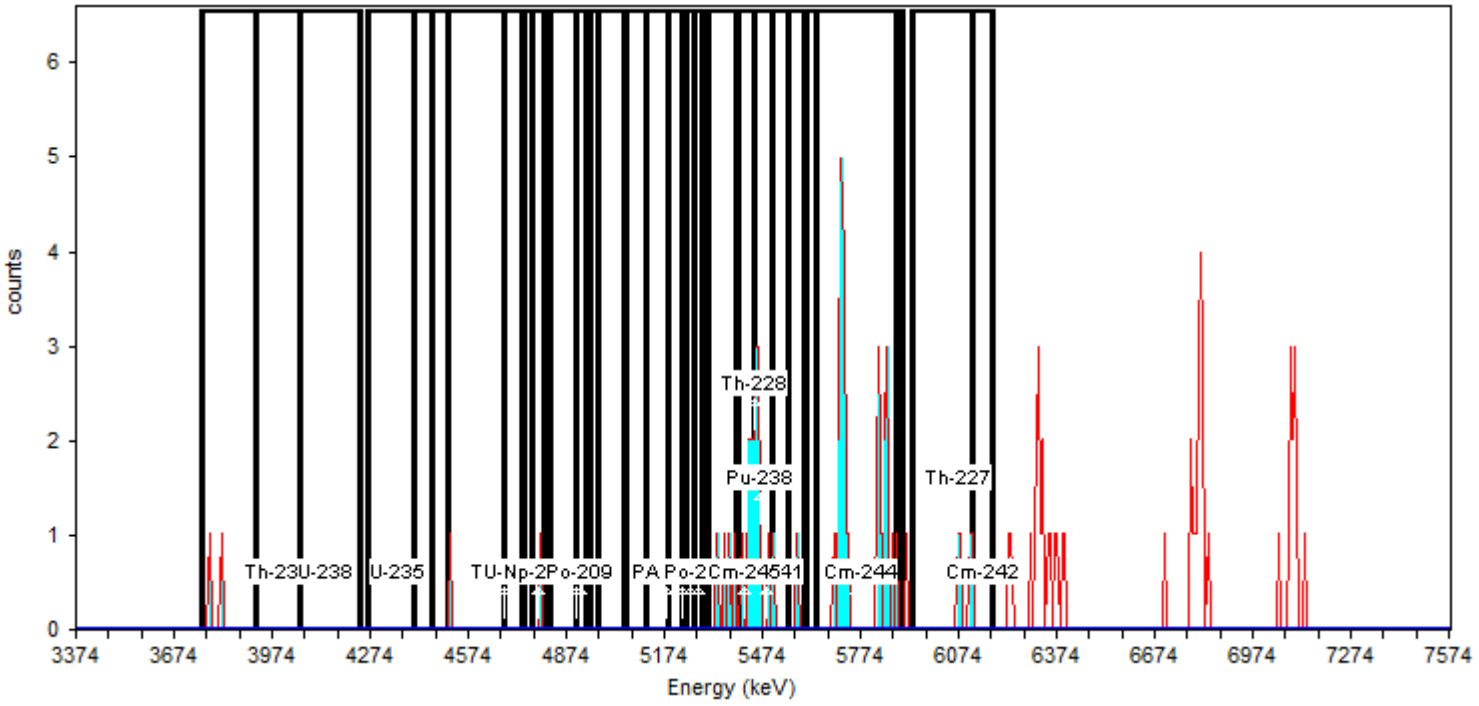
Batch

Batch Name: November2014
Description:

Acquisition

Detector: AV192 , SN: 50-119J7
Acquisition Start Date: 11/18/2014 12:05:50AM
Live Time: 960.00 min.
Real Time: 960.07 min.
Calibration Name: IC-8876;AV192-20140702
Calibration Date: 7/2/2014 12:04:57PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 99.00

Nuclide Summary (ROI)

RegionName	Peak Energy (keV)	Start Energy (keV)	End Energy (keV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3,985.93	3,754.75	4,053.05	2.00	2.083E-003	1.804E-003
U-238	4,135.08	3,918.81	4,239.49	0.00	0.000E+000	1.473E-003
U-235	4,358.81	4,261.86	4,463.21	0.00	0.000E+000	1.473E-003
Th-230	4,679.48	4,403.55	4,746.60	1.00	1.042E-003	1.473E-003
U-234	4,709.31	4,507.96	4,821.17	2.00	2.083E-003	1.804E-003
Pu-242	4,903.21	4,679.48	4,947.95	1.00	1.042E-003	1.473E-003
Th-229	4,858.46	4,739.14	5,119.48	1.00	1.042E-003	1.473E-003
Np-237	4,783.89	4,768.97	4,806.26	1.00	1.042E-003	1.473E-003
Po-209	4,918.12	4,903.21	4,933.04	0.00	0.000E+000	1.473E-003
Pu-239	5,179.14	4,970.33	5,238.80	0.00	0.000E+000	1.473E-003
Am-243	5,231.34	5,052.36	5,305.92	0.00	0.000E+000	1.473E-003
U-232	5,253.71	5,059.82	5,402.86	4.00	4.167E-003	2.329E-003
Th-228	5,447.61	5,186.59	5,507.27	20.00	2.083E-002	4.774E-003
Po-210	5,276.09	5,231.34	5,291.00	0.00	0.000E+000	1.473E-003
Pu-238	5,469.98	5,268.63	5,552.01	20.00	2.083E-002	4.774E-003
Am-241	5,484.90	5,298.46	5,604.22	21.00	2.188E-002	4.886E-003
Cm-245	5,417.78	5,395.41	5,447.61	7.00	7.292E-003	2.946E-003
Pu-236	5,760.83	5,611.67	5,887.60	26.00	2.708E-002	5.413E-003
Cm-244	5,775.74	5,641.51	5,902.52	26.00	2.708E-002	5.413E-003
Th-227	6,074.04	5,932.35	6,178.45	4.00	4.167E-003	2.329E-003
Cm-242	6,148.62	6,118.79	6,178.45	1.00	1.042E-003	1.473E-003

Run Logs

Alpha Spectroscopy Run Log

Detector: AV150

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
07/08/14 17:55	140	IC 160-130245/1		130245			PS
07/08/14 22:47	60	ICV 160-130255/1		130255			PS
11/18/14 00:05	960	ICB 160-158210/1		158210			
11/18/14 17:54	960	ICB 160-158210/2		158210			PS
11/19/14 18:43	60	CCV 160-158307/1		158307			PS
11/24/14 18:02	1	PULSER 160-159623/1		159623			MLK
11/24/14 19:53	400	ZZZZZ		159623			

Detector: AV165

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
07/06/14 21:29	140	IC 160-130240/1		130240			PS
07/09/14 00:44	60	ICV 160-130508/1		130508			PS
11/18/14 00:05	960	ICB 160-158225/1		158225			PS
11/19/14 18:45	60	CCV 160-158316/1		158316			PS
11/23/14 14:44	1	PULSER 160-159070/1		159070			MLK
11/23/14 22:34	400	MB 160-158130/1-A		159070	158130	A-01-R	MLK

Detector: AV168

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
07/06/14 18:43	140	IC 160-129705/1		129705			PS
07/09/14 00:44	60	ICV 160-130510/1		130510			PS
11/18/14 00:05	960	ICB 160-158228/1		158228			PS
11/19/14 18:45	60	CCV 160-158317/1		158317			PS
11/23/14 14:44	1	PULSER 160-159071/1		159071			MLK
11/23/14 22:34	400	LCS 160-158130/2-A		159071	158130	A-01-R	MLK

Detector: AV174

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
07/06/14 18:45	140	IC 160-129711/1		129711			PS
07/13/14 18:26	60	ICV 160-131007/1		131007			PS
11/18/14 00:05	960	ICB 160-158234/1		158234			PS
11/19/14 01:09	60	CCV 160-158321/1		158321			PS
11/23/14 14:44	1	PULSER 160-159075/1		159075			MLK
11/23/14 22:34	400	160-9451-1	BG03-20141114-21	159075	158130	A-01-R	MLK

Detector: AV176

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
07/06/14 18:45	140	IC 160-129713/1		129713			PS
07/09/14 18:38	60	ICV 160-130518/1		130518			PS
11/18/14 00:05	960	ICB 160-158236/1		158236			PS
11/19/14 18:46	60	CCV 160-158322/1		158322			PS
11/23/14 14:44	1	PULSER 160-159076/1		159076			MLK
11/23/14 22:34	400	160-9451-2	BG04-20141114-21	159076	158130	A-01-R	MLK

Detector: AV177

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
07/06/14 18:45	140	IC 160-129714/1		129714			PS

Alpha Spectroscopy Run Log

Detector: AV177 (Continued)

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
07/09/14 18:39	60	ICV 160-130519/1		130519			PS
11/18/14 00:05	960	ICB 160-158237/1		158237			PS
11/19/14 21:14	60	CCV 160-158323/1		158323			PS
11/23/14 14:44	1	PULSER 160-159077/1		159077			MLK
11/23/14 22:34	400	160-9451-3	BG05-20141114-21	159077	158130	A-01-R	MLK

Detector: AV178

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
07/06/14 18:46	140	IC 160-129715/1		129715			PS
07/09/14 18:39	60	ICV 160-130520/1		130520			PS
11/18/14 00:05	960	ICB 160-158238/1		158238			PS
11/19/14 01:10	60	CCV 160-158324/1		158324			PS
11/23/14 14:44	1	PULSER 160-159078/1		159078			MLK
11/23/14 22:34	400	160-9451-4	N1-20141114-21	159078	158130	A-01-R	MLK

Detector: AV181

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
07/02/14 09:00	140	IC 160-129668/1		129668			PS
07/09/14 18:40	60	ICV 160-130523/1		130523			PS
11/18/14 00:05	960	ICB 160-158241/1		158241			PS
11/18/14 20:50	60	CCV 160-158241/2		158241			PS
11/21/14 13:49	1	PULSER 160-158845/1		158845			MLK
11/21/14 16:13	400	MB 160-158134/1-A		158845	158134	A-01-R	MLK

Detector: AV182

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
07/02/14 09:01	140	IC 160-129669/1		129669			PS
07/09/14 18:40	60	ICV 160-130524/1		130524			PS
11/18/14 00:05	960	ICB 160-158242/1		158242			
11/18/14 17:54	960	ICB 160-158242/2		158242			PS
11/19/14 21:14	60	CCV 160-158325/1		158325			PS
11/21/14 13:49	1	PULSER 160-158846/1		158846			MLK
11/21/14 16:13	400	LCS 160-158134/2-A		158846	158134	A-01-R	MLK

Detector: AV185

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
07/02/14 09:02	140	IC 160-129672/1		129672			PS
07/09/14 18:40	60	ICV 160-130527/1		130527			PS
11/18/14 00:05	960	ICB 160-158245/1		158245			PS
11/18/14 22:23	60	CCV 160-158245/2		158245			
11/19/14 23:05	60	CCV 160-158327/1		158327			PS
11/21/14 13:49	1	PULSER 160-158848/1		158848			MLK
11/21/14 16:13	400	ZZZZZ		158848			

Detector: AV189

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
07/02/14 09:03	140	IC 160-129676/1		129676			PS

Alpha Spectroscopy Run Log

Detector: AV189 (Continued)

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
07/09/14 19:54	60	ICV 160-130531/1		130531			PS
11/18/14 00:05	960	ICB 160-158249/1		158249			PS
11/18/14 22:23	60	CCV 160-158249/2		158249			PS
11/21/14 13:49	1	PULSER 160-158850/1		158850			MLK
11/21/14 16:13	400	160-9451-1	BG03-20141114-21	158850	158134	A-01-R	MLK

Detector: AV190

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
07/02/14 09:03	140	IC 160-129677/1		129677			PS
07/09/14 19:54	60	ICV 160-130532/1		130532			PS
11/18/14 00:05	960	ICB 160-158250/1		158250			PS
11/18/14 20:50	60	CCV 160-158250/2		158250			PS
11/21/14 13:49	1	PULSER 160-158851/1		158851			MLK
11/21/14 16:13	400	160-9451-2	BG04-20141114-21	158851	158134	A-01-R	MLK

Detector: AV191

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
07/02/14 09:04	140	IC 160-129678/1		129678			PS
07/09/14 19:55	60	ICV 160-130533/1		130533			PS
11/18/14 00:05	960	ICB 160-158251/1		158251			PS
11/18/14 22:24	60	CCV 160-158251/2		158251			PS
11/21/14 13:49	1	PULSER 160-158852/1		158852			MLK
11/21/14 16:13	400	160-9451-3	BG05-20141114-21	158852	158134	A-01-R	MLK

Detector: AV192

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
07/02/14 09:04	140	IC 160-129679/1		129679			PS
07/09/14 19:55	60	ICV 160-130534/1		130534			PS
11/18/14 00:05	960	ICB 160-158252/1		158252			PS
11/18/14 20:50	60	CCV 160-158252/2		158252			PS
11/21/14 13:49	1	PULSER 160-158853/1		158853			MLK
11/21/14 16:13	400	160-9451-4	N1-20141114-21	158853	158134	A-01-R	MLK

GAS FLOW PROPORTIONAL COUNTER

Method 9310

Gross Alpha / Beta (GFPC) by Method 9310

Prep Batch: 158146

Preparation, Evaporation

Gas Flow Proportional Counter Analysis Detail Report
Prep Batch: 158146

Lab ID: MB 160-158146/1-A | Analyzed: 11/23/14 19:35 | Decay Corrected: No | Ts: 200
Client ID: | Detector: Orange4 | Yield Truncated: No | Tb: 1000
Sigma: 2 | Dil Fac: 1 | Calibration Type: 1

Analyte	MB Result	Count Unc	Total Unc	Qualifier	Unit	RL	MDC	Cs	Cb	CPMs	CPMb	Eff	Anly Batch
Gross Alpha	1.140	0.925	0.934	U	pCi/L	3.00	1.41	36	102	0.180	0.102	0.15410	159374
Gross Beta	0.3974	0.560	0.562	U	pCi/L	4.00	0.911	105	413	0.525	0.413	0.45453	159374

Lab ID: LCS 160-158146/2-A | Analyzed: 11/23/14 19:35 | Decay Corrected: No | Ts: 200
Client ID: | Detector: Orange6 | Yield Truncated: No | Tb: 1000
Sigma: 2 | Dil Fac: 1 | Calibration Type: 1

Analyte	LCS Result	Count Unc	Total Unc	Qualifier	Unit	RL	MDC	Cs	Cb	CPMs	CPMb	Eff	Anly Batch
Gross Alpha	55.39	5.07	8.10		pCi/L	3.00	2.49	542	154	2.710	0.154	0.10394	159374

Lab ID: LCSB 160-158146/3-A | Analyzed: 11/23/14 19:35 | Decay Corrected: No | Ts: 200
Client ID: | Detector: Orange11 | Yield Truncated: No | Tb: 1000
Sigma: 2 | Dil Fac: 1 | Calibration Type: 1

Analyte	LCSB Result	Count Unc	Total Unc	Qualifier	Unit	RL	MDC	Cs	Cb	CPMs	CPMb	Eff	Anly Batch
Gross Beta	99.25	3.32	10.5		pCi/L	4.00	1.13	3834	571	19.170	0.571	0.42149	159374

Lab ID: 160-9451-1 | Analyzed: 11/23/14 19:36 | Decay Corrected: No | Ts: 200
Client ID: BG03-20141114-21 | Detector: Orange17 | Yield Truncated: No | Tb: 1000
Sigma: 2 | Dil Fac: 1 | Calibration Type: 1

Analyte	Result	Count Unc	Total Unc	Qualifier	Unit	RL	MDC	Cs	Cb	CPMs	CPMb	Eff	Anly Batch
Gross Alpha	51.0	13.6	14.8	G	pCi/L	3.00	14.4	112	153	0.560	0.153	0.10265	159374
Gross Beta	41.5	6.49	7.70	G	pCi/L	4.00	6.46	387	442	1.935	0.442	0.41415	159374

Lab ID: 160-9451-2 | Analyzed: 11/23/14 19:36 | Decay Corrected: No | Ts: 200
Client ID: BG04-20141114-21 | Detector: Orange18 | Yield Truncated: No | Tb: 1000
Sigma: 2 | Dil Fac: 1 | Calibration Type: 1

Analyte	Result	Count Unc	Total Unc	Qualifier	Unit	RL	MDC	Cs	Cb	CPMs	CPMb	Eff	Anly Batch
Gross Alpha	18.2	5.56	5.93	G	pCi/L	3.00	5.95	85	115	0.425	0.115	0.10510	159374
Gross Beta	17.1	2.85	3.33		pCi/L	4.00	2.86	336	397	1.680	0.397	0.41923	159374

Gas Flow Proportional Counter Analysis Detail Report
Prep Batch: 158146

Lab ID:	160-9451-3	Analyzed:	11/23/14 19:37	Decay Corrected:	No	Ts:	200
Client ID:	BG05-20141114-21	Detector:	Orange19	Yield Truncated:	No	Tb:	1000
Sigma:	2	Dil Fac:	1	Calibration Type:	1		

Analyte	Result	Count Unc	Total Unc	Qualifier	Unit	RL	MDC	Cs	Cb	CPMs	CPMb	Eff	Anly Batch
Gross Alpha	13.5	4.40	4.66	G	pCi/L	3.00	4.50	67	77	0.335	0.077	0.10721	159374
Gross Beta	4.36	1.92	1.97		pCi/L	4.00	2.62	169	419	0.845	0.419	0.42090	159374

Lab ID:	160-9451-4	Analyzed:	11/23/14 19:37	Decay Corrected:	No	Ts:	200
Client ID:	N1-20141114-21	Detector:	Orange21	Yield Truncated:	No	Tb:	1000
Sigma:	2	Dil Fac:	1	Calibration Type:	1		

Analyte	Result	Count Unc	Total Unc	Qualifier	Unit	RL	MDC	Cs	Cb	CPMs	CPMb	Eff	Anly Batch
Gross Alpha	0.201	0.763	0.764	U	pCi/L	3.00	1.41	24	106	0.120	0.106	0.15680	159374
Gross Beta	0.192	0.432	0.432	U	pCi/L	4.00	0.742	65	281	0.325	0.281	0.45838	159374

Quality Control Summary

Method Blank ID:	Analyte	Parent Result	Spike Added	MB Result	Qualifier	Unit	% Rec	% Rec Limits	RPD	RER	DER	RER Limit	Z Factor
MB 160-158146/1-A	Gross Alpha			1.140	U	pCi/L							
MB 160-158146/1-A	Gross Beta			0.3974	U	pCi/L							

Lab Control Sample ID:	Analyte	Parent Result	Spike Added	LCS Result	Qualifier	Unit	% Rec	% Rec Limits	RPD	RER	DER	RER Limit	Z Factor
LCS 160-158146/2-A	Gross Alpha		50.1	55.39		pCi/L	111	73 - 133					

Lab Control Sample Beta ID:	Analyte	Parent Result	Spike Added	LCSB Result	Qualifier	Unit	% Rec	% Rec Limits	RPD	RER	DER	RER Limit	Z Factor
LCSB 160-158146/3-A	Gross Beta		96.2	99.25		pCi/L	103	75 - 125					

Glossary:

Ts = Count Duration, Sample
Tb = Count Duration, Background
Cs = Total Counts, Sample
Cb = Total Counts, Background
CPMs = Counts Per Minute, Sample
CPMb = Counts Per Minute, Background
Eff = Efficiency

GAS FLOW PROPORTIONAL COUNTER BATCH WORKSHEET

Lab Name: TestAmerica St. Louis Job No.: 160-9451-1

SDG No.:

Batch Number: 158146 Batch Start Date: 11/19/14 12:09 Batch Analyst: Hines, Joseph

Batch Method: Evaporation Batch End Date: 11/21/14 18:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	GrossWtPlncht	TareWtPlncht	MassPlncht	Sr-90 00023	Th-230 00024
MB 160-158146/1		Evaporation, 9310		200 mL	8.6218 g	8.6215 g	0.0003 g		
LCS 160-158146/2		Evaporation, 9310		200 mL	8.6983 g	8.6442 g	0.0541 g		1 mL
LCSB 160-158146/3		Evaporation, 9310		200 mL	8.6745 g	8.6199 g	0.0546 g	1 mL	
160-9451-F-1	BG03-20141114-21	Evaporation, 9310	T	35 mL	8.6868 g	8.6089 g	0.0779 g		
160-9451-F-2	BG04-20141114-21	Evaporation, 9310	T	73 mL	8.6985 g	8.6223 g	0.0762 g		
160-9451-E-3	BG05-20141114-21	Evaporation, 9310	T	80 mL	8.6739 g	8.5962 g	0.0777 g		
160-9451-F-4	N1-20141114-21	Evaporation, 9310	T	200 mL	8.6381 g	8.6374 g	0.0007 g		

Lab Sample ID	Client Sample ID	Method Chain	Basis	AnalysisComment					
MB 160-158146/1		Evaporation, 9310							
LCS 160-158146/2		Evaporation, 9310		A					
LCSB 160-158146/3		Evaporation, 9310		B					
160-9451-F-1	BG03-20141114-21	Evaporation, 9310	T						
160-9451-F-2	BG04-20141114-21	Evaporation, 9310	T						
160-9451-E-3	BG05-20141114-21	Evaporation, 9310	T						
160-9451-F-4	N1-20141114-21	Evaporation, 9310	T						

Batch Notes	
Person's name who witnessed reagent drop	lem
Analyst who added reagent	mjs
SOP Number	ST-RC-0002, ST-RC-0020

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - A

Addr: 4

Sample ID MB 160-158146/1-A

Repeat 1

Carrier No. 0

Batch ID 158146

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 11/23/2014 7:35:28 PM

Collection Date 1 1/1/1900

Half Life 0.00 ***days***

Count Ended 11/23/2014 10:55:44 PM

Collection Date 2 1/1/1900

Decay Factor 1.000

Sample Count Time 200.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.102	36	0.180	0.078
sd	0.000			0.010	6.000	0.030	0.032
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.413	105	0.525	0.112
sd	0.000			0.020	10.247	0.051	0.055

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - C

Addr: 6

Sample ID LCS 160-158146/2-A

Repeat 1

Carrier No. 0

Batch ID 158146

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 11/23/2014 7:35:40 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 11/23/2014 10:55:53 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 200.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.154	542	2.710	2.556
sd	0.000			0.012	23.281	0.116	0.117
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.490	290	1.450	0.960
sd	0.000			0.022	17.029	0.085	0.088

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 8-11 - D

Addr: 11

Sample ID LCSB 160-158146/3-A

Repeat 1

Carrier No. 0

Batch ID 158146

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 11/23/2014 7:35:53 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 11/23/2014 10:56:07 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 200.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.094	33	0.165	0.071
sd	0.000			0.010	5.745	0.029	0.030
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.571	3,834	19.170	18.599
sd	0.000			0.024	61.919	0.310	0.311

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - B

Addr: 17

Sample ID 160-9451-F-1-A

Repeat 1

Carrier No. 0

Batch ID 158146

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 11/23/2014 7:36:42 PM

Collection Date 1 1/1/1900

Half Life 0.00 ***days***

Count Ended 11/23/2014 10:56:56 PM

Collection Date 2 1/1/1900

Decay Factor 1.000

Sample Count Time 200.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.153	112	0.560	0.407
sd	0.000			0.012	10.583	0.053	0.054
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.442	387	1.935	1.493
sd	0.000			0.021	19.672	0.098	0.101

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - C

Addr: 18

Sample ID 160-9451-F-2-A

Repeat 1

Carrier No. 0

Batch ID 158146

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 11/23/2014 7:36:51 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 11/23/2014 10:57:05 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 200.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.115	85	0.425	0.310
sd	0.000			0.011	9.220	0.046	0.047
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.397	336	1.680	1.283
sd	0.000			0.020	18.330	0.092	0.094

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - D

Addr: 19

Sample ID 160-9451-E-3-A

Repeat 1

Carrier No. 0

Batch ID 158146

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 11/23/2014 7:37:01 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 11/23/2014 10:57:15 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 200.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.077	67	0.335	0.258
sd	0.000			0.009	8.185	0.041	0.042
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.419	169	0.845	0.426
sd	0.000			0.020	13.000	0.065	0.068

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 20-23 - B

Addr: 21

Sample ID 160-9451-F-4-A

Repeat 1

Carrier No. 0

Batch ID 158146

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 11/23/2014 7:37:12 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 11/23/2014 10:57:26 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 200.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.106	24	0.120	0.014
sd	0.000			0.010	4.899	0.024	0.027
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.281	65	0.325	0.044
sd	0.000			0.017	8.062	0.040	0.044

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Daily Checks

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Gas Proportional Counter Daily Quality Control Checks

APPROVED
By Ashley Silas at 1:14 am, Nov 25, 2014

Sunday, November 23, 2014

Instrument: ***Orange***

Detector ID	Check Type	Alpha CPM	Alpha Mean	Alpha +/- limit	Alpha Deviation	Alpha Flag	Beta CPM	Beta Mean	Beta +/- limit	Beta Deviation	Beta Flag
Detector 0											
5:21 PM	**Efficiency**										
	Background	0.125	0.086	0.024	0.039	**Pass**	0.355	0.396	0.065	-0.041	**Pass**
	Crosstalk										
7:11 PM	**Efficiency**	10070.13	10149.65	304.49	-79.52	**Pass**					
	Background										
	Crosstalk	3056.000	3258.900	55.666	-202.900	**DOEF**					
7:16 PM	**Efficiency**						32965.97	33739.55	1012.19	-773.58	**Pass**
	Background										
	Crosstalk						948.585	237.400	143.963	711.185	**DOEF**
Detector 1											
5:21 PM	**Efficiency**										
	Background	0.250	0.103	0.026	0.147	**FAIL**	0.290	0.356	0.073	-0.066	**Pass**
	Crosstalk										
7:11 PM	**Efficiency**	9905.67	10173.40	305.20	-267.73	**Pass**					
	Background										
	Crosstalk	2957.000	3028.900	109.715	-71.900	**Pass**					
7:16 PM	**Efficiency**						33689.18	33478.80	1004.36	210.38	**Pass**
	Background										
	Crosstalk						266.098	42.975	30.711	223.123	**DOEF**
Detector 2											
5:21 PM	**Efficiency**										
	Background	0.415	0.234	0.038	0.181	**FAIL**	0.880	0.627	0.074	0.253	**FAIL**
	Crosstalk										
7:11 PM	**Efficiency**	10986.50	10972.86	329.19	13.64	**Pass**					
	Background										
	Crosstalk	3240.500	3366.220	137.933	-125.720	**Pass**					

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Gas Proportional Counter Daily Quality Control Checks

Sunday, November 23, 2014

Instrument: Orange

Detector ID	Check Type	Alpha CPM	Alpha Mean	Alpha +/- limit	Alpha Deviation	Alpha Flag	Beta CPM	Beta Mean	Beta +/- limit	Beta Deviation	Beta Flag
7:16 PM	**Efficiency**						23050.83	23193.20	695.80	-142.37	**Pass**
	Background										
	Crosstalk						286.450	37.375	27.717	249.075	**DOEF**
Detector 3											
5:21 PM	**Efficiency**										
	Background	0.135	0.095	0.020	0.041	**Pass**	0.665	0.507	0.062	0.158	**Pass**
	Crosstalk										
7:12 PM	**Efficiency**	10729.08	10703.24	321.10	25.84	**Pass**					
	Background										
	Crosstalk	3304.500	3488.780	118.326	-184.280	**Pass**					
7:16 PM	**Efficiency**						30619.19	30620.69	918.62	-1.51	**Pass**
	Background										
	Crosstalk						287.468	43.524	34.997	243.944	**DOEF**
Detector 4											
5:21 PM	**Efficiency**										
	Background	0.145	0.094	0.026	0.051	**Pass**	0.465	0.435	0.081	0.030	**Pass**
	Crosstalk										
7:12 PM	**Efficiency**	10321.89	10616.58	318.50	-294.69	**Pass**					
	Background										
	Crosstalk	3880.000	4041.960	93.896	-161.960	**Pass**					
7:17 PM	**Efficiency**						26019.43	26048.10	781.44	-28.67	**Pass**
	Background										
	Crosstalk						7.123	8.525	2.042	-1.402	**Pass**
Detector 5											
5:21 PM	**Efficiency**										
	Background	0.385	0.155	0.047	0.230	**FAIL**	0.625	0.425	0.091	0.200	**Pass**
	Crosstalk										

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Gas Proportional Counter Daily Quality Control Checks

Sunday, November 23, 2014

Instrument: ***Orange***

Detector ID	Check Type	Alpha CPM	Alpha Mean	Alpha +/- limit	Alpha Deviation	Alpha Flag	Beta CPM	Beta Mean	Beta +/- limit	Beta Deviation	Beta Flag
7:12 PM	**Efficiency**	10682.50	10779.16	323.37	-96.66	**Pass**					
	Background										
	Crosstalk	3894.000	3963.700	62.110	-69.700	**Pass**					
7:17 PM	**Efficiency**						21486.25	21843.90	655.32	-357.66	**Pass**
	Background										
	Crosstalk						5.088	5.095	1.480	-0.007	**Pass**
Detector 6											
5:21 PM	**Efficiency**										
	Background	0.120	0.108	0.029	0.012	**Pass**	0.570	0.495	0.060	0.075	**Pass**
	Crosstalk										
7:12 PM	**Efficiency**	10490.68	10768.46	323.05	-277.78	**Pass**					
	Background										
	Crosstalk	3779.500	3929.080	151.831	-149.580	**Pass**					
7:17 PM	**Efficiency**						29165.07	29157.55	874.73	7.52	**Pass**
	Background										
	Crosstalk						5.088	5.750	1.400	-0.662	**Pass**
Detector 7											
5:22 PM	**Efficiency**										
	Background	0.215	0.087	0.039	0.128	**FAIL**	0.475	0.383	0.066	0.092	**Pass**
	Crosstalk										
7:12 PM	**Efficiency**	11682.19	11415.50	342.47	266.69	**Pass**					
	Background										
	Crosstalk	4207.500	4055.000	78.818	152.500	**Pass**					
7:17 PM	**Efficiency**						27972.26	27782.35	833.47	189.91	**Pass**
	Background										
	Crosstalk						10.176	4.600	1.392	5.576	**DOEF**
Detector 8											

TestAmerica
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Sunday, November 23, 2014

Instrument: Orange

Detector ID	Check Type	Alpha CPM	Alpha Mean	Alpha +/- limit	Alpha Deviation	Alpha Flag	Beta CPM	Beta Mean	Beta +/- limit	Beta Deviation	Beta Flag
5:22 PM	**Efficiency**										
	Background	0.165	0.074	0.023	0.092	**FAIL**	0.445	0.379	0.047	0.066	**Pass**
	Crosstalk										
7:12 PM	**Efficiency**						33933.90	33564.38	1006.93	369.52	**Pass**
	Background										
	Crosstalk						22.387	16.400	3.440	5.987	**Pass**
7:16 PM	**Efficiency**	9920.07	10109.55	303.29	-189.48	**Pass**					
	Background										
	Crosstalk	3334.500	3394.400	50.504	-59.900	**Pass**					
Detector 9											
5:22 PM	**Efficiency**										
	Background	0.180	0.124	0.039	0.056	**Pass**	0.490	0.391	0.066	0.099	**Pass**
	Crosstalk										
7:12 PM	**Efficiency**						33691.98	33894.25	1016.83	-202.27	**Pass**
	Background										
	Crosstalk						22.387	14.000	4.085	8.387	**WARNING**
7:16 PM	**Efficiency**	9876.13	10270.92	308.13	-394.79	**FAIL**					
	Background										
	Crosstalk	3227.000	3336.480	71.578	-109.480	**Pass**					
Detector 10											
5:22 PM	**Efficiency**										
	Background	0.190	0.101	0.029	0.089	**FAIL**	0.455	0.449	0.071	0.006	**Pass**
	Crosstalk										
7:12 PM	**Efficiency**						23385.47	23268.15	698.04	117.32	**Pass**
	Background										
	Crosstalk						7.632	5.525	1.626	2.107	**Pass**
7:16 PM	**Efficiency**	9491.49	9314.42	279.43	177.07	**Pass**					
	Background										
	Crosstalk	5190.500	5412.260	206.903	-221.760	**Pass**					

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Sunday, November 23, 2014

Instrument: Orange

Detector ID	Check Type	Alpha CPM	Alpha Mean	Alpha +/- limit	Alpha Deviation	Alpha Flag	Beta CPM	Beta Mean	Beta +/- limit	Beta Deviation	Beta Flag
Detector 11											
5:22 PM	**Efficiency**										
	Background	0.145	0.110	0.029	0.036	**Pass**	0.580	0.529	0.073	0.051	**Pass**
	Crosstalk										
7:12 PM	**Efficiency**						30708.21	29987.20	899.62	721.01	**Pass**
	Background										
	Crosstalk						17.808	15.700	2.687	2.108	**Pass**
7:16 PM	**Efficiency**	10823.23	10755.42	322.66	67.81	**Pass**					
	Background										
	Crosstalk	3303.000	3246.680	84.085	56.320	**Pass**					
Detector 12											
5:22 PM	**Efficiency**										
	Background	0.155	0.119	0.030	0.036	**Pass**	0.615	0.572	0.072	0.043	**Pass**
	Crosstalk										
7:12 PM	**Efficiency**						28363.81	25927.73	777.83	2436.09	**FAIL**
	Background										
	Crosstalk						20.860	12.950	1.629	7.910	**DOEF**
7:16 PM	**Efficiency**	10653.41	11039.74	331.19	-386.33	**FAIL**					
	Background										
	Crosstalk	3463.000	3628.500	68.433	-165.500	**WARNING**					
Detector 13											
5:22 PM	**Efficiency**										
	Background	0.205	0.158	0.041	0.047	**Pass**	0.565	0.525	0.058	0.040	**Pass**
	Crosstalk										
7:12 PM	**Efficiency**						21942.57	22266.53	668.00	-323.96	**Pass**
	Background										
	Crosstalk						21.878	14.975	3.432	6.903	**WARNING**

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Instrument: Orange

Detector ID	Check Type	Alpha CPM	Alpha Mean	Alpha +/- limit	Alpha Deviation	Alpha Flag	Beta CPM	Beta Mean	Beta +/- limit	Beta Deviation	Beta Flag
7:16 PM	**Efficiency**	10992.48	11233.00	336.99	-240.52	**Pass**					
	Background										
	Crosstalk	3510.000	3521.820	75.777	-11.820	**Pass**					
Detector 14											
7:12 PM	**Efficiency**						0.00	29008.58	870.26	-29008.58	**FAIL**
	Background										
	Crosstalk						0.000	36.750	9.105	-36.750	**DOEF**
7:16 PM	**Efficiency**	0.00	11064.70	331.94	-11064.70	**FAIL**					
	Background										
	Crosstalk	32.000	3646.460	71.414	-3614.460	**DOEF**					
Detector 15											
5:22 PM	**Efficiency**										
	Background	0.275	0.148	0.030	0.127	**FAIL**	0.510	0.492	0.085	0.018	**Pass**
	Crosstalk										
7:13 PM	**Efficiency**						27587.99	27467.78	824.03	120.21	**Pass**
	Background										
	Crosstalk						39.177	21.400	5.218	17.777	**DOEF**
7:16 PM	**Efficiency**	11818.41	11797.00	353.91	21.41	**Pass**					
	Background										
	Crosstalk	3644.000	3542.000	85.963	102.000	**Pass**					
Detector 16											
5:22 PM	**Efficiency**										
	Background	0.155	0.123	0.033	0.033	**Pass**	0.600	0.498	0.063	0.102	**Pass**
	Crosstalk										
7:19 PM	**Efficiency**	9885.05	10041.75	301.25	-156.70	**Pass**					
	Background										
	Crosstalk	3170.000	3273.800	38.183	-103.800	**WARNING**					

TestAmerica
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Gas Proportional Counter Daily Quality Control Checks

Sunday, November 23, 2014

Instrument: Orange

Detector ID	Check Type	Alpha CPM	Alpha Mean	Alpha +/- limit	Alpha Deviation	Alpha Flag	Beta CPM	Beta Mean	Beta +/- limit	Beta Deviation	Beta Flag
7:23 PM	**Efficiency**						33479.16	33491.33	1004.74	-12.16	**Pass**
	Background										
	Crosstalk						53.423	32.800	8.069	20.623	**WARNING**
Detector 17											
5:22 PM	**Efficiency**										
	Background	0.160	0.146	0.043	0.014	**Pass**	0.575	0.433	0.078	0.142	**Pass**
	Crosstalk										
7:19 PM	**Efficiency**	9768.95	10056.48	301.69	-287.53	**Pass**					
	Background										
	Crosstalk	3274.000	3425.740	60.289	-151.740	**WARNING**					
7:23 PM	**Efficiency**						33573.04	33457.18	1003.72	115.86	**Pass**
	Background										
	Crosstalk						21.878	13.975	2.967	7.903	**WARNING**
Detector 18											
5:22 PM	**Efficiency**										
	Background	0.110	0.107	0.025	0.003	**Pass**	0.465	0.402	0.044	0.063	**Pass**
	Crosstalk										
7:19 PM	**Efficiency**	10821.71	11053.86	331.62	-232.15	**Pass**					
	Background										
	Crosstalk	3535.000	3611.520	52.801	-76.520	**Pass**					
7:23 PM	**Efficiency**						23179.14	23209.68	696.29	-30.53	**Pass**
	Background										
	Crosstalk						27.984	16.100	4.093	11.884	**WARNING**
Detector 19											
5:22 PM	**Efficiency**										
	Background	0.095	0.089	0.033	0.006	**Pass**	0.470	0.374	0.061	0.096	**Pass**
	Crosstalk										

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Gas Proportional Counter Daily Quality Control Checks

Sunday, November 23, 2014

Instrument: Orange

Detector ID	Check Type	Alpha CPM	Alpha Mean	Alpha +/- limit	Alpha Deviation	Alpha Flag	Beta CPM	Beta Mean	Beta +/- limit	Beta Deviation	Beta Flag
7:19 PM	**Efficiency**	10930.32	11009.96	330.30	-79.64	**Pass**					
	Background										
	Crosstalk	3724.500	3716.300	50.984	8.200	**Pass**					
7:23 PM	**Efficiency**						30983.76	30982.63	929.48	1.14	**Pass**
	Background										
	Crosstalk						24.422	16.650	4.107	7.772	**Pass**
Detector 20											
5:22 PM	**Efficiency**										
	Background	0.130	0.084	0.024	0.046	**Pass**	0.435	0.354	0.051	0.082	**Pass**
	Crosstalk										
7:19 PM	**Efficiency**	10551.26	10934.68	328.04	-383.42	**FAIL**					
	Background										
	Crosstalk	3491.500	3574.300	107.105	-82.800	**Pass**					
7:23 PM	**Efficiency**						25804.18	25820.98	774.63	-16.79	**Pass**
	Background										
	Crosstalk						22.896	20.300	5.444	2.596	**Pass**
Detector 21											
5:22 PM	**Efficiency**										
	Background	0.150	0.088	0.028	0.063	**Pass**	0.260	0.312	0.035	-0.052	**Pass**
	Crosstalk										
7:19 PM	**Efficiency**	10971.49	11170.12	335.10	-198.63	**Pass**					
	Background										
	Crosstalk	3495.000	3672.660	78.069	-177.660	**WARNING**					
7:23 PM	**Efficiency**						21896.59	22199.20	665.98	-302.61	**Pass**
	Background										
	Crosstalk						29.510	13.000	2.763	16.510	**DOEF**
Detector 22											

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Gas Proportional Counter Daily Quality Control Checks

Sunday, November 23, 2014

Instrument: ***Orange***

Detector ID	Check Type	Alpha CPM	Alpha Mean	Alpha +/- limit	Alpha Deviation	Alpha Flag	Beta CPM	Beta Mean	Beta +/- limit	Beta Deviation	Beta Flag
5:22 PM	**Efficiency**										
	Background	0.140	0.081	0.017	0.060	**FAIL**	0.425	0.388	0.053	0.037	**Pass**
	Crosstalk										
7:19 PM	**Efficiency**	10706.04	10918.70	327.56	-212.66	**Pass**					
	Background										
	Crosstalk	3553.500	3612.240	230.452	-58.740	**Pass**					
7:24 PM	**Efficiency**						29095.82	29331.13	879.93	-235.30	**Pass**
	Background										
	Crosstalk						16.281	13.075	3.867	3.206	**Pass**
Detector 23											
5:22 PM	**Efficiency**										
	Background	0.135	0.098	0.039	0.037	**Pass**	0.460	0.441	0.090	0.019	**Pass**
	Crosstalk										
7:19 PM	**Efficiency**	11558.60	11544.58	346.34	14.03	**Pass**					
	Background										
	Crosstalk	3672.500	3809.981	484.264	-137.481	**Pass**					
7:24 PM	**Efficiency**						27298.49	27644.68	829.34	-346.18	**Pass**
	Background										
	Crosstalk						15.264	13.125	3.128	2.139	**Pass**

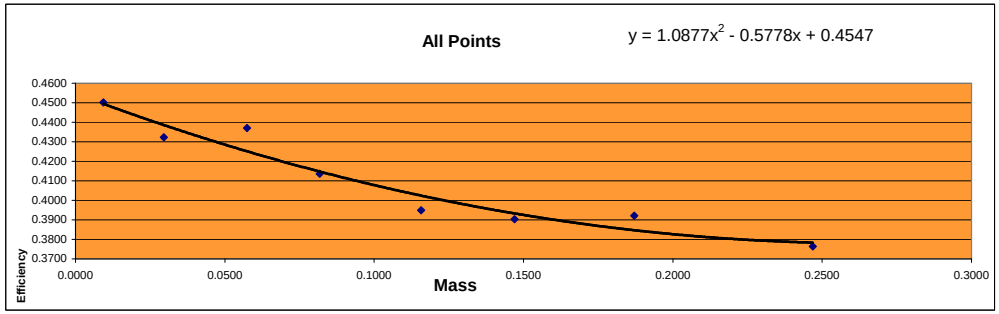
Alpha Beta Calibrations

Curve is for Gross Beta
Strontium 90
and
Total Strontium

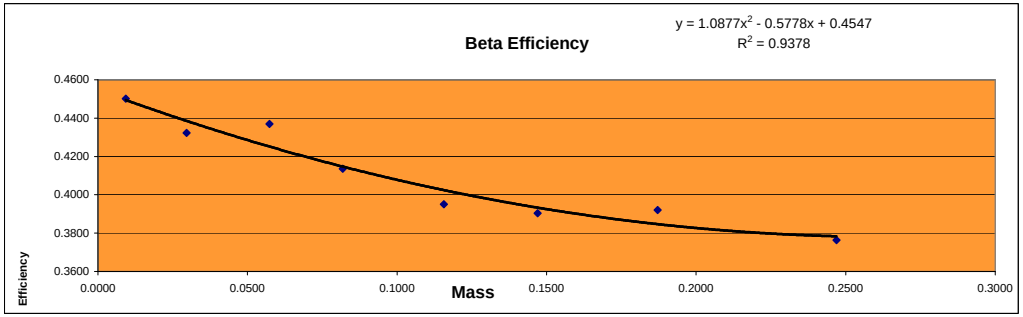
Orange 4

Detector ID	Std ID	Count Date	Sample Wt	Count Time	Beta Counts	DPM 41588.469 CPM	Sr-90 Eff	Standard Aliquot
4	B1	1/23/2013 15:18	0.0093	5	93592	18718.400	0.4501	1mL
4	B2	1/23/2013 15:09	0.0296	5	89877	17975.400	0.4322	1mL
4	B3	1/23/2013 15:00	0.0574	5	90869	18173.800	0.4370	1mL
4	B4	1/23/2013 14:53	0.0818	5	86007	17201.400	0.4136	1mL
4	B5	1/23/2013 14:45	0.1157	5	82135	16427.000	0.3950	1mL
4	B6	1/23/2013 15:46	0.1470	5	81161	16232.200	0.3903	1mL
4	B7	1/23/2013 15:37	0.1871	5	81527	16305.400	0.3921	1mL
4	B8	1/23/2013 15:27	0.2469	5	78270	15654.000	0.3764	1mL

Mass	Measured Efficiency	Theoretical Efficiency	Percent Δ Efficiency
0.0093	0.4501	0.4494	0.15%
0.0296	0.4322	0.4386	-1.44%
0.0574	0.4370	0.4251	2.79%
0.0818	0.4136	0.4147	-0.27%
0.1157	0.3950	0.4024	-1.84%
0.1470	0.3903	0.3933	-0.75%
0.1871	0.3921	0.3847	1.92%
0.2469	0.3764	0.3783	-0.51%



Mass	Efficiency
0.0093	0.4501
0.0296	0.4322
0.0574	0.4370
0.0818	0.4136
0.1157	0.3950
0.1470	0.3903
0.1871	0.3921
0.2469	0.3764



Standard ID
Strontium 90
Sr-90_00004 #6322
Cert# 80573-334 Ref. date 9/172009

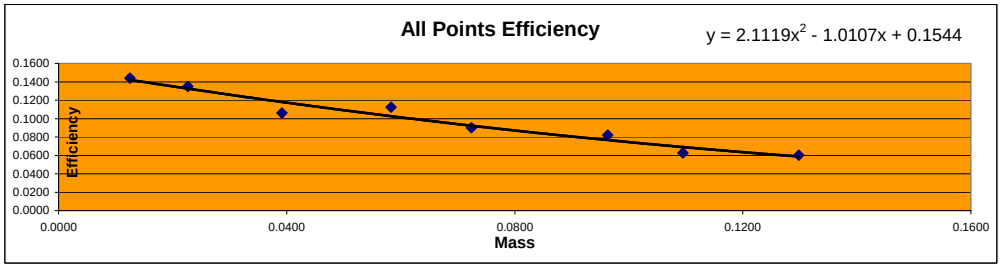
Initial Activity:	22560	dpm/mL
Reference Date:	9/17/2009	
Count Date:	1/23/2013	
Elapsed Time:	1224.000	days
Half Life:	10409.625	days
Exponential Term:	0.921730256	
Corrected Activity:	20794.23458	dpm/mL
Decay Activity (Sr/Y-90)	41588.46916	dpm

Curve is for Gross Alpha

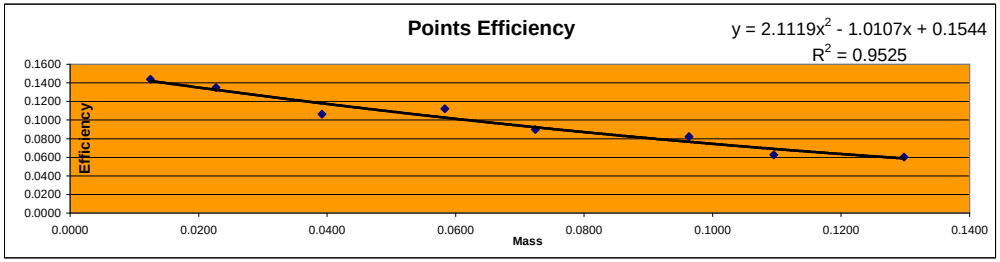
Orange 4

Detector ID	Sample ID	Count Date	Mass	Count Time	Alpha Counts	Net CPM	DPM	Th-230 Efficiency	Standard Aliquot
4	A1	7/18/2013 19:58	0.0125	40	13668	341.700	2374.5	0.1439	1mL
4	A2	7/18/2013 18:30	0.0227	40	12813	320.325	2374.5	0.1349	1mL
4	A3	7/18/2013 17:29	0.0392	40	10088	252.200	2374.5	0.1062	1mL
4	A4	7/23/2013 16:41	0.0583	50	13318	266.360	2374.5	0.1122	1mL
4	A5	7/18/2013 15:43	0.0724	40	17085	427.125	4749.0	0.0899	2mL
4	A6	7/18/2013 22:47	0.0963	40	15616	390.400	4749.0	0.0822	2mL
4	A7	7/18/2013 21:52	0.1095	40	11874	296.850	4749.0	0.0625	2mL
4	A8	7/18/2013 21:01	0.1298	40	11426	285.650	4749.0	0.0601	2mL

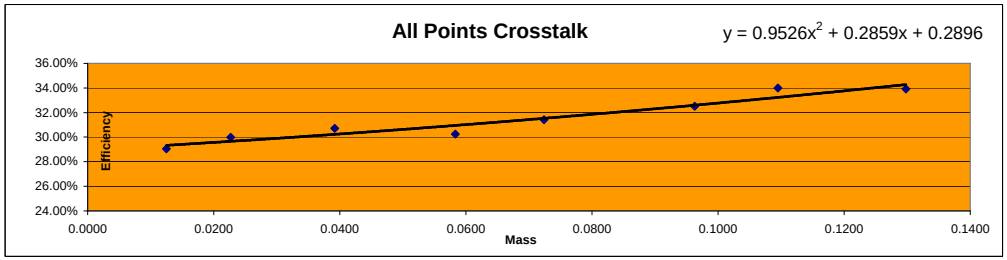
Mass	Measured Efficiency	Theoretical Efficiency	Percent Δ Efficiency
0.0125	0.1439	0.1421	1.27%
0.0227	0.1349	0.1325	1.78%
0.0392	0.1062	0.1180	-10.01%
0.0583	0.1122	0.1027	9.28%
0.0724	0.0899	0.0923	-2.55%
0.0963	0.0822	0.0766	7.25%
0.1095	0.0625	0.0690	-9.46%
0.1298	0.0601	0.0588	2.33%



Mass	Efficiency
0.0125	0.1439
0.0227	0.1349
0.0392	0.1062
0.0583	0.1122
0.0724	0.0899
0.0963	0.0822
0.1095	0.0625
0.1298	0.0601



Detector ID	Sample ID	Mass	Count Time	Alpha Counts	Beta Counts	Alpha CPM	Beta CPM	% α into β	
4	A1	0.0125	40.00	13668	5598	341.70	139.95	29.06%	Min
4	A2	0.0227	40.00	12813	5488	320.33	137.20	29.99%	29.06%
4	A3	0.0392	40.00	10088	4470	252.20	111.75	30.70%	
4	A4	0.0583	40.00	13318	5772	332.95	144.30	30.24%	Max
4	A5	0.0724	40.00	17085	7826	427.13	195.65	31.42%	34.00%
4	A6	0.0963	40.00	15616	7519	390.40	187.98	32.50%	
4	A7	0.1095	40.00	11874	6117	296.85	152.93	34.00%	Mean
4	A8	0.1298	40.00	11426	5864	285.65	146.60	33.92%	31.48%



Standard ID
Thorium-230
Th-230_00016 #51465
Cert # 92523 Ref. date 11/29/2012
Activity 2374.5 dpm/mL

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - A

Addr: 4

Sample ID ICABT-6322;B5 **Repeat** 39

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/23/2013 2:45:11 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 1/23/2013 2:50:20 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.049	0	0.000	-0.049
sd	0.000			0.007	0.000	0.000	0.140
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.380	82,135	16,427.000	16,426.620
sd	0.000			0.019	286.592	57.318	57.318

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - A

Addr: 4

Sample ID ICABT-6322;B4 **Repeat** 41

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/23/2013 2:53:19 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 1/23/2013 2:58:29 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.049	0	0.000	-0.049
sd	0.000			0.007	0.000	0.000	0.140
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.380	86,007	17,201.400	17,201.020
sd	0.000			0.019	293.270	58.654	58.654

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - A

Addr: 4

Sample ID ICABT-6322;B3 **Repeat** 42

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/23/2013 3:00:53 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 1/23/2013 3:06:03 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.049	3	0.600	0.551
sd	0.000			0.007	1.732	0.346	0.346
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.380	90,869	18,173.800	18,173.420
sd	0.000			0.019	301.445	60.289	60.289

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - A

Addr: 4

Sample ID ICABT-6322;B2 **Repeat** 43

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 1/23/2013 3:09:08 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 1/23/2013 3:14:17 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.049	1	0.200	0.151
sd	0.000			0.007	1.000	0.200	0.200
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.380	89,877	17,975.400	17,975.020
sd	0.000			0.019	299.795	59.959	59.959

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - A

Addr: 4

Sample ID ICABT-6322;B1 **Repeat** 44

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 1/23/2013 3:18:54 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 1/23/2013 3:24:03 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.049	3	0.600	0.551
sd	0.000			0.007	1.732	0.346	0.346
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.380	93,592	18,718.400	18,718.020
sd	0.000			0.019	305.928	61.186	61.186

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - A

Addr: 4

Sample ID ICABT-6322;B8 **Repeat** 44

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/23/2013 3:27:10 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 1/23/2013 3:32:17 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.049	1	0.200	0.151
sd	0.000			0.007	1.000	0.200	0.200
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.380	78,270	15,654.000	15,653.620
sd	0.000			0.019	279.768	55.954	55.954

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - A

Addr: 4

Sample ID ICABT-6322;B7

Repeat 45

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 1/23/2013 3:37:27 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 1/23/2013 3:42:36 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.049	1	0.200	0.151
sd	0.000			0.007	1.000	0.200	0.200
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.380	81,527	16,305.400	16,305.020
sd	0.000			0.019	285.529	57.106	57.106

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - A

Addr: 4

Sample ID ICABT-6322;B6

Repeat 46

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 1/23/2013 3:46:21 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 1/23/2013 3:51:30 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.049	1	0.200	0.151
sd	0.000			0.007	1.000	0.200	0.200
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.380	81,161	16,232.200	16,231.820
sd	0.000			0.019	284.888	56.978	56.978

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - A

Addr: 4

Sample ID ICABT-51465;A5 **Repeat** 9

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/18/2013 3:43:52 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 7/18/2013 4:23:58 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 40.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	17,085	427.125	427.057
sd	0.000			0.008	130.710	3.268	3.268
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.386	7,826	195.650	195.264
sd	0.000			0.020	88.465	2.212	2.212

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - A

Addr: 4

Sample ID ICABT-51465;A3 **Repeat** 11

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 7/18/2013 5:29:23 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 7/18/2013 6:09:28 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 40.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	10,088	252.200	252.132
sd	0.000			0.008	100.439	2.511	2.511
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.386	4,470	111.750	111.364
sd	0.000			0.020	66.858	1.671	1.672

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - A

Addr: 4

Sample ID ICABT-51465;A2 **Repeat** 12

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 7/18/2013 6:30:54 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 7/18/2013 7:10:59 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 40.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	12,813	320.325	320.257
sd	0.000			0.008	113.195	2.830	2.830
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.386	5,488	137.200	136.814
sd	0.000			0.020	74.081	1.852	1.852

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - A

Addr: 4

Sample ID ICABT-51465;A1 **Repeat** 13

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 7/18/2013 7:58:42 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 7/18/2013 8:38:46 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 40.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	13,668	341.700	341.632
sd	0.000			0.008	116.910	2.923	2.923
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.386	5,598	139.950	139.564
sd	0.000			0.020	74.820	1.870	1.871

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - A

Addr: 4

Sample ID ICABT-51465;A8 **Repeat** 14

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 7/18/2013 9:01:01 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 7/18/2013 9:41:05 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 40.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	11,426	285.650	285.582
sd	0.000			0.008	106.892	2.672	2.672
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.386	5,864	146.600	146.214
sd	0.000			0.020	76.577	1.914	1.915

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - A

Addr: 4

Sample ID ICABT-51465;A7 **Repeat** 15

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/18/2013 9:52:28 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 7/18/2013 10:32:33 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 40.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	11,874	296.850	296.782
sd	0.000			0.008	108.968	2.724	2.724
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.386	6,117	152.925	152.539
sd	0.000			0.020	78.211	1.955	1.955

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - A

Addr: 4

Sample ID ICABT-51465;A6

Repeat 16

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/18/2013 10:47:01 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 7/18/2013 11:27:07 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 40.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	15,616	390.400	390.332
sd	0.000			0.008	124.964	3.124	3.124
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.386	7,519	187.975	187.589
sd	0.000			0.020	86.712	2.168	2.168

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - A

Addr: 4

Sample ID ICABT-51465;A4 **Repeat** 18

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 7/23/2013 4:41:18 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 7/23/2013 5:31:23 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 50.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	13,318	266.360	266.292
sd	0.000			0.008	115.404	2.308	2.308
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.386	5,772	115.440	115.054
sd	0.000			0.020	75.974	1.519	1.520

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

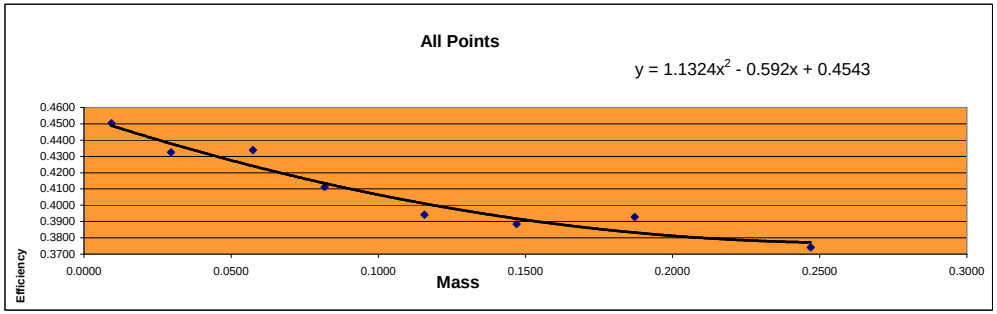
*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Curve is for Gross Beta
Strontium 90
and
Total Strontium

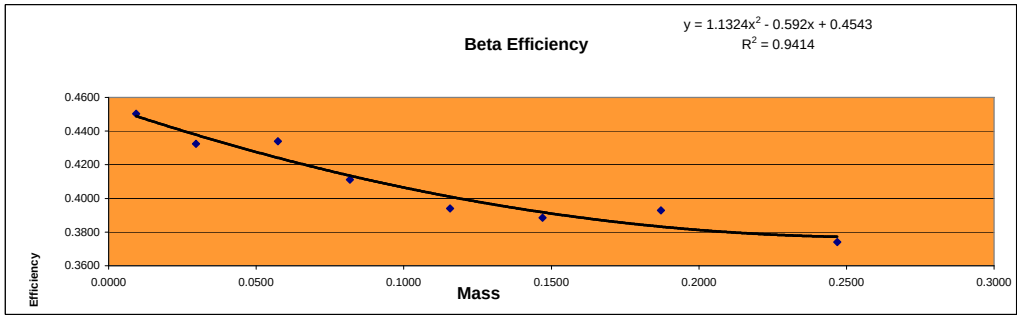
Orange 6

Detector ID	Std ID	Count Date	Sample Wt	Count Time	Beta Counts	DPM 41588.469 CPM	Sr-90 Eff	Standard Aliquot
6	B1	1/23/2013 15:37	0.0093	5	93641	18728.200	0.4503	1mL
6	B2	1/23/2013 15:26	0.0296	5	89937	17987.400	0.4325	1mL
6	B3	1/23/2013 15:19	0.0574	5	90226	18045.200	0.4339	1mL
6	B4	1/23/2013 15:09	0.0818	5	85509	17101.800	0.4112	1mL
6	B5	1/23/2013 15:01	0.1157	5	81949	16389.800	0.3941	1mL
6	B6	1/23/2013 14:53	0.1470	5	80794	16158.800	0.3885	1mL
6	B7	1/23/2013 14:45	0.1871	5	81699	16339.800	0.3929	1mL
6	B8	1/23/2013 15:46	0.2469	5	77798	15559.600	0.3741	1mL

Mass	Measured Efficiency	Theoretical Efficiency	Percent Δ Efficiency
0.0093	0.4503	0.4489	0.32%
0.0296	0.4325	0.4378	-1.20%
0.0574	0.4339	0.4241	2.32%
0.0818	0.4112	0.4135	-0.54%
0.1157	0.3941	0.4010	-1.71%
0.1470	0.3885	0.3917	-0.82%
0.1871	0.3929	0.3832	2.54%
0.2469	0.3741	0.3772	-0.80%



Mass	Efficiency
0.0093	0.4503
0.0296	0.4325
0.0574	0.4339
0.0818	0.4112
0.1157	0.3941
0.1470	0.3885
0.1871	0.3929
0.2469	0.3741



Standard ID
Strontium 90
Sr-90_00004 #6322
Cert# 80573-334 Ref. date 9/172009

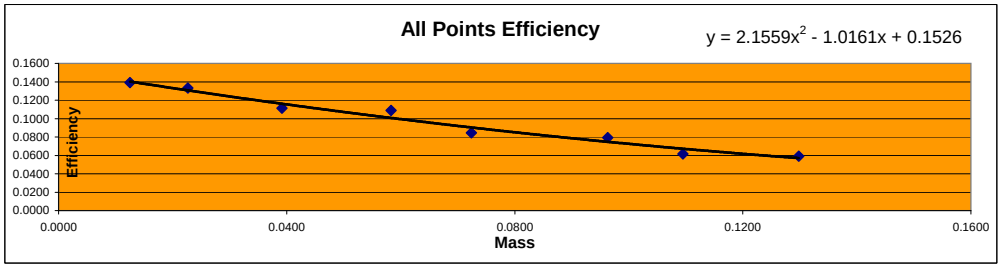
Initial Activity:	22560 dpm/mL
Reference Date:	9/17/2009
Count Date:	1/23/2013
Elapsed Time:	1224.000 days
Half Life:	10409.625 days
Exponential Term:	0.921730256
Corrected Activity:	20794.23458 dpm/mL
Decay Activity (Sr/Y-90)	41588.46916 dpm

Curve is for Gross Alpha

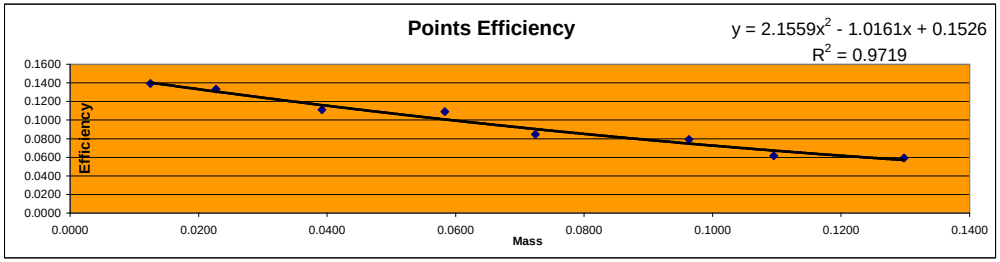
Orange 6

Detector ID	Sample ID	Count Date	Mass	Count Time	Alpha Counts	Net CPM	DPM	Th-230 Efficiency	Standard Aliquot
6	A1	7/18/2013 21:52	0.0125	40	13222	330.550	2374.5	0.1392	1mL
6	A2	7/18/2013 21:01	0.0227	40	12646	316.150	2374.5	0.1331	1mL
6	A3	7/23/2013 16:41	0.0392	50	13208	264.160	2374.5	0.1112	1mL
6	A4	7/23/2013 18:58	0.0583	50	12933	258.660	2374.5	0.1089	1mL
6	A5	7/18/2013 17:29	0.0724	40	16087	402.175	4749.0	0.0847	2mL
6	A6	7/18/2013 16:37	0.0963	40	15054	376.350	4749.0	0.0792	2mL
6	A7	7/18/2013 15:44	0.1095	40	11713	292.825	4749.0	0.0617	2mL
6	A8	7/18/2013 22:47	0.1298	40	11212	280.300	4749.0	0.0590	2mL

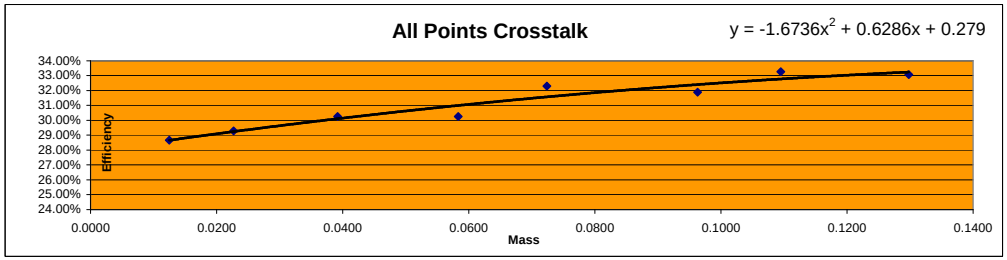
Mass	Measured Efficiency	Theoretical Efficiency	Percent Δ Efficiency
0.0125	0.1392	0.1402	-0.73%
0.0227	0.1331	0.1306	1.91%
0.0392	0.1112	0.1161	-4.16%
0.0583	0.1089	0.1007	8.19%
0.0724	0.0847	0.0903	-6.25%
0.0963	0.0792	0.0747	6.03%
0.1095	0.0617	0.0672	-8.23%
0.1298	0.0590	0.0570	3.49%



Mass	Efficiency
0.0125	0.1392
0.0227	0.1331
0.0392	0.1112
0.0583	0.1089
0.0724	0.0847
0.0963	0.0792
0.1095	0.0617
0.1298	0.0590



Detector ID	Sample ID	Mass	Count Time	Alpha Counts	Beta Counts	Alpha CPM	Beta CPM	% α into β	
6	A1	0.0125	40.00	13222	5313	330.55	132.83	28.66%	Min
6	A2	0.0227	40.00	12646	5241	316.15	131.03	29.30%	28.66%
6	A3	0.0392	40.00	13208	5728	330.20	143.20	30.25%	
6	A4	0.0583	40.00	12933	5609	323.33	140.23	30.25%	Max
6	A5	0.0724	40.00	16087	7677	402.18	191.93	32.31%	33.28%
6	A6	0.0963	40.00	15054	7051	376.35	176.28	31.90%	
6	A7	0.1095	40.00	11713	5842	292.83	146.05	33.28%	Mean
6	A8	0.1298	40.00	11212	5542	280.30	138.55	33.08%	31.13%



Standard ID
Thorium-230
Th-230_00016 #51465
Cert # 92523 Ref. date 11/29/2012
Activity 2374.5 dpm/mL

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - C

Addr: 6

Sample ID ICABT-6322;B7

Repeat 39

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 1/23/2013 2:45:20 PM

Count Ended 1/23/2013 2:50:29 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 *days*

Decay Factor 1.000

Sample Count Time 5.00 *mins*

Background Count Time 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.073	0	0.000	-0.073
sd	0.000			0.009	0.000	0.000	0.171
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.346	81,699	16,339.800	16,339.454
sd	0.000			0.019	285.830	57.166	57.166

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - C

Addr: 6

Sample ID ICABT-6322;B6

Repeat 40

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 1/23/2013 2:53:29 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 1/23/2013 2:58:38 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.073	1	0.200	0.127
sd	0.000			0.009	1.000	0.200	0.200
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.346	80,794	16,158.800	16,158.454
sd	0.000			0.019	284.243	56.849	56.849

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - C

Addr: 6

Sample ID ICABT-6322;B5 **Repeat** 41

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 ***l*** **sd** 0 ***l***

Residual Wt 0 ***mg*** **sd** 0 ***mg***

Count Began 1/23/2013 3:01:02 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 1/23/2013 3:06:12 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.073	2	0.400	0.327
sd	0.000			0.009	1.414	0.283	0.283
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.346	81,949	16,389.800	16,389.454
sd	0.000			0.019	286.267	57.253	57.253

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - C

Addr: 6

Sample ID ICABT-6322;B4 **Repeat** 43

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 1/23/2013 3:09:16 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 1/23/2013 3:14:26 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.073	4	0.800	0.727
sd	0.000			0.009	2.000	0.400	0.400
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.346	85,509	17,101.800	17,101.454
sd	0.000			0.019	292.419	58.484	58.484

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - C

Addr: 6

Sample ID ICABT-6322;B3

Repeat 44

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/23/2013 3:19:05 PM

Count Ended 1/23/2013 3:24:15 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 5.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.073	2	0.400	0.327
sd	0.000			0.009	1.414	0.283	0.283
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.346	90,226	18,045.200	18,044.854
sd	0.000			0.019	300.376	60.075	60.075

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - C

Addr: 6

Sample ID ICABT-6322;B2

Repeat 45

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 1/23/2013 3:26:42 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 1/23/2013 3:31:52 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.073	1	0.200	0.127
sd	0.000			0.009	1.000	0.200	0.200
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.346	89,937	17,987.400	17,987.054
sd	0.000			0.019	299.895	59.979	59.979

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - C

Addr: 6

Sample ID ICABT-6322;B1

Repeat 46

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 1/23/2013 3:37:38 PM

Count Ended 1/23/2013 3:42:48 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 *days*

Decay Factor 1.000

Sample Count Time 5.00 *mins*

Background Count Time 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.073	0	0.000	-0.073
sd	0.000			0.009	0.000	0.000	0.171
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.346	93,641	18,728.200	18,727.854
sd	0.000			0.019	306.008	61.202	61.202

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - C

Addr: 6

Sample ID ICABT-6322;B8

Repeat 46

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 1/23/2013 3:46:31 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 1/23/2013 3:51:39 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.073	1	0.200	0.127
sd	0.000			0.009	1.000	0.200	0.200
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.346	77,798	15,559.600	15,559.254
sd	0.000			0.019	278.923	55.785	55.785

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - C

Addr: 6

Sample ID ICABT-51465;A7 **Repeat** 9

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 7/18/2013 3:44:02 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 7/18/2013 4:24:07 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 40.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.081	11,713	292.825	292.744
sd	0.000			0.009	108.227	2.706	2.706
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.461	5,842	146.050	145.589
sd	0.000			0.021	76.433	1.911	1.911

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - C

Addr: 6

Sample ID ICABT-51465;A6

Repeat 10

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 7/18/2013 4:37:49 PM

Count Ended 7/18/2013 5:17:54 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 *days*

Decay Factor 1.000

Sample Count Time 40.00 *mins*

Background Count Time 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.081	15,054	376.350	376.269
sd	0.000			0.009	122.695	3.067	3.067
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.461	7,051	176.275	175.814
sd	0.000			0.021	83.970	2.099	2.099

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - C

Addr: 6

Sample ID ICABT-51465;A5 **Repeat** 11

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 7/18/2013 5:29:34 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 7/18/2013 6:09:40 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 40.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.081	16,087	402.175	402.094
sd	0.000			0.009	126.835	3.171	3.171
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.461	7,677	191.925	191.464
sd	0.000			0.021	87.618	2.190	2.191

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - C

Addr: 6

Sample ID ICABT-51465;A2

Repeat 14

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/18/2013 9:01:09 PM

Count Ended 7/18/2013 9:41:14 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 40.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.081	12,646	316.150	316.069
sd	0.000			0.009	112.454	2.811	2.811
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.461	5,241	131.025	130.564
sd	0.000			0.021	72.395	1.810	1.810

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - C

Addr: 6

Sample ID ICABT-51465;A1

Repeat 15

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 7/18/2013 9:52:37 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 7/18/2013 10:32:42 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 40.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.081	13,222	330.550	330.469
sd	0.000			0.009	114.987	2.875	2.875
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.461	5,313	132.825	132.364
sd	0.000			0.021	72.890	1.822	1.822

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - C

Addr: 6

Sample ID ICABT-51465;A8

Repeat 16

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 7/18/2013 10:47:10 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 7/18/2013 11:27:14 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 40.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.081	11,212	280.300	280.219
sd	0.000			0.009	105.887	2.647	2.647
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.461	5,542	138.550	138.089
sd	0.000			0.021	74.445	1.861	1.861

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - C

Addr: 6

Sample ID ICABT-51465;A3 **Repeat** 18

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 7/23/2013 4:41:28 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 7/23/2013 5:31:33 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 50.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.081	13,208	264.160	264.079
sd	0.000			0.009	114.926	2.299	2.299
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.461	5,728	114.560	114.099
sd	0.000			0.021	75.684	1.514	1.514

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - C

Addr: 6

Sample ID ICABT-51465;A4

Repeat 20

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 7/23/2013 6:58:19 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 7/23/2013 7:48:24 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 50.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.081	12,933	258.660	258.579
sd	0.000			0.009	113.723	2.274	2.274
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.461	5,609	112.180	111.719
sd	0.000			0.021	74.893	1.498	1.498

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

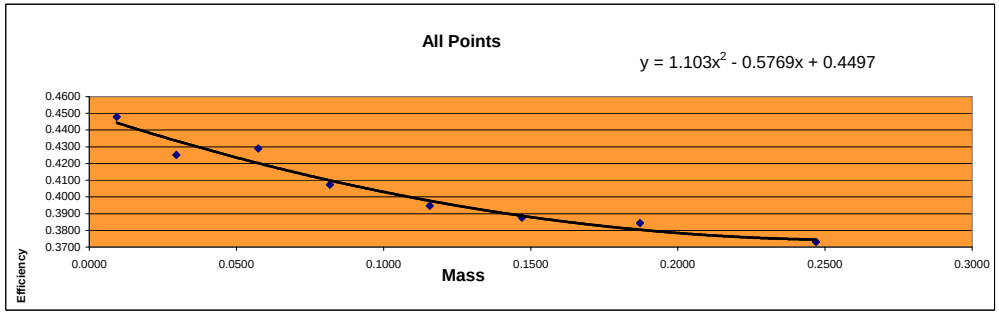
*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Curve is for Gross Beta
Strontium 90
and
Total Strontium

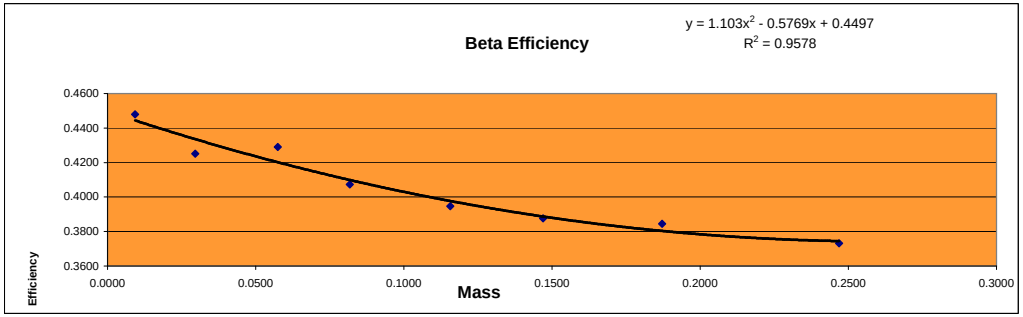
Orange 11

Detector ID	Std ID	Count Date	Sample Wt	Count Time	Beta Counts	DPM 41588.469 CPM	Sr-90 Eff	Standard Aliquot
11	B1	1/23/2013 16:58	0.0093	5	93137	18627.400	0.4479	1mL
11	B2	1/23/2013 16:46	0.0296	5	88398	17679.600	0.4251	1mL
11	B3	1/23/2013 14:36	0.0574	5	89220	17844.000	0.4291	1mL
11	B4	1/23/2013 14:27	0.0818	5	84701	16940.200	0.4073	1mL
11	B5	1/23/2013 17:27	0.1157	5	82088	16417.600	0.3948	1mL
11	B6	1/23/2013 17:19	0.1470	5	80590	16118.000	0.3876	1mL
11	B7	1/23/2013 17:12	0.1871	5	79937	15987.400	0.3844	1mL
11	B8	1/23/2013 17:05	0.2469	5	77581	15516.200	0.3731	1mL

Mass	Measured Efficiency	Theoretical Efficiency	Percent Δ Efficiency
0.0093	0.4479	0.4444	0.78%
0.0296	0.4251	0.4336	-1.96%
0.0574	0.4291	0.4202	2.10%
0.0818	0.4073	0.4099	-0.62%
0.1157	0.3948	0.3977	-0.74%
0.1470	0.3876	0.3887	-0.30%
0.1871	0.3844	0.3804	1.06%
0.2469	0.3731	0.3745	-0.38%



Mass	Efficiency
0.0093	0.4479
0.0296	0.4251
0.0574	0.4291
0.0818	0.4073
0.1157	0.3948
0.1470	0.3876
0.1871	0.3844
0.2469	0.3731



Standard ID
Strontium 90
Sr-90_00004 #6322
Cert# 80573-334 Ref. date 9/172009

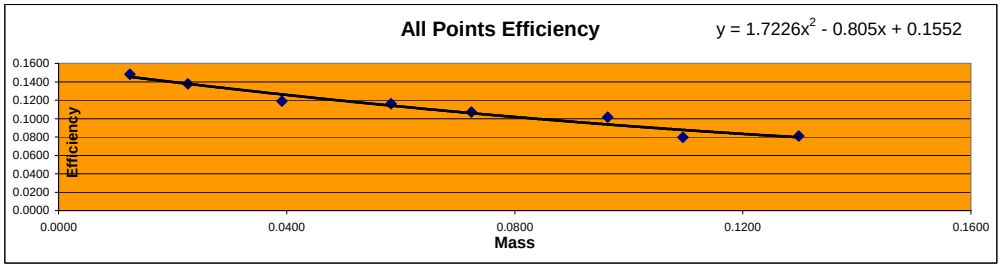
Initial Activity:	22560 dpm/mL
Reference Date:	9/17/2009
Count Date:	1/23/2013
Elapsed Time:	1224.000 days
Half Life:	10409.625 days
Exponential Term:	0.921730256
Corrected Activity:	20794.23458 dpm/mL
Decay Activity (Sr/Y-90)	41588.46916 dpm

Curve is for Gross Alpha

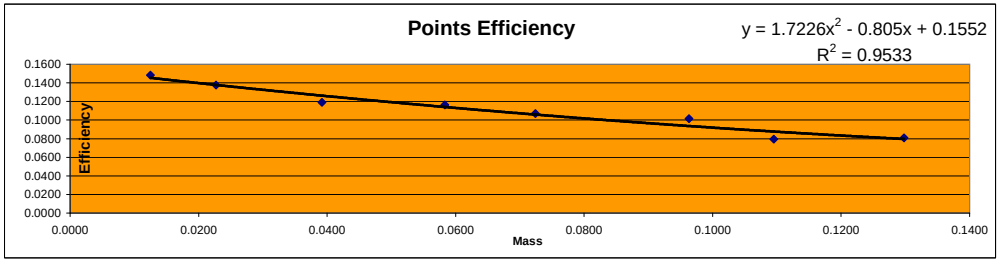
Orange 11

Detector ID	Sample ID	Count Date	Mass	Count Time	Alpha Counts	Net CPM	DPM	Th-230 Efficiency	Standard Aliquot
11	A1	7/24/2013 11:45	0.0125	50	17594	351.880	2374.5	0.1482	1mL
11	A2	7/24/2013 10:45	0.0227	50	16358	327.160	2374.5	0.1378	1mL
11	A3	7/24/2013 9:53	0.0392	50	14139	282.780	2374.5	0.1191	1mL
11	A4	7/24/2013 8:47	0.0583	50	13803	276.060	2374.5	0.1163	1mL
11	A5	7/24/2013 18:32	0.0724	50	25403	508.060	4749.0	0.1070	2mL
11	A6	7/24/2013 17:29	0.0963	50	24130	482.600	4749.0	0.1016	2mL
11	A7	7/24/2013 16:37	0.1095	50	18906	378.120	4749.0	0.0796	2mL
11	A8	7/24/2013 15:14	0.1298	50	19207	384.140	4749.0	0.0809	2mL

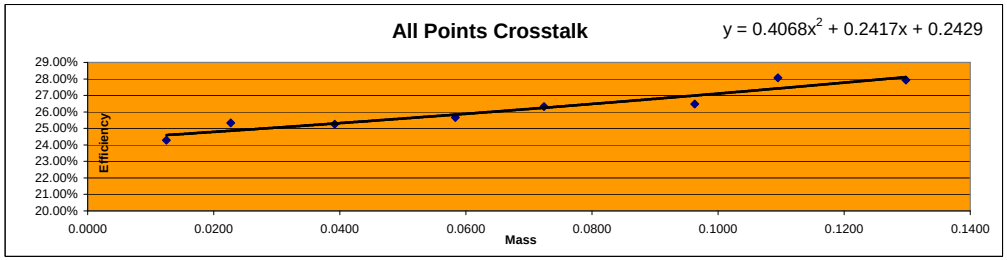
Mass	Measured Efficiency	Theoretical Efficiency	Percent Δ Efficiency
0.0125	0.1482	0.1454	1.92%
0.0227	0.1378	0.1378	-0.02%
0.0392	0.1191	0.1263	-5.70%
0.0583	0.1163	0.1141	1.87%
0.0724	0.1070	0.1059	0.98%
0.0963	0.1016	0.0937	8.51%
0.1095	0.0796	0.0877	-9.22%
0.1298	0.0809	0.0797	1.45%



Mass	Efficiency
0.0125	0.1482
0.0227	0.1378
0.0392	0.1191
0.0583	0.1163
0.0724	0.1070
0.0963	0.1016
0.1095	0.0796
0.1298	0.0809



Detector ID	Sample ID	Mass	Count Time	Alpha Counts	Beta Counts	Alpha CPM	Beta CPM	% α into β	
11	A1	0.0125	40.00	17594	5644	439.85	141.10	24.29%	Min
11	A2	0.0227	40.00	16358	5551	408.95	138.78	25.34%	24.29%
11	A3	0.0392	40.00	14139	4778	353.48	119.45	25.26%	
11	A4	0.0583	40.00	13803	4767	345.08	119.18	25.67%	Max
11	A5	0.0724	40.00	25403	9080	635.08	227.00	26.33%	28.08%
11	A6	0.0963	40.00	24130	8690	603.25	217.25	26.48%	
11	A7	0.1095	40.00	18906	7381	472.65	184.53	28.08%	Mean
11	A8	0.1298	40.00	19207	7443	480.18	186.08	27.93%	26.17%



Standard ID
Thorium-230
Th-230_00016 #51465
Cert # 92523 Ref. date 11/29/2012
Activity 2374.5 dpm/mL

Alpha/Beta Count Results

Sample Activity Report

Orange 8-11 - D

Addr: 11

Sample ID ICABT-6322;B4 **Repeat** 38

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 1/23/2013 2:27:52 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 1/23/2013 2:33:01 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.044	17	3.400	3.356
sd	0.000			0.007	4.123	0.825	0.825
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.487	84,701	16,940.200	16,939.713
sd	0.000			0.022	291.034	58.207	58.207

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 8-11 - D

Addr: 11

Sample ID ICABT-6322;B3

Repeat 39

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 1/23/2013 2:36:49 PM

Count Ended 1/23/2013 2:41:58 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 *days*

Decay Factor 1.000

Sample Count Time 5.00 *mins*

Background Count Time 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.044	22	4.400	4.356
sd	0.000			0.007	4.690	0.938	0.938
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.487	89,220	17,844.000	17,843.513
sd	0.000			0.022	298.697	59.739	59.739

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 8-11 - D

Addr: 11

Sample ID ICABT-6322;B2

Repeat 48

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/23/2013 4:46:56 PM

Count Ended 1/23/2013 4:52:05 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 5.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.044	20	4.000	3.956
sd	0.000			0.007	4.472	0.894	0.894
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.487	88,398	17,679.600	17,679.113
sd	0.000			0.022	297.318	59.464	59.464

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 8-11 - D

Addr: 11

Sample ID ICABT-6322;B1

Repeat 49

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/23/2013 4:58:13 PM

Count Ended 1/23/2013 5:03:23 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 5.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.044	19	3.800	3.756
sd	0.000			0.007	4.359	0.872	0.872
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.487	93,137	18,627.400	18,626.913
sd	0.000			0.022	305.184	61.037	61.037

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 8-11 - D

Addr: 11

Sample ID ICABT-6322;B8

Repeat 49

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 1/23/2013 5:05:57 PM

Count Ended 1/23/2013 5:11:06 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 *days*

Decay Factor 1.000

Sample Count Time 5.00 *mins*

Background Count Time 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.044	16	3.200	3.156
sd	0.000			0.007	4.000	0.800	0.800
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.487	77,581	15,516.200	15,515.713
sd	0.000			0.022	278.534	55.707	55.707

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 8-11 - D

Addr: 11

Sample ID ICABT-6322;B7

Repeat 50

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/23/2013 5:12:45 PM

Count Ended 1/23/2013 5:17:55 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 5.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.044	19	3.800	3.756
sd	0.000			0.007	4.359	0.872	0.872
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.487	79,937	15,987.400	15,986.913
sd	0.000			0.022	282.731	56.546	56.546

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 8-11 - D

Addr: 11

Sample ID ICABT-6322;B6

Repeat 51

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/23/2013 5:19:28 PM

Count Ended 1/23/2013 5:24:37 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 5.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.044	17	3.400	3.356
sd	0.000			0.007	4.123	0.825	0.825
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.487	80,590	16,118.000	16,117.513
sd	0.000			0.022	283.884	56.777	56.777

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 8-11 - D

Addr: 11

Sample ID ICABT-6322;B5

Repeat 52

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 1/23/2013 5:27:59 PM

Count Ended 1/23/2013 5:33:09 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 *days*

Decay Factor 1.000

Sample Count Time 5.00 *mins*

Background Count Time 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.044	21	4.200	4.156
sd	0.000			0.007	4.583	0.917	0.917
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.487	82,088	16,417.600	16,417.113
sd	0.000			0.022	286.510	57.302	57.302

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 8-11 - D

Addr: 11

Sample ID ICABT-51465;A4

Repeat 21

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/24/2013 8:47:08 AM

Count Ended 7/24/2013 9:37:14 AM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 50.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	13,803	276.060	275.992
sd	0.000			0.008	117.486	2.350	2.350
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.497	4,767	95.340	94.843
sd	0.000			0.022	69.043	1.381	1.381

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 8-11 - D

Addr: 11

Sample ID ICABT-51465;A3

Repeat 21

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/24/2013 9:53:29 AM

Collection Date 1 1/1/1900

Half Life 0.00 ***days***

Count Ended 7/24/2013 10:43:35 AM

Collection Date 2 1/1/1900

Decay Factor 1.000

Sample Count Time 50.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	14,139	282.780	282.712
sd	0.000			0.008	118.908	2.378	2.378
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.497	4,778	95.560	95.063
sd	0.000			0.022	69.123	1.382	1.383

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 8-11 - D

Addr: 11

Sample ID ICABT-51465;A2

Repeat 19

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/24/2013 10:45:35 AM

Count Ended 7/24/2013 11:35:40 AM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 50.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	16,358	327.160	327.092
sd	0.000			0.008	127.898	2.558	2.558
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.497	5,551	111.020	110.523
sd	0.000			0.022	74.505	1.490	1.490

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 8-11 - D

Addr: 11

Sample ID ICABT-51465;A1

Repeat 20

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/24/2013 11:45:33 AM

Count Ended 7/24/2013 12:35:38 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 50.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	17,594	351.880	351.812
sd	0.000			0.008	132.642	2.653	2.653
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.497	5,644	112.880	112.383
sd	0.000			0.022	75.127	1.503	1.503

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 8-11 - D

Addr: 11

Sample ID ICABT-51465;A8

Repeat 21

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/24/2013 3:14:28 PM

Count Ended 7/24/2013 4:04:34 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 50.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	19,207	384.140	384.072
sd	0.000			0.008	138.589	2.772	2.772
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.497	7,443	148.860	148.363
sd	0.000			0.022	86.273	1.725	1.726

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 8-11 - D

Addr: 11

Sample ID ICABT-51465;A7

Repeat 22

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/24/2013 4:37:10 PM

Count Ended 7/24/2013 5:27:15 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 50.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	18,906	378.120	378.052
sd	0.000			0.008	137.499	2.750	2.750
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.497	7,381	147.620	147.123
sd	0.000			0.022	85.913	1.718	1.718

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 8-11 - D

Addr: 11

Sample ID ICABT-51465;A6

Repeat 23

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 7/24/2013 5:29:52 PM

Count Ended 7/24/2013 6:19:58 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 *days*

Decay Factor 1.000

Sample Count Time 50.00 *mins*

Background Count Time 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	24,130	482.600	482.532
sd	0.000			0.008	155.338	3.107	3.107
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.497	8,690	173.800	173.303
sd	0.000			0.022	93.220	1.864	1.865

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 8-11 - D

Addr: 11

Sample ID ICABT-51465;A5

Repeat 24

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/24/2013 6:32:00 PM

Count Ended 7/24/2013 7:22:06 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 50.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	25,403	508.060	507.992
sd	0.000			0.008	159.383	3.188	3.188
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.497	9,080	181.600	181.103
sd	0.000			0.022	95.289	1.906	1.906

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

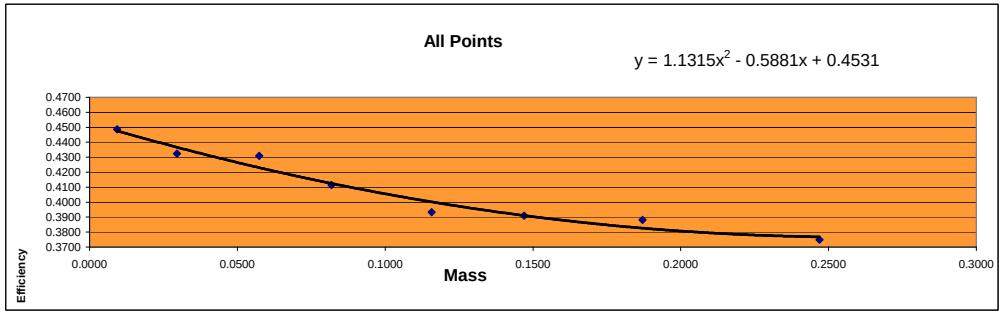
Error = .00 **x sd**

Curve is for Gross Beta
Strontium 90
and
Total Strontium

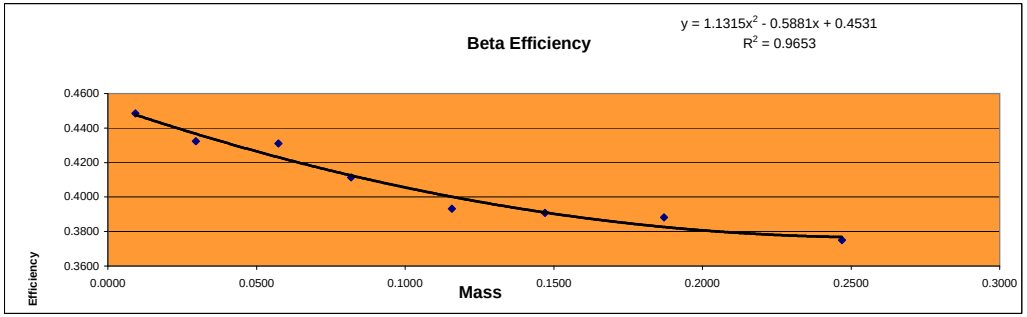
Orange 17

Detector ID	Std ID	Count Date	Sample Wt	Count Time	Beta Counts	DPM 41588.469 CPM	Sr-90 Eff	Standard Aliquot
17	B1	1/23/2013 12:29	0.0093	5	93270	18654.000	0.4485	1mL
17	B2	1/23/2013 12:20	0.0296	5	89902	17980.400	0.4323	1mL
17	B3	1/23/2013 13:14	0.0574	5	89621	17924.200	0.4310	1mL
17	B4	1/23/2013 13:07	0.0818	5	85547	17109.400	0.4114	1mL
17	B5	1/23/2013 13:00	0.1157	5	81773	16354.600	0.3932	1mL
17	B6	1/23/2013 12:53	0.1470	5	81281	16256.200	0.3909	1mL
17	B7	1/23/2013 12:46	0.1871	5	80713	16142.600	0.3882	1mL
17	B8	1/23/2013 12:38	0.2469	5	77978	15595.600	0.3750	1mL

Mass	Measured Efficiency	Theoretical Efficiency	Percent Δ Efficiency
0.0093	0.4485	0.4477	0.18%
0.0296	0.4323	0.4367	-0.99%
0.0574	0.4310	0.4231	1.87%
0.0818	0.4114	0.4126	-0.28%
0.1157	0.3932	0.4002	-1.74%
0.1470	0.3909	0.3911	-0.06%
0.1871	0.3882	0.3827	1.43%
0.2469	0.3750	0.3769	-0.50%



Mass	Efficiency
0.0093	0.4485
0.0296	0.4323
0.0574	0.4310
0.0818	0.4114
0.1157	0.3932
0.1470	0.3909
0.1871	0.3882
0.2469	0.3750



Standard ID
Strontium 90
Sr-90_00004 #6322
Cert# 80573-334 Ref. date 9/172009

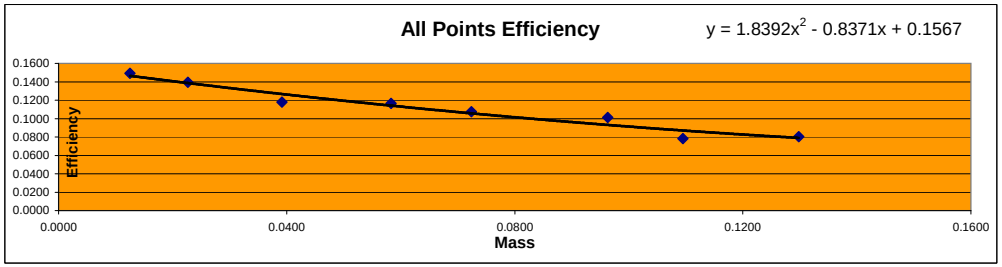
Initial Activity:	22560 dpm/mL
Reference Date:	9/17/2009
Count Date:	1/23/2013
Elapsed Time:	1224.000 days
Half Life:	10409.625 days
Exponential Term:	0.921730256
Corrected Activity:	20794.23458 dpm/mL
Decay Activity (Sr/Y-90)	41588.46916 dpm

Curve is for Gross Alpha

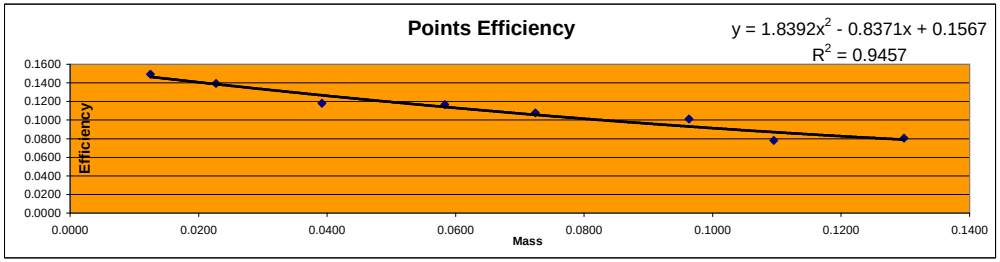
Orange 17

Detector ID	Sample ID	Count Date	Mass	Count Time	Alpha Counts	Net CPM	DPM	Th-230 Efficiency	Standard Aliquot
17	A1	7/24/2013 20:19	0.0125	50	17726	354.520	2374.5	0.1493	1mL
17	A2	7/24/2013 19:26	0.0227	50	16547	330.940	2374.5	0.1394	1mL
17	A3	7/25/2013 9:50	0.0392	50	13994	279.880	2374.5	0.1179	1mL
17	A4	7/25/2013 8:55	0.0583	50	13848	276.960	2374.5	0.1166	1mL
17	A5	7/25/2013 7:05	0.0724	50	25560	511.200	4749.0	0.1076	2mL
17	A6	7/24/2013 23:29	0.0963	50	24044	480.880	4749.0	0.1013	2mL
17	A7	7/24/2013 22:35	0.1095	50	18575	371.500	4749.0	0.0782	2mL
17	A8	7/24/2013 21:31	0.1298	50	19097	381.940	4749.0	0.0804	2mL

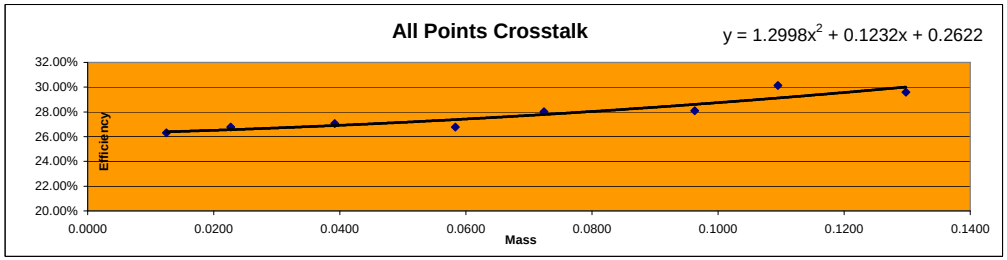
Mass	Measured Efficiency	Theoretical Efficiency	Percent Δ Efficiency
0.0125	0.1493	0.1465	1.90%
0.0227	0.1394	0.1386	0.52%
0.0392	0.1179	0.1267	-6.98%
0.0583	0.1166	0.1141	2.18%
0.0724	0.1076	0.1057	1.81%
0.0963	0.1013	0.0931	8.71%
0.1095	0.0782	0.0871	-10.18%
0.1298	0.0804	0.0790	1.76%



Mass	Efficiency
0.0125	0.1493
0.0227	0.1394
0.0392	0.1179
0.0583	0.1166
0.0724	0.1076
0.0963	0.1013
0.1095	0.0782
0.1298	0.0804



Detector ID	Sample ID	Mass	Count Time	Alpha Counts	Beta Counts	Alpha CPM	Beta CPM	% α into β	
17	A1	0.0125	40.00	17726	6326	443.15	158.15	26.30%	Min
17	A2	0.0227	40.00	16547	6051	413.68	151.28	26.78%	26.30%
17	A3	0.0392	40.00	13994	5193	349.85	129.83	27.07%	
17	A4	0.0583	40.00	13848	5062	346.20	126.55	26.77%	Max
17	A5	0.0724	40.00	25560	9953	639.00	248.83	28.03%	30.13%
17	A6	0.0963	40.00	24044	9400	601.10	235.00	28.11%	
17	A7	0.1095	40.00	18575	8011	464.38	200.28	30.13%	Mean
17	A8	0.1298	40.00	19097	8029	477.43	200.73	29.60%	27.85%



Standard ID
Thorium-230
Th-230_00016 #51465
Cert # 92523 Ref. date 11/29/2012
Activity 2374.5 dpm/mL

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - B

Addr: 17

Sample ID ICABT-6322;B2

Repeat 30

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/23/2013 12:20:13 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 1/23/2013 12:25:27 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.079	16	3.200	3.121
sd	0.000			0.009	4.000	0.800	0.800
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.387	89,902	17,980.400	17,980.013
sd	0.000			0.020	299.837	59.967	59.967

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - B

Addr: 17

Sample ID ICABT-6322;B1 **Repeat** 31

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 1/23/2013 12:29:49 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 1/23/2013 12:35:00 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.079	20	4.000	3.921
sd	0.000			0.009	4.472	0.894	0.894
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.387	93,270	18,654.000	18,653.613
sd	0.000			0.020	305.401	61.080	61.080

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - B

Addr: 17

Sample ID ICABT-6322;B8

Repeat 31

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/23/2013 12:38:12 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 1/23/2013 12:43:20 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.079	12	2.400	2.321
sd	0.000			0.009	3.464	0.693	0.693
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.387	77,978	15,595.600	15,595.213
sd	0.000			0.020	279.245	55.849	55.849

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - B

Addr: 17

Sample ID ICABT-6322;B7

Repeat 32

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/23/2013 12:46:11 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 1/23/2013 12:51:19 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.079	11	2.200	2.121
sd	0.000			0.009	3.317	0.663	0.663
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.387	80,713	16,142.600	16,142.213
sd	0.000			0.020	284.100	56.820	56.820

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - B

Addr: 17

Sample ID ICABT-6322;B6

Repeat 33

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/23/2013 12:53:39 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 1/23/2013 12:58:49 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.079	12	2.400	2.321
sd	0.000			0.009	3.464	0.693	0.693
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.387	81,281	16,256.200	16,255.813
sd	0.000			0.020	285.098	57.020	57.020

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - B

Addr: 17

Sample ID ICABT-6322;B5 **Repeat** 34

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/23/2013 1:00:31 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 1/23/2013 1:05:39 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.079	18	3.600	3.521
sd	0.000			0.009	4.243	0.849	0.849
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.387	81,773	16,354.600	16,354.213
sd	0.000			0.020	285.960	57.192	57.192

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - B

Addr: 17

Sample ID ICABT-6322;B4 **Repeat** 36

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/23/2013 1:07:43 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 1/23/2013 1:12:53 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.079	18	3.600	3.521
sd	0.000			0.009	4.243	0.849	0.849
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.387	85,547	17,109.400	17,109.013
sd	0.000			0.020	292.484	58.497	58.497

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - B

Addr: 17

Sample ID ICABT-6322;B3 **Repeat** 37

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/23/2013 1:14:54 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 1/23/2013 1:20:03 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.079	14	2.800	2.721
sd	0.000			0.009	3.742	0.748	0.748
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.387	89,621	17,924.200	17,923.813
sd	0.000			0.020	299.368	59.874	59.874

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - B

Addr: 17

Sample ID ICABT-51465;A2

Repeat 25

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/24/2013 7:26:53 PM

Count Ended 7/24/2013 8:16:58 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 50.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.100	16,547	330.940	330.840
sd	0.000			0.010	128.635	2.573	2.573
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.347	6,051	121.020	120.673
sd	0.000			0.019	77.788	1.556	1.556

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - B

Addr: 17

Sample ID ICABT-51465;A1 **Repeat** 26

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/24/2013 8:19:49 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 7/24/2013 9:09:55 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 50.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.100	17,726	354.520	354.420
sd	0.000			0.010	133.139	2.663	2.663
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.347	6,326	126.520	126.173
sd	0.000			0.019	79.536	1.591	1.591

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - B

Addr: 17

Sample ID ICABT-51465;A8 **Repeat** 27

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/24/2013 9:31:43 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 7/24/2013 10:21:48 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 50.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.100	19,097	381.940	381.840
sd	0.000			0.010	138.192	2.764	2.764
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.347	8,029	160.580	160.233
sd	0.000			0.019	89.605	1.792	1.792

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - B

Addr: 17

Sample ID ICABT-51465;A7 **Repeat** 28

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/24/2013 10:35:09 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 7/24/2013 11:25:16 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 50.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.100	18,575	371.500	371.400
sd	0.000			0.010	136.290	2.726	2.726
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.347	8,011	160.220	159.873
sd	0.000			0.019	89.504	1.790	1.790

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - B

Addr: 17

Sample ID ICABT-51465;A6 **Repeat** 29

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/24/2013 11:29:37 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 7/25/2013 12:19:44 AM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 50.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.100	24,044	480.880	480.780
sd	0.000			0.010	155.061	3.101	3.101
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.347	9,400	188.000	187.653
sd	0.000			0.019	96.954	1.939	1.939

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - B

Addr: 17

Sample ID ICABT-51465;A5 **Repeat** 30

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/25/2013 7:05:00 AM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 7/25/2013 7:55:07 AM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 50.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.100	25,560	511.200	511.100
sd	0.000			0.010	159.875	3.197	3.198
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.347	9,953	199.060	198.713
sd	0.000			0.019	99.765	1.995	1.995

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - B

Addr: 17

Sample ID ICABT-51465;A4 **Repeat** 36

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/25/2013 8:55:45 AM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 7/25/2013 9:45:51 AM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 50.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.100	13,848	276.960	276.860
sd	0.000			0.010	117.678	2.354	2.354
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.347	5,062	101.240	100.893
sd	0.000			0.019	71.148	1.423	1.423

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - B

Addr: 17

Sample ID ICABT-51465;A3 **Repeat** 35

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/25/2013 9:50:32 AM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 7/25/2013 10:40:38 AM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 50.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.100	13,994	279.880	279.780
sd	0.000			0.010	118.296	2.366	2.366
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.347	5,193	103.860	103.513
sd	0.000			0.019	72.062	1.441	1.441

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

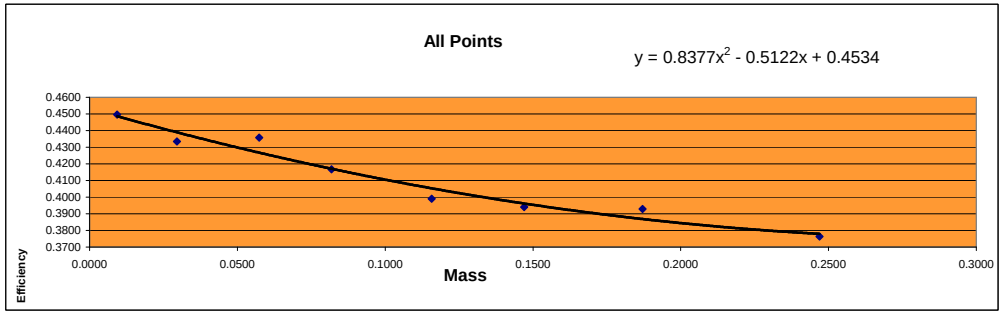
*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Curve is for Gross Beta
Strontium 90
and
Total Strontium

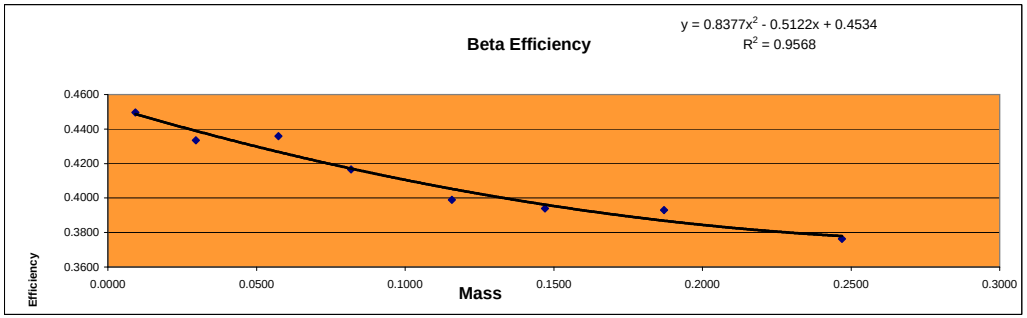
Orange 18

Detector ID	Std ID	Count Date	Sample Wt	Count Time	Beta Counts	DPM 41588.469 CPM	Sr-90 Eff	Standard Aliquot
18	B1	1/23/2013 12:37	0.0093	5	93486	18697.2	0.4496	1mL
18	B2	1/23/2013 12:29	0.0296	5	90141	18028.2	0.4335	1mL
18	B3	1/23/2013 12:20	0.0574	5	90629	18125.8	0.4358	1mL
18	B4	1/23/2013 13:14	0.0818	5	86643	17328.6	0.4167	1mL
18	B5	1/23/2013 13:07	0.1157	5	82965	16593	0.3990	1mL
18	B6	1/23/2013 13:00	0.1470	5	81924	16384.8	0.3940	1mL
18	B7	1/23/2013 12:53	0.1871	5	81708	16341.6	0.3929	1mL
18	B8	1/23/2013 12:46	0.2469	5	78244	15648.8	0.3763	1mL

Mass	Measured Efficiency	Theoretical Efficiency	Percent Δ Efficiency
0.0093	0.4496	0.4487	0.19%
0.0296	0.4335	0.4390	-1.25%
0.0574	0.4358	0.4268	2.13%
0.0818	0.4167	0.4171	-0.11%
0.1157	0.3990	0.4054	-1.57%
0.1470	0.3940	0.3962	-0.56%
0.1871	0.3929	0.3869	1.56%
0.2469	0.3763	0.3780	-0.46%



Mass	Efficiency
0.0093	0.4496
0.0296	0.4335
0.0574	0.4358
0.0818	0.4167
0.1157	0.3990
0.1470	0.3940
0.1871	0.3929
0.2469	0.3763



Standard ID
Strontium 90
Sr-90_00004 #6322
Cert# 80573-334 Ref. date 9/172009

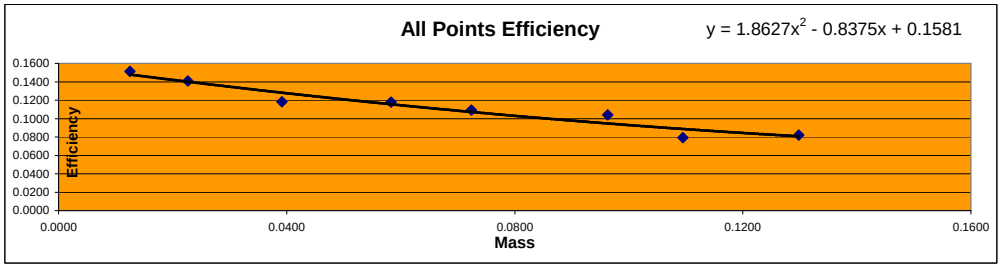
Initial Activity:	22560 dpm/mL
Reference Date:	9/17/2009
Count Date:	1/23/2013
Elapsed Time:	1224.000 days
Half Life:	10409.625 days
Exponential Term:	0.921730256
Corrected Activity:	20794.23458 dpm/mL
Decay Activity (Sr/Y-90)	41588.46916 dpm

Curve is for Gross Alpha

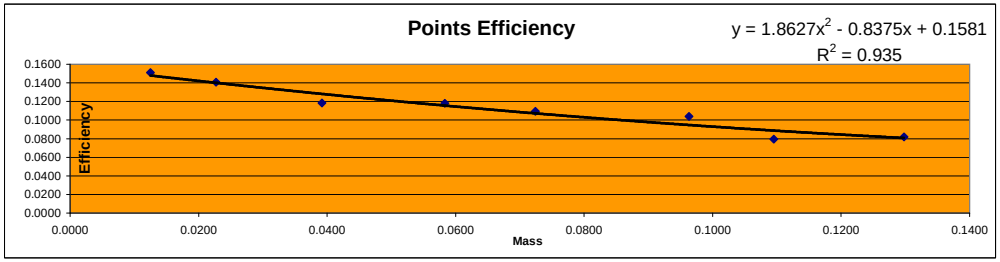
Orange 18

Detector ID	Sample ID	Count Date	Mass	Count Time	Alpha Counts	Net CPM	DPM	Th-230 Efficiency	Standard Aliquot
18	A1	7/24/2013 21:31	0.0125	50	17954	359.080	2374.5	0.1512	1mL
18	A2	7/24/2013 20:19	0.0227	50	16715	334.300	2374.5	0.1408	1mL
18	A3	7/24/2013 19:26	0.0392	50	14052	281.040	2374.5	0.1184	1mL
18	A4	7/25/2013 9:50	0.0583	50	14007	280.140	2374.5	0.1180	1mL
18	A5	7/25/2013 8:55	0.0724	50	25968	519.360	4749.0	0.1094	2mL
18	A6	7/25/2013 7:05	0.0963	50	24679	493.580	4749.0	0.1039	2mL
18	A7	7/24/2013 23:29	0.1095	50	18851	377.020	4749.0	0.0794	2mL
18	A8	7/24/2013 22:35	0.1298	50	19469	389.380	4749.0	0.0820	2mL

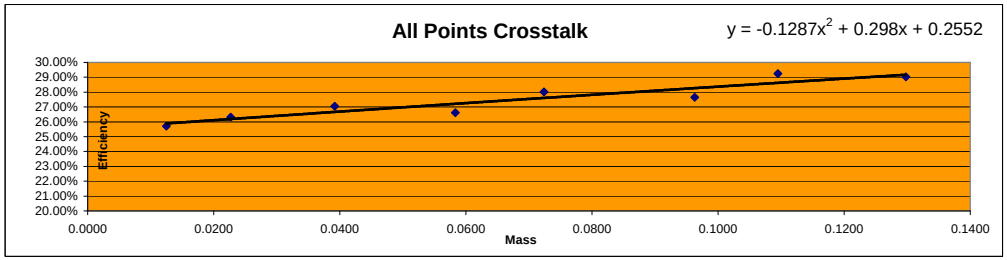
Mass	Measured Efficiency	Theoretical Efficiency	Percent Δ Efficiency
0.0125	0.1512	0.1479	2.23%
0.0227	0.1408	0.1400	0.53%
0.0392	0.1184	0.1281	-7.63%
0.0583	0.1180	0.1156	2.05%
0.0724	0.1094	0.1072	1.99%
0.0963	0.1039	0.0947	9.72%
0.1095	0.0794	0.0887	-10.53%
0.1298	0.0820	0.0808	1.51%



Mass	Efficiency
0.0125	0.1512
0.0227	0.1408
0.0392	0.1184
0.0583	0.1180
0.0724	0.1094
0.0963	0.1039
0.1095	0.0794
0.1298	0.0820



Detector ID	Sample ID	Mass	Count Time	Alpha Counts	Beta Counts	Alpha CPM	Beta CPM	% α into β	
18	A1	0.0125	40.00	17954	6215	448.85	155.38	25.71%	Min
18	A2	0.0227	40.00	16715	5970	417.88	149.25	26.32%	25.71%
18	A3	0.0392	40.00	14052	5207	351.30	130.18	27.04%	
18	A4	0.0583	40.00	14007	5080	350.18	127.00	26.61%	Max
18	A5	0.0724	40.00	25968	10109	649.20	252.73	28.02%	29.25%
18	A6	0.0963	40.00	24679	9433	616.98	235.83	27.65%	
18	A7	0.1095	40.00	18851	7794	471.28	194.85	29.25%	Mean
18	A8	0.1298	40.00	19469	7960	486.73	199.00	29.02%	27.45%



Standard ID
Thorium-230
Th-230_00016 #51465
Cert # 92523 Ref. date 11/29/2012
Activity 2374.5 dpm/mL

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - C

Addr: 18

Sample ID ICABT-6322;B3

Repeat 30

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/23/2013 12:20:19 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 1/23/2013 12:25:29 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.065	48	9.600	9.535
sd	0.000			0.008	6.928	1.386	1.386
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.390	90,629	18,125.800	18,125.410
sd	0.000			0.020	301.047	60.209	60.209

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - C

Addr: 18

Sample ID ICABT-6322;B2

Repeat 31

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/23/2013 12:29:54 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 1/23/2013 12:35:04 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.065	42	8.400	8.335
sd	0.000			0.008	6.481	1.296	1.296
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.390	90,141	18,028.200	18,027.810
sd	0.000			0.020	300.235	60.047	60.047

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - C

Addr: 18

Sample ID ICABT-6322;B1

Repeat 32

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/23/2013 12:37:37 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 1/23/2013 12:42:47 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.065	43	8.600	8.535
sd	0.000			0.008	6.557	1.311	1.312
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.390	93,486	18,697.200	18,696.810
sd	0.000			0.020	305.755	61.151	61.151

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - C

Addr: 18

Sample ID ICABT-6322;B8

Repeat 32

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/23/2013 12:46:16 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 1/23/2013 12:51:24 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.065	30	6.000	5.935
sd	0.000			0.008	5.477	1.095	1.095
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.390	78,244	15,648.800	15,648.410
sd	0.000			0.020	279.721	55.944	55.944

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - C

Addr: 18

Sample ID ICABT-6322;B7

Repeat 33

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 1/23/2013 12:53:44 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 1/23/2013 12:58:52 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.065	31	6.200	6.135
sd	0.000			0.008	5.568	1.114	1.114
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.390	81,708	16,341.600	16,341.210
sd	0.000			0.020	285.846	57.169	57.169

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - C

Addr: 18

Sample ID ICABT-6322;B6

Repeat 34

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/23/2013 1:00:37 PM

Count Ended 1/23/2013 1:05:45 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 5.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.065	44	8.800	8.735
sd	0.000			0.008	6.633	1.327	1.327
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.390	81,924	16,384.800	16,384.410
sd	0.000			0.020	286.224	57.245	57.245

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - C

Addr: 18

Sample ID ICABT-6322;B5

Repeat 35

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 1/23/2013 1:07:48 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 1/23/2013 1:12:57 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.065	33	6.600	6.535
sd	0.000			0.008	5.745	1.149	1.149
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.390	82,965	16,593.000	16,592.610
sd	0.000			0.020	288.036	57.607	57.607

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - C

Addr: 18

Sample ID ICABT-6322;B4

Repeat 37

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/23/2013 1:14:58 PM

Count Ended 1/23/2013 1:20:07 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 5.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.065	48	9.600	9.535
sd	0.000			0.008	6.928	1.386	1.386
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.390	86,643	17,328.600	17,328.210
sd	0.000			0.020	294.352	58.870	58.870

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - C

Addr: 18

Sample ID ICABT-51465;A3

Repeat 28

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/24/2013 7:26:57 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 7/24/2013 8:17:03 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 50.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	14,052	281.040	280.972
sd	0.000			0.008	118.541	2.371	2.371
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.349	5,207	104.140	103.791
sd	0.000			0.019	72.160	1.443	1.443

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - C

Addr: 18

Sample ID ICABT-51465;A2

Repeat 26

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/24/2013 8:19:53 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 7/24/2013 9:09:59 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 50.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	16,715	334.300	334.232
sd	0.000			0.008	129.287	2.586	2.586
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.349	5,970	119.400	119.051
sd	0.000			0.019	77.266	1.545	1.545

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - C

Addr: 18

Sample ID ICABT-51465;A1

Repeat 27

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/24/2013 9:31:48 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 7/24/2013 10:21:54 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 50.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	17,954	359.080	359.012
sd	0.000			0.008	133.993	2.680	2.680
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.349	6,215	124.300	123.951
sd	0.000			0.019	78.835	1.577	1.577

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - C

Addr: 18

Sample ID ICABT-51465;A8 **Repeat** 28

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 7/24/2013 10:35:14 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 7/24/2013 11:25:20 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 50.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	19,469	389.380	389.312
sd	0.000			0.008	139.531	2.791	2.791
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.349	7,960	159.200	158.851
sd	0.000			0.019	89.219	1.784	1.784

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - C

Addr: 18

Sample ID ICABT-51465;A7

Repeat 29

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/24/2013 11:29:41 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 7/25/2013 12:19:47 AM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 50.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	18,851	377.020	376.952
sd	0.000			0.008	137.299	2.746	2.746
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.349	7,794	155.880	155.531
sd	0.000			0.019	88.284	1.766	1.766

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - C

Addr: 18

Sample ID ICABT-51465;A6

Repeat 30

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/25/2013 7:05:08 AM

Count Ended 7/25/2013 7:55:14 AM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 50.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	24,679	493.580	493.512
sd	0.000			0.008	157.096	3.142	3.142
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.349	9,433	188.660	188.311
sd	0.000			0.019	97.124	1.942	1.943

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - C

Addr: 18

Sample ID ICABT-51465;A5

Repeat 31

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/25/2013 8:55:52 AM

Count Ended 7/25/2013 9:45:59 AM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 50.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	25,968	519.360	519.292
sd	0.000			0.008	161.146	3.223	3.223
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.349	10,109	202.180	201.831
sd	0.000			0.019	100.544	2.011	2.011

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - C

Addr: 18

Sample ID ICABT-51465;A4

Repeat 37

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 7/25/2013 9:50:37 AM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 7/25/2013 10:40:43 AM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 50.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	14,007	280.140	280.072
sd	0.000			0.008	118.351	2.367	2.367
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.349	5,080	101.600	101.251
sd	0.000			0.019	71.274	1.425	1.426

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

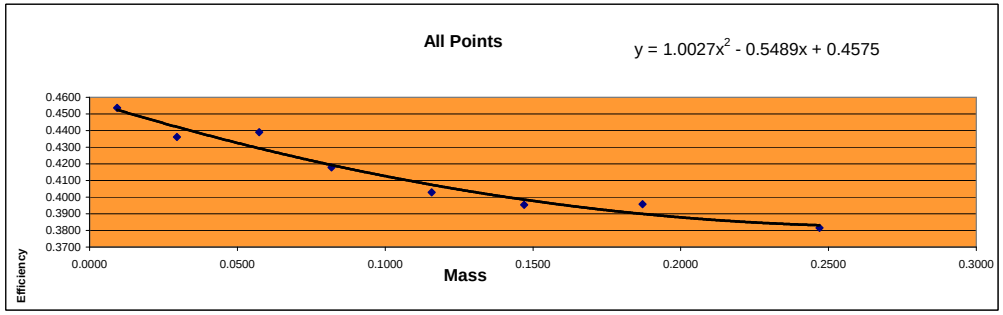
*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Curve is for Gross Beta
Strontium 90
and
Total Strontium

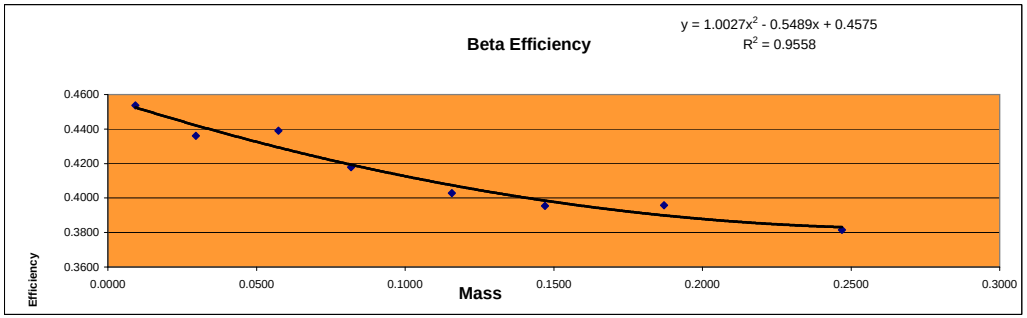
Orange 19

Detector ID	Std ID	Count Date	Sample Wt	Count Time	Beta Counts	DPM 41588.469 CPM	Sr-90 Eff	Standard Aliquot
19	B1	1/23/2013 12:45	0.0093	5	94349	18869.8	0.4537	1mL
19	B2	1/23/2013 12:37	0.0296	5	90680	18136	0.4361	1mL
19	B3	1/23/2013 12:29	0.0574	5	91279	18255.8	0.4390	1mL
19	B4	1/23/2013 12:20	0.0818	5	86904	17380.8	0.4179	1mL
19	B5	1/23/2013 13:15	0.1157	5	83764	16752.8	0.4028	1mL
19	B6	1/23/2013 13:07	0.1470	5	82231	16446.2	0.3955	1mL
19	B7	1/23/2013 13:00	0.1871	5	82304	16460.8	0.3958	1mL
19	B8	1/23/2013 12:53	0.2469	5	79345	15869	0.3816	1mL

Mass	Measured Efficiency	Theoretical Efficiency	Percent Δ Efficiency
0.0093	0.4537	0.4525	0.28%
0.0296	0.4361	0.4421	-1.37%
0.0574	0.4390	0.4293	2.25%
0.0818	0.4179	0.4193	-0.33%
0.1157	0.4028	0.4074	-1.13%
0.1470	0.3955	0.3985	-0.76%
0.1871	0.3958	0.3899	1.51%
0.2469	0.3816	0.3831	-0.40%



Mass	Efficiency
0.0093	0.4537
0.0296	0.4361
0.0574	0.4390
0.0818	0.4179
0.1157	0.4028
0.1470	0.3955
0.1871	0.3958
0.2469	0.3816



Standard ID
Strontium 90
Sr-90_00004 #6322
Cert# 80573-334 Ref. date 9/172009

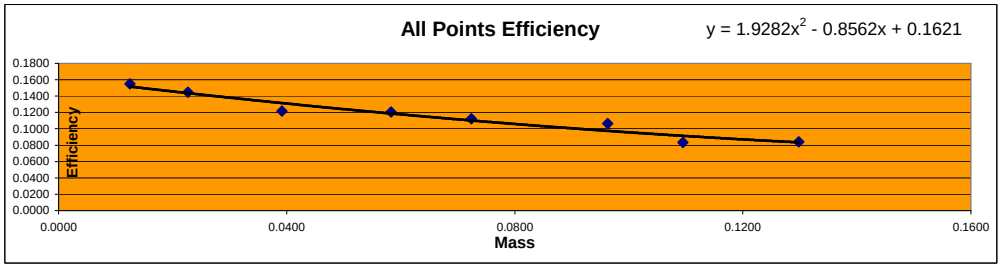
Initial Activity:	22560 dpm/mL
Reference Date:	9/17/2009
Count Date:	1/23/2013
Elapsed Time:	1224.000 days
Half Life:	10409.625 days
Exponential Term:	0.921730256
Corrected Activity:	20794.23458 dpm/mL
Decay Activity (Sr/Y-90)	41588.46916 dpm

Curve is for Gross Alpha

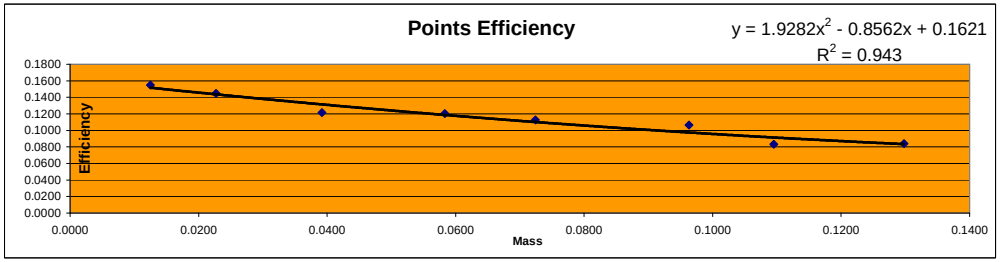
Orange 19

Detector ID	Sample ID	Count Date	Mass	Count Time	Alpha Counts	Net CPM	DPM	Th-230 Efficiency	Standard Aliquot
19	A1	7/24/2013 22:35	0.0125	50	18400	368.000	2374.5	0.1550	1mL
19	A2	7/24/2013 21:31	0.0227	50	17174	343.480	2374.5	0.1447	1mL
19	A3	7/24/2013 20:19	0.0392	50	14434	288.680	2374.5	0.1216	1mL
19	A4	7/24/2013 19:27	0.0583	50	14307	286.140	2374.5	0.1205	1mL
19	A5	7/25/2013 9:50	0.0724	50	26713	534.260	4749.0	0.1125	2mL
19	A6	7/25/2013 8:55	0.0963	50	25239	504.780	4749.0	0.1063	2mL
19	A7	7/25/2013 7:05	0.1095	50	19792	395.840	4749.0	0.0834	2mL
19	A8	7/24/2013 23:29	0.1298	50	19957	399.140	4749.0	0.0840	2mL

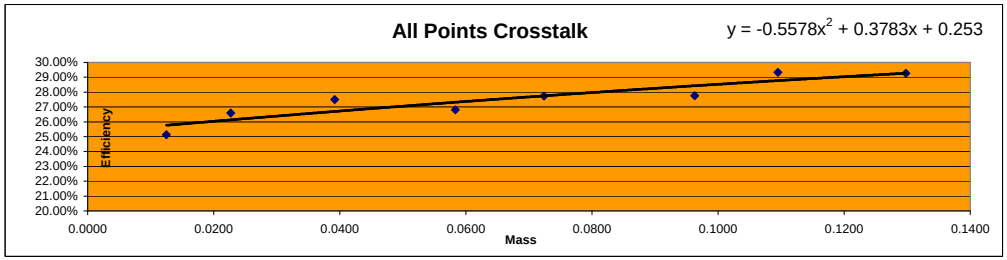
Mass	Measured Efficiency	Theoretical Efficiency	Percent Δ Efficiency
0.0125	0.1550	0.1517	2.16%
0.0227	0.1447	0.1437	0.69%
0.0392	0.1216	0.1315	-7.55%
0.0583	0.1205	0.1187	1.49%
0.0724	0.1125	0.1102	2.07%
0.0963	0.1063	0.0975	8.98%
0.1095	0.0834	0.0915	-8.87%
0.1298	0.0840	0.0835	0.71%



Mass	Efficiency
0.0125	0.1550
0.0227	0.1447
0.0392	0.1216
0.0583	0.1205
0.0724	0.1125
0.0963	0.1063
0.1095	0.0834
0.1298	0.0840



Detector ID	Sample ID	Mass	Count Time	Alpha Counts	Beta Counts	Alpha CPM	Beta CPM	% α into β	
19	A1	0.0125	40.00	18400	6173	460.00	154.33	25.12%	Min
0	A2	0.0227	40.00	17174	6225	429.35	155.63	26.60%	25.12%
0	A3	0.0392	40.00	14434	5476	360.85	136.90	27.50%	
0	A4	0.0583	40.00	14307	5243	357.68	131.08	26.82%	Max
0	A5	0.0724	40.00	26713	10253	667.83	256.33	27.74%	29.34%
0	A6	0.0963	40.00	25239	9697	630.98	242.43	27.76%	
0	A7	0.1095	40.00	19792	8218	494.80	205.45	29.34%	Mean
0	A8	0.1298	40.00	19957	8257	498.93	206.43	29.27%	27.52%



Standard ID
Thorium-230
Th-230_00016 #51465
Cert # 92523 Ref. date 11/29/2012
Activity 2374.5 dpm/mL

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - D

Addr: 19

Sample ID ICABT-6322;B4

Repeat 30

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/23/2013 12:20:25 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 1/23/2013 12:25:35 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.041	26	5.200	5.159
sd	0.000			0.006	5.099	1.020	1.020
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.378	86,904	17,380.800	17,380.422
sd	0.000			0.019	294.795	58.959	58.959

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - D

Addr: 19

Sample ID ICABT-6322;B3

Repeat 31

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 1/23/2013 12:29:59 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 1/23/2013 12:35:09 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.041	32	6.400	6.359
sd	0.000			0.006	5.657	1.131	1.131
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.378	91,279	18,255.800	18,255.422
sd	0.000			0.019	302.124	60.425	60.425

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - D

Addr: 19

Sample ID ICABT-6322;B2

Repeat 32

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/23/2013 12:37:42 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 1/23/2013 12:42:51 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.041	36	7.200	7.159
sd	0.000			0.006	6.000	1.200	1.200
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.378	90,680	18,136.000	18,135.622
sd	0.000			0.019	301.131	60.226	60.226

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - D

Addr: 19

Sample ID ICABT-6322;B1

Repeat 33

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/23/2013 12:45:37 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 1/23/2013 12:50:47 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.041	39	7.800	7.759
sd	0.000			0.006	6.245	1.249	1.249
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.378	94,349	18,869.800	18,869.422
sd	0.000			0.019	307.163	61.433	61.433

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - D

Addr: 19

Sample ID ICABT-6322;B8

Repeat 33

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 1/23/2013 12:53:49 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 1/23/2013 12:58:58 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.041	25	5.000	4.959
sd	0.000			0.006	5.000	1.000	1.000
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.378	79,345	15,869.000	15,868.622
sd	0.000			0.019	281.682	56.336	56.336

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - D

Addr: 19

Sample ID ICABT-6322;B7

Repeat 34

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/23/2013 1:00:41 PM

Count Ended 1/23/2013 1:05:49 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 5.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.041	29	5.800	5.759
sd	0.000			0.006	5.385	1.077	1.077
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.378	82,304	16,460.800	16,460.422
sd	0.000			0.019	286.887	57.377	57.377

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - D

Addr: 19

Sample ID ICABT-6322;B6

Repeat 35

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/23/2013 1:07:52 PM

Count Ended 1/23/2013 1:13:01 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 5.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.041	34	6.800	6.759
sd	0.000			0.006	5.831	1.166	1.166
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.378	82,231	16,446.200	16,445.822
sd	0.000			0.019	286.759	57.352	57.352

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - D

Addr: 19

Sample ID ICABT-6322;B5

Repeat 36

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 1/23/2013 1:15:02 PM

Count Ended 1/23/2013 1:20:11 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 *days*

Decay Factor 1.000

Sample Count Time 5.00 *mins*

Background Count Time 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.041	31	6.200	6.159
sd	0.000			0.006	5.568	1.114	1.114
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.378	83,764	16,752.800	16,752.422
sd	0.000			0.019	289.420	57.884	57.884

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - D

Addr: 19

Sample ID ICABT-51465;A4

Repeat 30

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/24/2013 7:27:02 PM

Count Ended 7/24/2013 8:17:08 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 50.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.037	14,307	286.140	286.103
sd	0.000			0.006	119.612	2.392	2.392
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.373	5,243	104.860	104.487
sd	0.000			0.019	72.409	1.448	1.448

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - D

Addr: 19

Sample ID ICABT-51465;A3

Repeat 29

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/24/2013 8:19:57 PM

Count Ended 7/24/2013 9:10:03 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 50.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.037	14,434	288.680	288.643
sd	0.000			0.006	120.142	2.403	2.403
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.373	5,476	109.520	109.147
sd	0.000			0.019	74.000	1.480	1.480

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - D

Addr: 19

Sample ID ICABT-51465;A2

Repeat 27

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/24/2013 9:31:52 PM

Count Ended 7/24/2013 10:21:58 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 50.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.037	17,174	343.480	343.443
sd	0.000			0.006	131.050	2.621	2.621
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.373	6,225	124.500	124.127
sd	0.000			0.019	78.899	1.578	1.578

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - D

Addr: 19

Sample ID ICABT-51465;A1

Repeat 28

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/24/2013 10:35:18 PM

Count Ended 7/24/2013 11:25:24 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 50.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.037	18,400	368.000	367.963
sd	0.000			0.006	135.647	2.713	2.713
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.373	6,173	123.460	123.087
sd	0.000			0.019	78.568	1.571	1.571

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - D

Addr: 19

Sample ID ICABT-51465;A8

Repeat 29

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/24/2013 11:29:45 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 7/25/2013 12:19:52 AM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 50.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.037	19,957	399.140	399.103
sd	0.000			0.006	141.269	2.825	2.825
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.373	8,257	165.140	164.767
sd	0.000			0.019	90.868	1.817	1.817

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - D

Addr: 19

Sample ID ICABT-51465;A7 **Repeat** 30

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/25/2013 7:05:14 AM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 7/25/2013 7:55:21 AM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 50.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.037	19,792	395.840	395.803
sd	0.000			0.006	140.684	2.814	2.814
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.373	8,218	164.360	163.987
sd	0.000			0.019	90.653	1.813	1.813

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - D

Addr: 19

Sample ID ICABT-51465;A6

Repeat 31

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/25/2013 8:55:59 AM

Collection Date 1 1/1/1900

Half Life 0.00 ***days***

Count Ended 7/25/2013 9:46:06 AM

Collection Date 2 1/1/1900

Decay Factor 1.000

Sample Count Time 50.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.037	25,239	504.780	504.743
sd	0.000			0.006	158.868	3.177	3.177
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.373	9,697	193.940	193.567
sd	0.000			0.019	98.473	1.969	1.970

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - D

Addr: 19

Sample ID ICABT-51465;A5

Repeat 32

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/25/2013 9:50:41 AM

Count Ended 7/25/2013 10:40:48 AM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 50.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.037	26,713	534.260	534.223
sd	0.000			0.006	163.441	3.269	3.269
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.373	10,253	205.060	204.687
sd	0.000			0.019	101.257	2.025	2.025

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

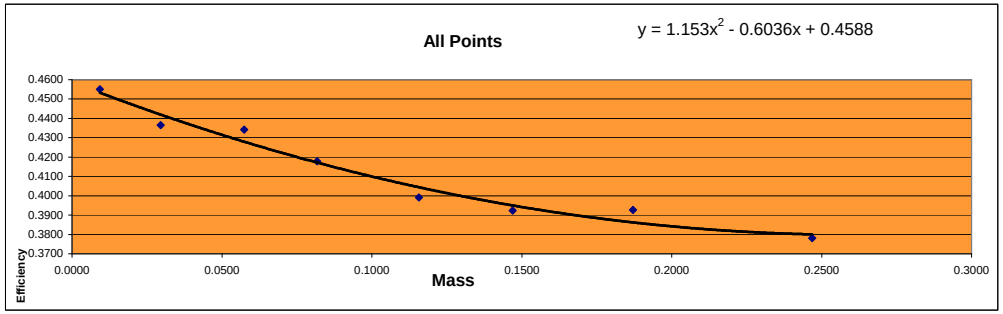
Error = .00 **x sd**

Curve is for Gross Beta
Strontium 90
and
Total Strontium

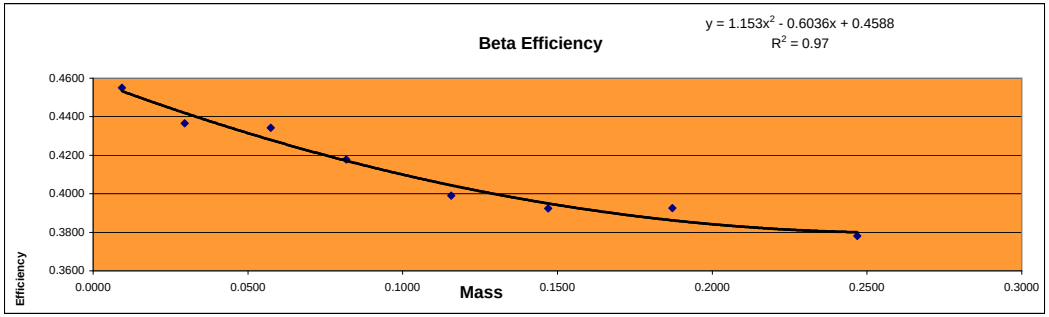
Orange 21

Detector ID	Std ID	Count Date	Sample Wt	Count Time	Beta Counts	DPM 41588.469 CPM	Sr-90 Eff	Standard Aliquot
21	B1	1/23/2013 13:00	0.0093	5	94634	18926.800	0.4551	1mL
21	B2	1/23/2013 12:53	0.0296	5	90782	18156.400	0.4366	1mL
21	B3	1/23/2013 12:45	0.0574	5	90299	18059.800	0.4343	1mL
21	B4	1/23/2013 12:37	0.0818	5	86884	17376.800	0.4178	1mL
21	B5	1/23/2013 12:30	0.1157	5	82988	16597.600	0.3991	1mL
21	B6	1/23/2013 12:20	0.1470	5	81590	16318.000	0.3924	1mL
21	B7	1/23/2013 13:15	0.1871	5	81638	16327.600	0.3926	1mL
21	B8	1/23/2013 13:08	0.2469	5	78630	15726.000	0.3781	1mL

Mass	Measured Efficiency	Theoretical Efficiency	Percent Δ Efficiency
0.0093	0.4551	0.4533	0.40%
0.0296	0.4366	0.4419	-1.22%
0.0574	0.4343	0.4280	1.47%
0.0818	0.4178	0.4171	0.16%
0.1157	0.3991	0.4044	-1.31%
0.1470	0.3924	0.3950	-0.66%
0.1871	0.3926	0.3862	1.65%
0.2469	0.3781	0.3801	-0.51%



Mass	Efficiency
0.0093	0.4551
0.0296	0.4366
0.0574	0.4343
0.0818	0.4178
0.1157	0.3991
0.1470	0.3924
0.1871	0.3926
0.2469	0.3781



Standard ID
Strontium 90
Sr-90_00004 #6322
Cert# 80573-334 Ref. date 9/172009

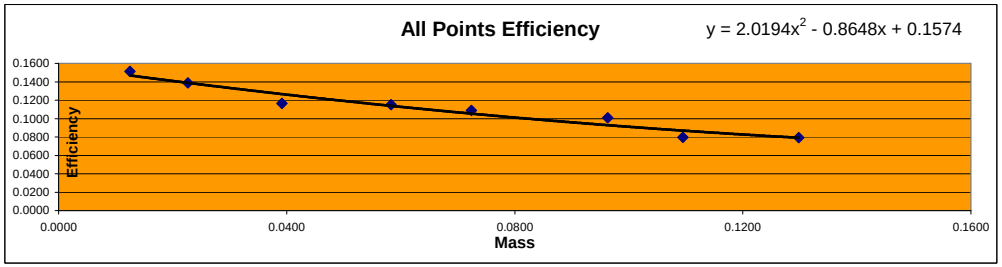
Initial Activity:	22560	dpm/mL
Reference Date:	9/17/2009	
Count Date:	1/23/2013	
Elapsed Time:	1224.000	days
Half Life:	10409.625	days
Exponential Term:	0.921730256	
Corrected Activity:	20794.23458	dpm/mL
Decay Activity (Sr/Y-90)	41588.46916	dpm

Curve is for Gross Alpha

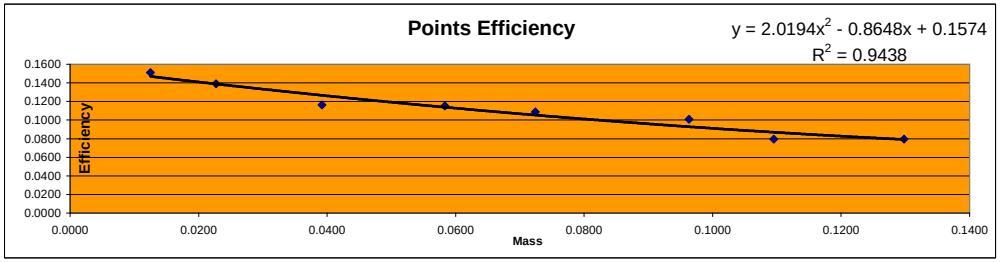
Orange 21

Detector ID	Sample ID	Count Date	Mass	Count Time	Alpha Counts	Net CPM	DPM	Th-230 Efficiency	Standard Aliquot
21	A1	7/25/2013 7:05	0.0125	50	17950	359.000	2374.5	0.1512	1mL
21	A2	7/24/2013 23:29	0.0227	50	16485	329.700	2374.5	0.1389	1mL
21	A3	7/24/2013 22:35	0.0392	50	13822	276.440	2374.5	0.1164	1mL
21	A4	7/24/2013 21:32	0.0583	50	13681	273.620	2374.5	0.1152	1mL
21	A5	7/24/2013 20:20	0.0724	50	25842	516.840	4749.0	0.1088	2mL
21	A6	7/24/2013 19:27	0.0963	50	23961	479.220	4749.0	0.1009	2mL
21	A7	7/25/2013 9:50	0.1095	50	18907	378.140	4749.0	0.0796	2mL
21	A8	7/25/2013 8:56	0.1298	50	18872	377.440	4749.0	0.0795	2mL

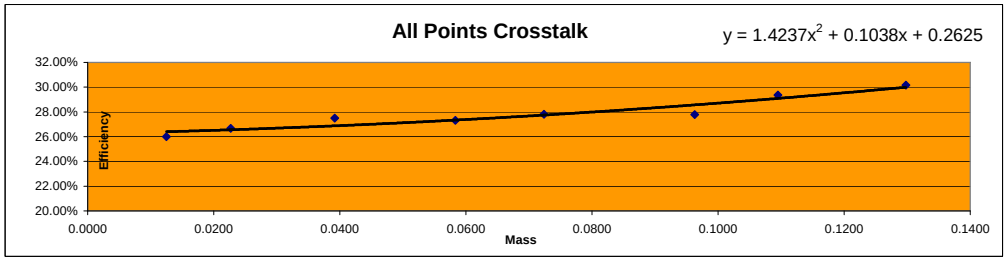
Mass	Measured Efficiency	Theoretical Efficiency	Percent Δ Efficiency
0.0125	0.1512	0.1469	2.92%
0.0227	0.1389	0.1388	0.03%
0.0392	0.1164	0.1266	-8.04%
0.0583	0.1152	0.1138	1.22%
0.0724	0.1088	0.1054	3.28%
0.0963	0.1009	0.0928	8.68%
0.1095	0.0796	0.0869	-8.39%
0.1298	0.0795	0.0792	0.39%



Mass	Efficiency
0.0125	0.1512
0.0227	0.1389
0.0392	0.1164
0.0583	0.1152
0.0724	0.1088
0.0963	0.1009
0.1095	0.0796
0.1298	0.0795



Detector ID	Sample ID	Mass	Count Time	Alpha Counts	Beta Counts	Alpha CPM	Beta CPM	% α into β	
21	A1	0.0125	40.00	17950	6307	448.75	157.68	26.00%	Min
21	A2	0.0227	40.00	16485	5993	412.13	149.83	26.66%	26.00%
21	A3	0.0392	40.00	13822	5240	345.55	131.00	27.49%	
21	A4	0.0583	40.00	13681	5142	342.03	128.55	27.32%	Max
21	A5	0.0724	40.00	25842	9950	646.05	248.75	27.80%	30.18%
21	A6	0.0963	40.00	23961	9213	599.03	230.33	27.77%	
21	A7	0.1095	40.00	18907	7858	472.68	196.45	29.36%	Mean
21	A8	0.1298	40.00	18872	8156	471.80	203.90	30.18%	27.82%



Standard ID
Thorium-230
Th-230_00016 #51465
Cert # 92523 Ref. date 11/29/2012
Activity 2374.5 dpm/mL

Alpha/Beta Count Results

Sample Activity Report

Orange 20-23 - B

Addr: 21

Sample ID ICABT-6322;B6 **Repeat** 29

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 1/23/2013 12:20:41 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 1/23/2013 12:25:55 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.056	26	5.200	5.144
sd	0.000			0.007	5.099	1.020	1.020
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.253	81,590	16,318.000	16,317.747
sd	0.000			0.016	285.640	57.128	57.128

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 20-23 - B

Addr: 21

Sample ID ICABT-6322;B5

Repeat 30

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/23/2013 12:30:09 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 1/23/2013 12:35:17 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.056	31	6.200	6.144
sd	0.000			0.007	5.568	1.114	1.114
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.253	82,988	16,597.600	16,597.347
sd	0.000			0.016	288.076	57.615	57.615

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 20-23 - B

Addr: 21

Sample ID ICABT-6322;B4 **Repeat** 32

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 1/23/2013 12:37:53 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 1/23/2013 12:43:02 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.056	29	5.800	5.744
sd	0.000			0.007	5.385	1.077	1.077
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.253	86,884	17,376.800	17,376.547
sd	0.000			0.016	294.761	58.952	58.952

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 20-23 - B

Addr: 21

Sample ID ICABT-6322;B3 **Repeat** 33

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 1/23/2013 12:45:51 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 1/23/2013 12:51:00 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.056	31	6.200	6.144
sd	0.000			0.007	5.568	1.114	1.114
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.253	90,299	18,059.800	18,059.547
sd	0.000			0.016	300.498	60.100	60.100

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 20-23 - B

Addr: 21

Sample ID ICABT-6322;B2

Repeat 34

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/23/2013 12:53:21 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 1/23/2013 12:58:31 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.056	30	6.000	5.944
sd	0.000			0.007	5.477	1.095	1.095
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.253	90,782	18,156.400	18,156.147
sd	0.000			0.016	301.301	60.260	60.260

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 20-23 - B

Addr: 21

Sample ID ICABT-6322;B1

Repeat 35

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/23/2013 1:00:08 PM

Count Ended 1/23/2013 1:05:19 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 5.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.056	37	7.400	7.344
sd	0.000			0.007	6.083	1.217	1.217
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.253	94,634	18,926.800	18,926.547
sd	0.000			0.016	307.626	61.525	61.525

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 20-23 - B

Addr: 21

Sample ID ICABT-6322;B8 **Repeat** 35

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 1/23/2013 1:08:01 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 1/23/2013 1:13:10 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.056	25	5.000	4.944
sd	0.000			0.007	5.000	1.000	1.000
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.253	78,630	15,726.000	15,725.747
sd	0.000			0.016	280.410	56.082	56.082

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 20-23 - B

Addr: 21

Sample ID ICABT-6322;B7

Repeat 36

Carrier No. 0

Batch ID m122627

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 1/23/2013 1:15:13 PM

Count Ended 1/23/2013 1:20:22 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 *days*

Decay Factor 1.000

Sample Count Time 5.00 *mins*

Background Count Time 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.056	32	6.400	6.344
sd	0.000			0.007	5.657	1.131	1.131
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.253	81,638	16,327.600	16,327.347
sd	0.000			0.016	285.724	57.145	57.145

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 20-23 - B

Addr: 21

Sample ID ICABT-51465;A6

Repeat 25

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 7/24/2013 7:27:12 PM

Count Ended 7/24/2013 8:17:19 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 *days*

Decay Factor 1.000

Sample Count Time 50.00 *mins*

Background Count Time 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.061	23,961	479.220	479.159
sd	0.000			0.008	154.793	3.096	3.096
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.305	9,213	184.260	183.955
sd	0.000			0.017	95.984	1.920	1.920

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 20-23 - B

Addr: 21

Sample ID ICABT-51465;A5

Repeat 26

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/24/2013 8:20:07 PM

Count Ended 7/24/2013 9:10:15 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 50.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.061	25,842	516.840	516.779
sd	0.000			0.008	160.754	3.215	3.215
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.305	9,950	199.000	198.695
sd	0.000			0.017	99.750	1.995	1.995

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 20-23 - B

Addr: 21

Sample ID ICABT-51465;A4 **Repeat** 32

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 7/24/2013 9:32:02 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 7/24/2013 10:22:07 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 50.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.061	13,681	273.620	273.559
sd	0.000			0.008	116.966	2.339	2.339
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.305	5,142	102.840	102.535
sd	0.000			0.017	71.708	1.434	1.434

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 20-23 - B

Addr: 21

Sample ID ICABT-51465;A3

Repeat 31

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/24/2013 10:35:29 PM

Collection Date 1 1/1/1900

Half Life 0.00 ***days***

Count Ended 7/24/2013 11:25:34 PM

Collection Date 2 1/1/1900

Decay Factor 1.000

Sample Count Time 50.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.061	13,822	276.440	276.379
sd	0.000			0.008	117.567	2.351	2.351
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.305	5,240	104.800	104.495
sd	0.000			0.017	72.388	1.448	1.448

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 20-23 - B

Addr: 21

Sample ID ICABT-51465;A2 **Repeat** 29

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/24/2013 11:29:57 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 7/25/2013 12:20:03 AM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 50.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.061	16,485	329.700	329.639
sd	0.000			0.008	128.394	2.568	2.568
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.305	5,993	119.860	119.555
sd	0.000			0.017	77.414	1.548	1.548

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 20-23 - B

Addr: 21

Sample ID ICABT-51465;A1

Repeat 30

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 7/25/2013 7:05:31 AM

Count Ended 7/25/2013 7:55:37 AM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 *days*

Decay Factor 1.000

Sample Count Time 50.00 *mins*

Background Count Time 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.061	17,950	359.000	358.939
sd	0.000			0.008	133.978	2.680	2.680
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.305	6,307	126.140	125.835
sd	0.000			0.017	79.417	1.588	1.588

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 20-23 - B

Addr: 21

Sample ID ICABT-51465;A8

Repeat 31

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/25/2013 8:56:20 AM

Collection Date 1 1/1/1900

Half Life 0.00 ***days***

Count Ended 7/25/2013 9:46:27 AM

Collection Date 2 1/1/1900

Decay Factor 1.000

Sample Count Time 50.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.061	18,872	377.440	377.379
sd	0.000			0.008	137.375	2.748	2.748
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.305	8,156	163.120	162.815
sd	0.000			0.017	90.311	1.806	1.806

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 20-23 - B

Addr: 21

Sample ID ICABT-51465;A7

Repeat 32

Carrier No. 0

Batch ID M132731

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/25/2013 9:50:53 AM

Collection Date 1 1/1/1900

Half Life 0.00 ***days***

Count Ended 7/25/2013 10:40:59 AM

Collection Date 2 1/1/1900

Decay Factor 1.000

Sample Count Time 50.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.061	18,907	378.140	378.079
sd	0.000			0.008	137.503	2.750	2.750
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.305	7,858	157.160	156.855
sd	0.000			0.017	88.645	1.773	1.773

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha Beta Calibration Verifications

ICV is for Gross Beta
Strontium 90
and
Total Strontium

Orange Beta ICV 2013						
Detector	Low Mass Recovery	Medium Mass Recovery	High Mass Recovery	Mean Recovery	Beta Activity	2009.34 pCi
4	99.78%	99.98%	101.63%	100.46%		

Standard ID

Strontium 90
Sr-90_00018 #51512 (Rad12-0043)
Cert# 92352 Ref. date 11/29/12

Initial Activity:	2238.7	dpm	
Reference Date:	11/29/2012		
Current Date:	1/24/2013		(or date at which you wish to determine activity)
Elapsed Time:	56.000	days	
Half Life:	10409.625	days	
Exponential Term:	0.996278064		
Corrected Activity:	2230.367701	dpm	
Decay Activity (Sr/Y-90)	4460.735402	dpm	2009.34 pCi

ICV is for Gross Alpha

Orange Alpha ICV 2013				
	Low	Medium	High	Mean
	Mass	Mass	Mass	Recovery
Detector	Recovery	Recovery	Recovery	
4	120.12%	102.53%	87.34%	103.33%

Standard ID

Thorium-230
Th-230_00003 #6340
Cert # 84460-334 Ref. date 4/11/11
Activity 1079.73 pCi/mL

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - A

Addr: 4

Sample ID ICV-51512;Beta 1 **Repeat** 1

Carrier No. 0

Batch ID m122640

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/24/2013 6:10:26 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 1/24/2013 6:15:29 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.049	4	0.800	0.751
sd	0.000			0.007	2.000	0.400	0.400
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.380	9,525	1,905.000	1,904.620
sd	0.000			0.019	97.596	19.519	19.519

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - A

Addr: 4

Sample ID ICV-51512;Beta 3 **Repeat** 3

Carrier No. 0

Batch ID m122640

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/24/2013 6:25:15 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 1/24/2013 6:30:18 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.049	2	0.400	0.351
sd	0.000			0.007	1.414	0.283	0.283
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.380	8,745	1,749.000	1,748.620
sd	0.000			0.019	93.515	18.703	18.703

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - A

Addr: 4

Sample ID ICV-51512;Beta 2

Repeat 4

Carrier No. 0

Batch ID m122640

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/24/2013 6:33:12 PM

Count Ended 1/24/2013 6:38:15 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 5.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.049	1	0.200	0.151
sd	0.000			0.007	1.000	0.200	0.200
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.380	9,009	1,801.800	1,801.420
sd	0.000			0.019	94.916	18.983	18.983

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - A

Addr: 4

Sample ID ICVABT-6340;A2

Repeat 9

Carrier No. 0

Batch ID m132736

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 7/24/2013 8:56:57 AM

Count Ended 7/24/2013 9:27:00 AM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 *days*

Decay Factor 1.000

Sample Count Time 30.00 *mins*

Background Count Time 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	7,806	260.200	260.132
sd	0.000			0.008	88.352	2.945	2.945
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.386	3,455	115.167	114.781
sd	0.000			0.020	58.779	1.959	1.959

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - A

Addr: 4

Sample ID ICVABT-6340;A1 **Repeat** 10

Carrier No. 0

Batch ID m132736

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 7/24/2013 9:49:41 AM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 7/24/2013 10:19:46 AM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 30.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	11,505	383.500	383.432
sd	0.000			0.008	107.261	3.575	3.575
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.386	4,581	152.700	152.314
sd	0.000			0.020	67.683	2.256	2.256

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - A

Addr: 4

Sample ID ICVABT-6340;A3 **Repeat** 11

Carrier No. 0

Batch ID m132736

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/24/2013 10:43:44 AM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 7/24/2013 11:13:47 AM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 30.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	5,825	194.167	194.099
sd	0.000			0.008	76.322	2.544	2.544
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.386	2,933	97.767	97.381
sd	0.000			0.020	54.157	1.805	1.805

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

ICV is for Gross Beta
Strontium 90
and
Total Strontium

Orange Beta ICV 2013						
Detector	Low Mass Recovery	Medium Mass Recovery	High Mass Recovery	Mean Recovery	Beta Activity	2009.34 pCi
6	97.99%	98.74%	99.88%	98.87%		

Standard ID

Strontium 90
Sr-90_00018 #51512 (Rad12-0043)
Cert# 92352 Ref. date 11/29/12

Initial Activity:	2238.7	dpm	
Reference Date:	11/29/2012		
Current Date:	1/24/2013		(or date at which you wish to determine activity)
Elapsed Time:	56.000	days	
Half Life:	10409.625	days	
Exponential Term:	0.996278064		
Corrected Activity:	2230.367701	dpm	
Decay Activity (Sr/Y-90)	4460.735402	dpm	2009.34 pCi

ICV is for Gross Alpha

Orange Alpha ICV 2013				
	Low	Medium	High	Mean
	Mass	Mass	Mass	Recovery
Detector	Recovery	Recovery	Recovery	
6	118.18%	101.41%	84.66%	101.42%

Standard ID

Thorium-230
Th-230_00003 #6340
Cert # 84460-334 Ref. date 4/11/11
Activity 1079.73 pCi/mL

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - C

Addr: 6

Sample ID ICV-51512;Beta 3 **Repeat** 1

Carrier No. 0

Batch ID m122640

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/24/2013 6:10:34 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 1/24/2013 6:15:36 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.073	1	0.200	0.127
sd	0.000			0.009	1.000	0.200	0.200
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.346	8,560	1,712.000	1,711.654
sd	0.000			0.019	92.520	18.504	18.504

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - C

Addr: 6

Sample ID ICV-51512;Beta 2

Repeat 2

Carrier No. 0

Batch ID m122640

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 1/24/2013 6:16:59 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 1/24/2013 6:22:02 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.073	0	0.000	-0.073
sd	0.000			0.009	0.000	0.000	0.171
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.346	8,863	1,772.600	1,772.254
sd	0.000			0.019	94.144	18.829	18.829

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - C

Addr: 6

Sample ID ICV-51512;Beta 1 **Repeat** 3

Carrier No. 0

Batch ID m122640

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 1/24/2013 6:25:24 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 1/24/2013 6:30:26 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.073	1	0.200	0.127
sd	0.000			0.009	1.000	0.200	0.200
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.346	9,330	1,866.000	1,865.654
sd	0.000			0.019	96.592	19.318	19.318

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - C

Addr: 6

Sample ID ICVABT-6340;A1 **Repeat** 12

Carrier No. 0

Batch ID m132736

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 7/24/2013 11:45:14 AM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 7/24/2013 12:15:19 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 30.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.081	11,162	372.067	371.986
sd	0.000			0.009	105.650	3.522	3.522
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.461	4,391	146.367	145.906
sd	0.000			0.021	66.265	2.209	2.209

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - C

Addr: 6

Sample ID ICVABT-6340;A2 **Repeat** 12

Carrier No. 0

Batch ID m132736

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 7/24/2013 3:13:39 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 7/24/2013 3:43:42 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 30.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.081	7,577	252.567	252.486
sd	0.000			0.009	87.046	2.902	2.902
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.461	3,454	115.133	114.672
sd	0.000			0.021	58.771	1.959	1.959

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - C

Addr: 6

Sample ID ICVABT-6340;A3 **Repeat** 13

Carrier No. 0

Batch ID m132736

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 7/24/2013 3:46:36 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 7/24/2013 4:16:39 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 30.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.081	5,528	184.267	184.186
sd	0.000			0.009	74.351	2.478	2.478
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.461	2,829	94.300	93.839
sd	0.000			0.021	53.188	1.773	1.773

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

ICV is for Gross Beta
Strontium 90
and
Total Strontium

Orange Beta ICV 2013				
Detector	Low Mass Recovery	Medium Mass Recovery	High Mass Recovery	Mean Recovery
11	98.24%	99.68%	98.09%	98.67%

Beta Activity 2009.34 pCi

Standard ID

Strontium 90
Sr-90_00018 #51512 (Rad12-0043)
Cert# 92352 Ref. date 11/29/12

Initial Activity:	2238.7	dpm	
Reference Date:	11/29/2012		
Current Date:	1/24/2013		(or date at which you wish to determine activity)
Elapsed Time:	56.000	days	
Half Life:	10409.625	days	
Exponential Term:	0.996278064		
Corrected Activity:	2230.367701	dpm	
Decay Activity (Sr/Y-90)	4460.735402	dpm	2009.34 pCi

ICV is for Gross Alpha

Orange Alpha ICV 2013				
	Low	Medium	High	Mean
	Mass	Mass	Mass	Recovery
Detector	Recovery	Recovery	Recovery	
11	117.81%	96.88%	81.59%	98.76%

Standard ID

Thorium-230
Th-230_00003 #6340
Cert # 84460-334 Ref. date 4/11/11
Activity 1079.73 pCi/mL

Alpha/Beta Count Results

Sample Activity Report

Orange 8-11 - D

Addr: 11

Sample ID ICV-51512;Beta 3 **Repeat** 10

Carrier No. 0

Batch ID m122640

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/24/2013 7:32:07 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 1/24/2013 7:37:09 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.044	0	0.000	-0.044
sd	0.000			0.007	0.000	0.000	0.133
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.487	8,344	1,668.800	1,668.313
sd	0.000			0.022	91.345	18.269	18.269

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 8-11 - D

Addr: 11

Sample ID ICV-51512;Beta 2

Repeat 11

Carrier No. 0

Batch ID m122640

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/24/2013 7:38:39 PM

Count Ended 1/24/2013 7:43:42 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 5.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.044	3	0.600	0.556
sd	0.000			0.007	1.732	0.346	0.346
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.487	8,877	1,775.400	1,774.913
sd	0.000			0.022	94.218	18.844	18.844

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 8-11 - D

Addr: 11

Sample ID ICV-51512;Beta 1 **Repeat** 12

Carrier No. 0

Batch ID m122640

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 1/24/2013 7:50:18 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 1/24/2013 7:55:20 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.044	2	0.400	0.356
sd	0.000			0.007	1.414	0.283	0.283
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.487	9,272	1,854.400	1,853.913
sd	0.000			0.022	96.291	19.258	19.258

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 8-11 - D

Addr: 11

Sample ID ICVABT-6340;A3

Repeat 15

Carrier No. 0

Batch ID m132736

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/24/2013 8:19:22 PM

Count Ended 7/24/2013 8:49:25 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 30.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	6,238	207.933	207.865
sd	0.000			0.008	78.981	2.633	2.633
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.497	2,446	81.533	81.036
sd	0.000			0.022	49.457	1.649	1.649

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 8-11 - D

Addr: 11

Sample ID ICVABT-6340;A2

Repeat 16

Carrier No. 0

Batch ID m132736

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 7/24/2013 8:51:14 PM

Count Ended 7/24/2013 9:21:17 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 *days*

Decay Factor 1.000

Sample Count Time 30.00 *mins*

Background Count Time 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	8,127	270.900	270.832
sd	0.000			0.008	90.150	3.005	3.005
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.497	2,836	94.533	94.036
sd	0.000			0.022	53.254	1.775	1.775

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 8-11 - D

Addr: 11

Sample ID ICVABT-6340;A1 **Repeat** 17

Carrier No. 0

Batch ID m132736

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 7/24/2013 9:31:19 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 7/24/2013 10:01:23 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 30.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	11,723	390.767	390.699
sd	0.000			0.008	108.273	3.609	3.609
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.497	3,828	127.600	127.103
sd	0.000			0.022	61.871	2.062	2.062

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

ICV is for Gross Beta
Strontium 90
and
Total Strontium

Orange Beta ICV 2013				
Detector	Low Mass Recovery	Medium Mass Recovery	High Mass Recovery	Mean Recovery
17	98.54%	98.89%	98.89%	98.77%

Beta Activity 2009.34 pCi

Standard ID

Strontium 90
Sr-90_00018 #51512 (Rad12-0043)
Cert# 92352 Ref. date 11/29/12

Initial Activity:	2238.7	dpm	
Reference Date:	11/29/2012		
Current Date:	1/24/2013		(or date at which you wish to determine activity)
Elapsed Time:	56.000	days	
Half Life:	10409.625	days	
Exponential Term:	0.996278064		
Corrected Activity:	2230.367701	dpm	
Decay Activity (Sr/Y-90)	4460.735402	dpm	2009.34 pCi

ICV is for Gross Alpha

Orange Alpha ICV 2013				
	Low	Medium	High	Mean
	Mass	Mass	Mass	Recovery
Detector	Recovery	Recovery	Recovery	
17	118.36%	97.89%	81.15%	99.14%

Standard ID

Thorium-230
Th-230_00003 #6340
Cert # 84460-334 Ref. date 4/11/11
Activity 1079.73 pCi/mL

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - B

Addr: 17

Sample ID ICV-51512;Beta 2

Repeat 17

Carrier No. 0

Batch ID m122640

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 1/24/2013 9:41:35 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 1/24/2013 9:46:37 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.079	1	0.200	0.121
sd	0.000			0.009	1.000	0.200	0.200
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.387	8,859	1,771.800	1,771.413
sd	0.000			0.020	94.122	18.824	18.824

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - B

Addr: 17

Sample ID ICV-51512;Beta 1 **Repeat** 18

Carrier No. 0

Batch ID m122640

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/24/2013 9:47:57 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 1/24/2013 9:52:59 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.079	2	0.400	0.321
sd	0.000			0.009	1.414	0.283	0.283
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.387	9,363	1,872.600	1,872.213
sd	0.000			0.020	96.763	19.353	19.353

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - B

Addr: 17

Sample ID ICV-51512;Beta 3 **Repeat** 20

Carrier No. 0

Batch ID m122640

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/24/2013 10:01:55 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 1/24/2013 10:06:58 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.079	5	1.000	0.921
sd	0.000			0.009	2.236	0.447	0.447
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.387	8,463	1,692.600	1,692.213
sd	0.000			0.020	91.995	18.399	18.399

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - B

Addr: 17

Sample ID ICVABT-6340;A2 **Repeat** 22

Carrier No. 0

Batch ID m132736

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 7/25/2013 10:59:36 AM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 7/25/2013 11:29:41 AM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 30.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.100	8,224	274.133	274.033
sd	0.000			0.010	90.686	3.023	3.023
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.347	3,101	103.367	103.020
sd	0.000			0.019	55.687	1.856	1.856

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - B

Addr: 17

Sample ID ICVABT-6340;A1 **Repeat** 23

Carrier No. 0

Batch ID m132736

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/25/2013 11:33:13 AM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 7/25/2013 12:03:19 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 30.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.100	11,853	395.100	395.000
sd	0.000			0.010	108.871	3.629	3.629
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.347	4,159	138.633	138.286
sd	0.000			0.019	64.490	2.150	2.150

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - B

Addr: 17

Sample ID ICVABT-6340;A3 **Repeat** 25

Carrier No. 0

Batch ID m132736

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/25/2013 12:39:41 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 7/25/2013 1:09:45 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 30.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.100	6,193	206.433	206.333
sd	0.000			0.010	78.696	2.623	2.623
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.347	2,725	90.833	90.486
sd	0.000			0.019	52.202	1.740	1.740

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

ICV is for Gross Beta
Strontium 90
and
Total Strontium

Orange Beta ICV 2013						
Detector	Low Mass Recovery	Medium Mass Recovery	High Mass Recovery	Mean Recovery	Beta Activity	2009.34 pCi
18	96.95%	97.69%	99.04%	97.89%		

Standard ID

Strontium 90
Sr-90_00018 #51512 (Rad12-0043)
Cert# 92352 Ref. date 11/29/12

Initial Activity:	2238.7	dpm	
Reference Date:	11/29/2012		
Current Date:	1/24/2013		(or date at which you wish to determine activity)
Elapsed Time:	56.000	days	
Half Life:	10409.625	days	
Exponential Term:	0.996278064		
Corrected Activity:	2230.367701	dpm	
Decay Activity (Sr/Y-90)	4460.735402	dpm	2009.34 pCi

ICV is for Gross Alpha

Orange Alpha ICV 2013				
	Low	Medium	High	Mean
	Mass	Mass	Mass	Recovery
Detector	Recovery	Recovery	Recovery	
18	118.55%	99.84%	82.85%	100.41%

Standard ID

Thorium-230
Th-230_00003 #6340
Cert # 84460-334 Ref. date 4/11/11
Activity 1079.73 pCi/mL

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - C

Addr: 18

Sample ID ICV-51512;Beta 3 **Repeat** 17

Carrier No. 0

Batch ID m122640

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/24/2013 9:41:39 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 1/24/2013 9:46:41 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.065	4	0.800	0.735
sd	0.000			0.008	2.000	0.400	0.400
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.390	8,572	1,714.400	1,714.010
sd	0.000			0.020	92.585	18.517	18.517

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - C

Addr: 18

Sample ID ICV-51512;Beta 2 **Repeat** 18

Carrier No. 0

Batch ID m122640

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/24/2013 9:48:01 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 1/24/2013 9:53:03 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.065	4	0.800	0.735
sd	0.000			0.008	2.000	0.400	0.400
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.390	8,863	1,772.600	1,772.210
sd	0.000			0.020	94.144	18.829	18.829

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - C

Addr: 18

Sample ID ICV-51512;Beta 1 **Repeat** 19

Carrier No. 0

Batch ID m122640

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/24/2013 9:54:58 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 1/24/2013 9:58:00 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 3.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.065	3	1.000	0.935
sd	0.000			0.008	1.732	0.577	0.577
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.390	5,571	1,857.000	1,856.610
sd	0.000			0.020	74.639	24.880	24.880

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - C

Addr: 18

Sample ID ICVABT-6340;A3 **Repeat** 22

Carrier No. 0

Batch ID m132736

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 7/25/2013 10:59:42 AM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 7/25/2013 11:29:45 AM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 30.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	6,411	213.700	213.632
sd	0.000			0.008	80.069	2.669	2.669
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.349	2,596	86.533	86.184
sd	0.000			0.019	50.951	1.698	1.698

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - C

Addr: 18

Sample ID ICVABT-6340;A2

Repeat 23

Carrier No. 0

Batch ID m132736

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/25/2013 11:33:18 AM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 7/25/2013 12:03:23 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 30.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	8,488	282.933	282.865
sd	0.000			0.008	92.130	3.071	3.071
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.349	3,071	102.367	102.018
sd	0.000			0.019	55.417	1.847	1.847

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - C

Addr: 18

Sample ID ICVABT-6340;A1 **Repeat** 24

Carrier No. 0

Batch ID m132736

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/25/2013 12:06:35 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 7/25/2013 12:36:40 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 30.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.068	11,983	399.433	399.365
sd	0.000			0.008	109.467	3.649	3.649
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.349	4,082	136.067	135.718
sd	0.000			0.019	63.891	2.130	2.130

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

ICV is for Gross Beta
Strontium 90
and
Total Strontium

Orange Beta ICV 2013						
Detector	Low Mass Recovery	Medium Mass Recovery	High Mass Recovery	Mean Recovery	Beta Activity	2009.34 pCi
19	97.79%	98.19%	98.99%	98.32%		

Standard ID

Strontium 90
Sr-90_00018 #51512 (Rad12-0043)
Cert# 92352 Ref. date 11/29/12

Initial Activity:	2238.7	dpm	
Reference Date:	11/29/2012		
Current Date:	1/24/2013		(or date at which you wish to determine activity)
Elapsed Time:	56.000	days	
Half Life:	10409.625	days	
Exponential Term:	0.996278064		
Corrected Activity:	2230.367701	dpm	
Decay Activity (Sr/Y-90)	4460.735402	dpm	2009.34 pCi

ICV is for Gross Alpha

Orange Alpha ICV 2013				
	Low	Medium	High	Mean
	Mass	Mass	Mass	Recovery
Detector	Recovery	Recovery	Recovery	
19	119.47%	97.99%	82.49%	99.98%

Standard ID

Thorium-230
Th-230_00003 #6340
Cert # 84460-334 Ref. date 4/11/11
Activity 1079.73 pCi/mL

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - D

Addr: 19

Sample ID ICV-51512;Beta 3 **Repeat** 18

Carrier No. 0

Batch ID m122640

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/24/2013 9:48:05 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 1/24/2013 9:53:08 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.041	2	0.400	0.359
sd	0.000			0.006	1.414	0.283	0.283
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.378	8,635	1,727.000	1,726.622
sd	0.000			0.019	92.925	18.585	18.585

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - D

Addr: 19

Sample ID ICV-51512;Beta 2

Repeat 19

Carrier No. 0

Batch ID m122640

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/24/2013 9:55:02 PM

Count Ended 1/24/2013 10:00:04 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 5.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.041	2	0.400	0.359
sd	0.000			0.006	1.414	0.283	0.283
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.378	8,953	1,790.600	1,790.222
sd	0.000			0.019	94.620	18.924	18.924

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - D

Addr: 19

Sample ID ICV-51512;Beta 1 **Repeat** 20

Carrier No. 0

Batch ID m122640

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/24/2013 10:02:00 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 1/24/2013 10:07:02 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.041	5	1.000	0.959
sd	0.000			0.006	2.236	0.447	0.447
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.378	9,422	1,884.400	1,884.022
sd	0.000			0.019	97.067	19.413	19.413

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - D

Addr: 19

Sample ID ICVABT-6340;A3 **Repeat** 23

Carrier No. 0

Batch ID m132736

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/25/2013 11:33:24 AM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 7/25/2013 12:03:28 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 30.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.037	6,560	218.667	218.630
sd	0.000			0.006	80.994	2.700	2.700
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.373	2,715	90.500	90.127
sd	0.000			0.019	52.106	1.737	1.737

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - D

Addr: 19

Sample ID ICVABT-6340;A2

Repeat 24

Carrier No. 0

Batch ID m132736

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/25/2013 12:06:40 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 7/25/2013 12:36:44 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 30.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.037	8,552	285.067	285.030
sd	0.000			0.006	92.477	3.083	3.083
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.373	3,207	106.900	106.527
sd	0.000			0.019	56.630	1.888	1.888

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - D

Addr: 19

Sample ID ICVABT-6340;A1

Repeat 25

Carrier No. 0

Batch ID m132736

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/25/2013 12:39:27 PM

Collection Date 1 1/1/1900

Half Life 0.00 ***days***

Count Ended 7/25/2013 1:09:30 PM

Collection Date 2 1/1/1900

Decay Factor 1.000

Sample Count Time 30.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.037	12,390	413.000	412.963
sd	0.000			0.006	111.310	3.710	3.710
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.373	4,326	144.200	143.827
sd	0.000			0.019	65.772	2.192	2.192

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

ICV is for Gross Beta
Strontium 90
and
Total Strontium

Orange Beta ICV 2013						
Detector	Low Mass Recovery	Medium Mass Recovery	High Mass Recovery	Mean Recovery	Beta Activity	2009.34 pCi
21	98.14%	99.54%	101.13%	99.60%		

Standard ID

Strontium 90
Sr-90_00018 #51512 (Rad12-0043)
Cert# 92352 Ref. date 11/29/12

Initial Activity:	2238.7	dpm	
Reference Date:	11/29/2012		
Current Date:	1/24/2013		(or date at which you wish to determine activity)
Elapsed Time:	56.000	days	
Half Life:	10409.625	days	
Exponential Term:	0.996278064		
Corrected Activity:	2230.367701	dpm	
Decay Activity (Sr/Y-90)	4460.735402	dpm	2009.34 pCi

ICV is for Gross Alpha

Orange Alpha ICV 2013				
Detector	Low Mass Recovery	Medium Mass Recovery	High Mass Recovery	Mean Recovery
21	118.27%	96.41%	80.71%	98.47%

Standard ID

Thorium-230

Th-230_00003 #6340

Cert # 84460-334 Ref. date 4/11/11

Activity 1079.73 pCi/mL

Alpha/Beta Count Results

Sample Activity Report

Orange 20-23 - B

Addr: 21

Sample ID ICV-51512;Beta 2

Repeat 21

Carrier No. 0

Batch ID m122640

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/24/2013 10:42:49 PM

Count Ended 1/24/2013 10:47:52 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 5.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.056	2	0.400	0.344
sd	0.000			0.007	1.414	0.283	0.283
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.253	9,010	1,802.000	1,801.747
sd	0.000			0.016	94.921	18.984	18.984

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 20-23 - B

Addr: 21

Sample ID ICV-51512;Beta 1 **Repeat** 22

Carrier No. 0

Batch ID m122640

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 1/24/2013 10:50:49 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 1/24/2013 10:55:51 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.056	3	0.600	0.544
sd	0.000			0.007	1.732	0.346	0.346
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.253	9,432	1,886.400	1,886.147
sd	0.000			0.016	97.118	19.424	19.424

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 20-23 - B

Addr: 21

Sample ID ICV-51512;Beta 3

Repeat 24

Carrier No. 0

Batch ID m122640

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 1/24/2013 11:07:32 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 1/24/2013 11:12:34 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.056	5	1.000	0.944
sd	0.000			0.007	2.236	0.447	0.447
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.253	8,735	1,747.000	1,746.747
sd	0.000			0.016	93.461	18.692	18.692

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 20-23 - B

Addr: 21

Sample ID ICVABT-6340;A2 **Repeat** 26

Carrier No. 0

Batch ID m132736

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 7/25/2013 1:11:57 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 7/25/2013 1:42:01 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 30.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.061	8,076	269.200	269.139
sd	0.000			0.008	89.867	2.996	2.996
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.305	3,174	105.800	105.495
sd	0.000			0.017	56.338	1.878	1.878

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 20-23 - B

Addr: 21

Sample ID ICVABT-6340;A3

Repeat 26

Carrier No. 0

Batch ID m132736

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 7/25/2013 2:13:00 PM

Collection Date 1 1/1/1900

Half Life 0.00 ***days***

Count Ended 7/25/2013 2:43:04 PM

Collection Date 2 1/1/1900

Decay Factor 1.000

Sample Count Time 30.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.061	6,138	204.600	204.539
sd	0.000			0.008	78.345	2.612	2.612
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.305	2,539	84.633	84.328
sd	0.000			0.017	50.388	1.680	1.680

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 20-23 - B

Addr: 21

Sample ID ICVABT-6340;A1 **Repeat** 27

Carrier No. 0

Batch ID m132736

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 7/25/2013 3:11:04 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 7/25/2013 3:41:09 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 30.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.061	11,854	395.133	395.072
sd	0.000			0.008	108.876	3.629	3.629
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.305	3,993	133.100	132.795
sd	0.000			0.017	63.190	2.106	2.106

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha Beta Annual Calibration Verifications

Orange Alpha ACV 2014				
	Low	Medium	High	Mean
	Mass	Mass	Mass	Recovery
Detector	Recovery	Recovery	Recovery	
4	122.44%	107.34%	94.84%	108.21%

Standard ID

Thorium-230

Th-230_00003 #6340

Cert # 84460-334 Ref. date 4/11/11

Activity 1079.73 pCi/mL

Orange Beta ACV 2014

Detector	Low Mass Recovery	Medium Mass Recovery	High Mass Recovery	Mean Recovery
4	96.85%	99.40%	97.66%	97.97%

Beta Activity 1958.744 pCi

Standard ID

Strontium 90
Sr-90_00018 #51512
Cert# 92352 Ref. date 11/29/12

Initial Activity:	2238.7	dpm	
Reference Date:	11/29/2012		
Current Date:	2/11/2014		(or date at which you wish to determine activity)
Elapsed Time:	439.000	days	
Half Life:	10409.625	days	
Exponential Term:	0.971191359		
Corrected Activity:	2174.206097	dpm	
Decay Activity (Sr/Y-90)	4348.412193	dpm	1958.744 pCi

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - A

Addr: 4

Sample ID ACVABT-51512;B3 **Repeat** 3

Carrier No. 0

Batch ID M142810

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 2/11/2014 5:41:21 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 2/11/2014 5:46:24 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.067	0	0.000	-0.067
sd	0.000			0.008	0.000	0.000	0.164
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.357	8,191	1,638.200	1,637.843
sd	0.000			0.019	90.504	18.101	18.101

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - A

Addr: 4

Sample ID ACVABT-51512;B2

Repeat 4

Carrier No. 0

Batch ID M142810

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 2/11/2014 5:47:26 PM

Count Ended 2/11/2014 5:52:27 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 5.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.067	0	0.000	-0.067
sd	0.000			0.008	0.000	0.000	0.164
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.357	8,730	1,746.000	1,745.643
sd	0.000			0.019	93.434	18.687	18.687

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - A

Addr: 4

Sample ID ACVABT-51512;B1 **Repeat** 5

Carrier No. 0

Batch ID M142810

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 2/11/2014 5:54:45 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 2/11/2014 5:59:47 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.067	0	0.000	-0.067
sd	0.000			0.008	0.000	0.000	0.164
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.357	9,013	1,802.600	1,802.243
sd	0.000			0.019	94.937	18.987	18.987

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - A

Addr: 4

Sample ID ACVABT-6340;A3

Repeat 3

Carrier No. 0

Batch ID M142808

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 2/11/2014 7:39:44 PM

Count Ended 2/11/2014 8:09:47 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 30.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.067	6,326	210.867	210.800
sd	0.000			0.008	79.536	2.651	2.651
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.357	3,274	109.133	108.776
sd	0.000			0.019	57.219	1.907	1.907

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - A

Addr: 4

Sample ID ACVABT-6340;A2

Repeat 4

Carrier No. 0

Batch ID M142808

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 2/11/2014 8:19:19 PM

Collection Date 1 1/1/1900

Half Life 0.00 ***days***

Count Ended 2/11/2014 8:49:22 PM

Collection Date 2 1/1/1900

Decay Factor 1.000

Sample Count Time 30.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.067	8,171	272.367	272.300
sd	0.000			0.008	90.394	3.013	3.013
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.357	3,801	126.700	126.343
sd	0.000			0.019	61.652	2.055	2.055

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - A

Addr: 4

Sample ID ACVABT-6340;A1

Repeat 5

Carrier No. 0

Batch ID M142808

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 2/11/2014 8:51:32 PM

Count Ended 2/11/2014 9:21:36 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 30.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.067	11,727	390.900	390.833
sd	0.000			0.008	108.291	3.610	3.610
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.357	4,709	156.967	156.610
sd	0.000			0.019	68.622	2.287	2.287

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Orange Alpha ACV 2014				
	Low	Medium	High	Mean
	Mass	Mass	Mass	Recovery
Detector	Recovery	Recovery	Recovery	
6	121.88%	107.43%	95.02%	108.11%

Standard ID

Thorium-230

Th-230_00003 #6340

Cert # 84460-334 Ref. date 4/11/11

Activity 1079.73 pCi/mL

Orange Beta ACV 2014						
Detector	Low Mass Recovery	Medium Mass Recovery	High Mass Recovery	Mean Recovery	Beta Activity	1958.744 pCi
6	97.66%	95.01%	96.64%	96.44%		

Standard ID

Strontium 90

Sr-90_00018 #51512

Cert# 92352 Ref. date 11/29/12

Initial Activity:	2238.7	dpm	
Reference Date:	11/29/2012		
Current Date:	2/11/2014		(or date at which you wish to determine activity)
Elapsed Time:	439.000	days	
Half Life:	10409.625	days	
Exponential Term:	0.971191359		
Corrected Activity:	2174.206097	dpm	
Decay Activity (Sr/Y-90)	4348.412193	dpm	1958.744 pCi

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - C

Addr: 6

Sample ID ACVABT-51512;B3

Repeat 5

Carrier No. 0

Batch ID M142810

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 2/11/2014 5:54:54 PM

Count Ended 2/11/2014 5:59:57 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 5.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.095	1	0.200	0.105
sd	0.000			0.010	1.000	0.200	0.200
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.466	8,073	1,614.600	1,614.134
sd	0.000			0.022	89.850	17.970	17.970

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - C

Addr: 6

Sample ID ACVABT-51512;B2

Repeat 6

Carrier No. 0

Batch ID M142810

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 2/11/2014 6:01:08 PM

Count Ended 2/11/2014 6:06:09 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 *days*

Decay Factor 1.000

Sample Count Time 5.00 *mins*

Background Count Time 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.095	0	0.000	-0.095
sd	0.000			0.010	0.000	0.000	0.195
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.466	8,316	1,663.200	1,662.734
sd	0.000			0.022	91.192	18.238	18.238

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - C

Addr: 6

Sample ID ACVABT-51512;B1 **Repeat** 7

Carrier No. 0

Batch ID M142810

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 2/11/2014 6:09:32 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 2/11/2014 6:14:35 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.095	1	0.200	0.105
sd	0.000			0.010	1.000	0.200	0.200
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.466	9,069	1,813.800	1,813.334
sd	0.000			0.022	95.231	19.046	19.046

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - C

Addr: 6

Sample ID ACVABT-6340;A3

Repeat 5

Carrier No. 0

Batch ID M142808

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 2/11/2014 8:51:42 PM

Count Ended 2/11/2014 9:21:45 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 30.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.095	6,203	206.767	206.672
sd	0.000			0.010	78.759	2.625	2.625
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.466	3,126	104.200	103.734
sd	0.000			0.022	55.911	1.864	1.864

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - C

Addr: 6

Sample ID ACVABT-6340;A2

Repeat 6

Carrier No. 0

Batch ID M142808

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 2/11/2014 9:24:12 PM

Count Ended 2/11/2014 9:54:16 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 30.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.095	8,026	267.533	267.438
sd	0.000			0.010	89.588	2.986	2.986
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.466	3,737	124.567	124.101
sd	0.000			0.022	61.131	2.038	2.038

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 4-7 - C

Addr: 6

Sample ID ACVABT-6340;A1

Repeat 7

Carrier No. 0

Batch ID M142808

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 2/11/2014 9:55:17 PM

Count Ended 2/11/2014 10:25:21 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 *days*

Decay Factor 1.000

Sample Count Time 30.00 *mins*

Background Count Time 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.095	11,513	383.767	383.672
sd	0.000			0.010	107.299	3.577	3.577
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.466	4,587	152.900	152.434
sd	0.000			0.022	67.727	2.258	2.258

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Orange Alpha ACV 2014				
	Low	Medium	High	Mean
	Mass	Mass	Mass	Recovery
Detector	Recovery	Recovery	Recovery	
11	128.09%	107.43%	90.46%	108.66%

Standard ID

Thorium-230

Th-230_00003 #6340

Cert # 84460-334 Ref. date 4/11/11

Activity 1079.73 pCi/mL

Orange Beta ACV 2014

Detector	Low Mass Recovery	Medium Mass Recovery	High Mass Recovery	Mean Recovery
11	99.71%	97.05%	97.15%	97.97%

Beta Activity 1958.744 pCi

Standard ID

Strontium 90
Sr-90_00018 #51512
Cert# 92352 Ref. date 11/29/12

Initial Activity:	2238.7	dpm	
Reference Date:	11/29/2012		
Current Date:	2/11/2014		(or date at which you wish to determine activity)
Elapsed Time:	439.000	days	
Half Life:	10409.625	days	
Exponential Term:	0.971191359		
Corrected Activity:	2174.206097	dpm	
Decay Activity (Sr/Y-90)	4348.412193	dpm	1958.744 pCi

Alpha/Beta Count Results

Sample Activity Report

Orange 8-11 - D

Addr: 11

Sample ID ACVABT-51512;B3

Repeat 10

Carrier No. 0

Batch ID M142810

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 2/11/2014 6:35:40 PM

Collection Date 1 1/1/1900

Half Life 0.00 ***days***

Count Ended 2/11/2014 6:40:42 PM

Collection Date 2 1/1/1900

Decay Factor 1.000

Sample Count Time 5.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.062	3	0.600	0.538
sd	0.000			0.008	1.732	0.346	0.346
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.489	8,059	1,611.800	1,611.311
sd	0.000			0.022	89.772	17.954	17.954

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 8-11 - D

Addr: 11

Sample ID ACVABT-51512;B2

Repeat 11

Carrier No. 0

Batch ID M142810

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 2/11/2014 7:04:52 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 2/11/2014 7:09:53 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.062	2	0.400	0.338
sd	0.000			0.008	1.414	0.283	0.283
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.489	8,424	1,684.800	1,684.311
sd	0.000			0.022	91.782	18.356	18.356

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 8-11 - D

Addr: 11

Sample ID ACVABT-51512;B1

Repeat 12

Carrier No. 0

Batch ID M142810

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 2/11/2014 7:11:35 PM

Count Ended 2/11/2014 7:16:37 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 5.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.062	2	0.400	0.338
sd	0.000			0.008	1.414	0.283	0.283
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.489	9,174	1,834.800	1,834.311
sd	0.000			0.022	95.781	19.156	19.156

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 8-11 - D

Addr: 11

Sample ID ACVABT-6340;A3

Repeat 10

Carrier No. 0

Batch ID M142808

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 2/11/2014 11:30:07 PM

Collection Date 1 1/1/1900

Half Life 0.00 ***days***

Count Ended 2/12/2014 12:00:10 AM

Collection Date 2 1/1/1900

Decay Factor 1.000

Sample Count Time 30.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.062	6,915	230.500	230.438
sd	0.000			0.008	83.156	2.772	2.772
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.489	2,804	93.467	92.978
sd	0.000			0.022	52.953	1.765	1.765

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 8-11 - D

Addr: 11

Sample ID ACVABT-6340;A2

Repeat 12

Carrier No. 0

Batch ID M142808

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 2/12/2014 12:24:23 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 2/12/2014 12:54:27 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 30.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.062	9,011	300.367	300.305
sd	0.000			0.008	94.926	3.164	3.164
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.489	3,256	108.533	108.044
sd	0.000			0.022	57.061	1.902	1.902

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 8-11 - D

Addr: 11

Sample ID ACVABT-6340;A1

Repeat 25

Carrier No. 0

Batch ID M142808

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 2/19/2014 11:49:01 AM

Collection Date 1 1/1/1900

Half Life 0.00 ***days***

Count Ended 2/19/2014 12:19:05 PM

Collection Date 2 1/1/1900

Decay Factor 1.000

Sample Count Time 30.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.062	12,746	424.867	424.805
sd	0.000			0.008	112.898	3.763	3.763
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.489	4,222	140.733	140.244
sd	0.000			0.022	64.977	2.166	2.166

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Orange Alpha ACV 2014				
	Low	Medium	High	Mean
	Mass	Mass	Mass	Recovery
Detector	Recovery	Recovery	Recovery	
17	120.22%	102.53%	87.84%	103.53%

Standard ID

Thorium-230

Th-230_00003 #6340

Cert # 84460-334 Ref. date 4/11/11

Activity 1079.73 pCi/mL

Orange Beta ACV 2014

Detector	Low Mass Recovery	Medium Mass Recovery	High Mass Recovery	Mean Recovery
17	97.82%	94.40%	95.98%	96.06%

Beta Activity 1958.744 pCi

Standard ID

Strontium 90
Sr-90_00018 #51512
Cert# 92352 Ref. date 11/29/12

Initial Activity:	2238.7	dpm	
Reference Date:	11/29/2012		
Current Date:	2/11/2014		(or date at which you wish to determine activity)
Elapsed Time:	439.000	days	
Half Life:	10409.625	days	
Exponential Term:	0.971191359		
Corrected Activity:	2174.206097	dpm	
Decay Activity (Sr/Y-90)	4348.412193	dpm	1958.744 pCi

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - B

Addr: 17

Sample ID ACVABT-51512;B2

Repeat 17

Carrier No. 0

Batch ID M142810

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 2/11/2014 7:54:33 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 2/11/2014 7:59:35 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.097	1	0.200	0.103
sd	0.000			0.010	1.000	0.200	0.200
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.382	8,247	1,649.400	1,649.018
sd	0.000			0.020	90.813	18.163	18.163

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - B

Addr: 17

Sample ID ACVABT-51512;B1

Repeat 18

Carrier No. 0

Batch ID M142810

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 2/11/2014 8:00:25 PM

Count Ended 2/11/2014 8:05:27 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 *days*

Decay Factor 1.000

Sample Count Time 5.00 *mins*

Background Count Time 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.097	5	1.000	0.903
sd	0.000			0.010	2.236	0.447	0.447
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.382	9,059	1,811.800	1,811.418
sd	0.000			0.020	95.179	19.036	19.036

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - B

Addr: 17

Sample ID ACVABT-51512;B3

Repeat 24

Carrier No. 0

Batch ID M142810

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 2/11/2014 8:51:56 PM

Count Ended 2/11/2014 8:56:58 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 5.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.097	2	0.400	0.303
sd	0.000			0.010	1.414	0.283	0.283
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.382	8,007	1,601.400	1,601.018
sd	0.000			0.020	89.482	17.896	17.896

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - B

Addr: 17

Sample ID ACVABT-6340;A2

Repeat 17

Carrier No. 0

Batch ID M142808

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 2/12/2014 7:29:32 PM

Count Ended 2/12/2014 7:59:36 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 30.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.097	8,612	287.067	286.970
sd	0.000			0.010	92.801	3.093	3.093
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.382	3,414	113.800	113.418
sd	0.000			0.020	58.429	1.948	1.948

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - B

Addr: 17

Sample ID ACVABT-6340;A1

Repeat 18

Carrier No. 0

Batch ID M142808

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 2/12/2014 8:00:13 PM

Count Ended 2/12/2014 8:30:17 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 30.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.097	12,034	401.133	401.036
sd	0.000			0.010	109.700	3.657	3.657
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.382	4,310	143.667	143.285
sd	0.000			0.020	65.651	2.188	2.188

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - B

Addr: 17

Sample ID ACVABT-6340;A3

Repeat 24

Carrier No. 0

Batch ID M142808

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 2/12/2014 11:16:42 PM

Collection Date 1 1/1/1900

Half Life 0.00 ***days***

Count Ended 2/12/2014 11:46:45 PM

Collection Date 2 1/1/1900

Decay Factor 1.000

Sample Count Time 30.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.097	6,703	223.433	223.336
sd	0.000			0.010	81.872	2.729	2.729
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.382	2,962	98.733	98.351
sd	0.000			0.020	54.424	1.814	1.814

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Orange Alpha ACV 2014				
	Low	Medium	High	Mean
	Mass	Mass	Mass	Recovery
Detector	Recovery	Recovery	Recovery	
18	121.14%	102.99%	87.89%	104.01%

Standard ID

Thorium-230

Th-230_00003 #6340

Cert # 84460-334 Ref. date 4/11/11

Activity 1079.73 pCi/mL

Orange Beta ACV 2014						
Detector	Low Mass Recovery	Medium Mass Recovery	High Mass Recovery	Mean Recovery	Beta Activity	1958.744 pCi
18	95.32%	94.81%	97.61%	95.91%		

Standard ID

Strontium 90
Sr-90_00018 #51512
Cert# 92352 Ref. date 11/29/12

Initial Activity:	2238.7	dpm	
Reference Date:	11/29/2012		
Current Date:	2/11/2014		(or date at which you wish to determine activity)
Elapsed Time:	439.000	days	
Half Life:	10409.625	days	
Exponential Term:	0.971191359		
Corrected Activity:	2174.206097	dpm	
Decay Activity (Sr/Y-90)	4348.412193	dpm	1958.744 pCi

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - C

Addr: 18

Sample ID ACVABT-51512;B3 **Repeat** 17

Carrier No. 0

Batch ID M142810

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 2/11/2014 7:54:38 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 2/11/2014 7:59:40 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.062	7	1.400	1.338
sd	0.000			0.008	2.646	0.529	0.529
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.384	8,239	1,647.800	1,647.416
sd	0.000			0.020	90.769	18.154	18.154

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - C

Addr: 18

Sample ID ACVABT-51512;B2

Repeat 18

Carrier No. 0

Batch ID M142810

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 2/11/2014 8:00:29 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 2/11/2014 8:05:31 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.062	4	0.800	0.738
sd	0.000			0.008	2.000	0.400	0.400
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.384	8,387	1,677.400	1,677.016
sd	0.000			0.020	91.581	18.316	18.316

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - C

Addr: 18

Sample ID ACVABT-51512;B1 **Repeat** 19

Carrier No. 0

Batch ID M142810

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 2/11/2014 8:18:54 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 2/11/2014 8:23:57 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.062	3	0.600	0.538
sd	0.000			0.008	1.732	0.346	0.346
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.384	8,900	1,780.000	1,779.616
sd	0.000			0.020	94.340	18.868	18.868

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - C

Addr: 18

Sample ID ACVABT-6340;A3 **Repeat** 17

Carrier No. 0

Batch ID M142808

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 2/12/2014 7:29:36 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 2/12/2014 7:59:40 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 30.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.062	6,801	226.700	226.638
sd	0.000			0.008	82.468	2.749	2.749
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.384	2,855	95.167	94.783
sd	0.000			0.020	53.432	1.781	1.781

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - C

Addr: 18

Sample ID ACVABT-6340;A2

Repeat 18

Carrier No. 0

Batch ID M142808

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 2/12/2014 8:00:18 PM

Count Ended 2/12/2014 8:30:21 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 30.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.062	8,753	291.767	291.705
sd	0.000			0.008	93.557	3.119	3.119
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.384	3,412	113.733	113.349
sd	0.000			0.020	58.412	1.947	1.947

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - C

Addr: 18

Sample ID ACVABT-6340;A1

Repeat 19

Carrier No. 0

Batch ID M142808

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 2/12/2014 8:31:04 PM

Count Ended 2/12/2014 9:01:08 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 30.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.062	12,247	408.233	408.171
sd	0.000			0.008	110.666	3.689	3.689
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.384	4,284	142.800	142.416
sd	0.000			0.020	65.452	2.182	2.182

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Orange Alpha ACV 2014				
	Low	Medium	High	Mean
	Mass	Mass	Mass	Recovery
Detector	Recovery	Recovery	Recovery	
19	123.27%	105.30%	87.63%	105.40%

Standard ID

Thorium-230

Th-230_00003 #6340

Cert # 84460-334 Ref. date 4/11/11

Activity 1079.73 pCi/mL

Orange Beta ACV 2014						
Detector	Low Mass Recovery	Medium Mass Recovery	High Mass Recovery	Mean Recovery	Beta Activity	1958.744 pCi
19	97.41%	95.88%	96.69%	96.66%		

Standard ID

Strontium 90

Sr-90_00018 #51512

Cert# 92352 Ref. date 11/29/12

Initial Activity:	2238.7	dpm	
Reference Date:	11/29/2012		
Current Date:	2/11/2014		(or date at which you wish to determine activity)
Elapsed Time:	439.000	days	
Half Life:	10409.625	days	
Exponential Term:	0.971191359		
Corrected Activity:	2174.206097	dpm	
Decay Activity (Sr/Y-90)	4348.412193	dpm	1958.744 pCi

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - D

Addr: 19

Sample ID ACVABT-51512;B3

Repeat 18

Carrier No. 0

Batch ID M142810

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 2/11/2014 8:00:36 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 2/11/2014 8:05:38 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.054	8	1.600	1.546
sd	0.000			0.007	2.828	0.566	0.566
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.341	8,220	1,644.000	1,643.659
sd	0.000			0.018	90.664	18.133	18.133

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - D

Addr: 19

Sample ID ACVABT-51512;B2

Repeat 19

Carrier No. 0

Batch ID M142810

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 2/11/2014 8:18:58 PM

Count Ended 2/11/2014 8:24:00 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 5.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.054	2	0.400	0.346
sd	0.000			0.007	1.414	0.283	0.283
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.341	8,524	1,704.800	1,704.459
sd	0.000			0.018	92.326	18.465	18.465

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - D

Addr: 19

Sample ID ACVABT-51512;B1

Repeat 20

Carrier No. 0

Batch ID M142810

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 2/11/2014 8:25:00 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 ***days***

Count Ended 2/11/2014 8:30:01 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 ***mins*** **Background Count Time** 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.054	3	0.600	0.546
sd	0.000			0.007	1.732	0.346	0.346
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.341	9,152	1,830.400	1,830.059
sd	0.000			0.018	95.666	19.133	19.133

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - D

Addr: 19

Sample ID ACVABT-6340;A3 **Repeat** 18

Carrier No. 0

Batch ID M142808

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 2/12/2014 8:00:24 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 2/12/2014 8:30:27 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 30.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.054	6,969	232.300	232.246
sd	0.000			0.007	83.481	2.783	2.783
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.341	2,923	97.433	97.092
sd	0.000			0.018	54.065	1.802	1.802

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - D

Addr: 19

Sample ID ACVABT-6340;A2

Repeat 19

Carrier No. 0

Batch ID M142808

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 2/12/2014 8:31:10 PM

Count Ended 2/12/2014 9:01:14 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 30.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.054	9,189	306.300	306.246
sd	0.000			0.007	95.859	3.195	3.195
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.341	3,425	114.167	113.826
sd	0.000			0.018	58.523	1.951	1.951

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 16-19 - D

Addr: 19

Sample ID ACVABT-6340;A1

Repeat 20

Carrier No. 0

Batch ID M142808

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 2/12/2014 9:02:23 PM

Count Ended 2/12/2014 9:32:27 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 30.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.054	12,782	426.067	426.013
sd	0.000			0.007	113.058	3.769	3.769
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.341	4,273	142.433	142.092
sd	0.000			0.018	65.368	2.179	2.179

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Orange Alpha ACV 2014				
Detector	Low Mass Recovery	Medium Mass Recovery	High Mass Recovery	Mean Recovery
21	121.42%	100.49%	85.44%	102.45%

Standard ID

Thorium-230

Th-230_00003 #6340

Cert # 84460-334 Ref. date 4/11/11

Activity 1079.73 pCi/mL

Orange Beta ACV 2014						
Detector	Low Mass Recovery	Medium Mass Recovery	High Mass Recovery	Mean Recovery	Beta Activity	1958.744 pCi
21	97.21%	94.40%	97.36%	96.32%		

Standard ID

Strontium 90

Sr-90_00018 #51512

Cert# 92352 Ref. date 11/29/12

Initial Activity:	2238.7	dpm	
Reference Date:	11/29/2012		
Current Date:	2/11/2014		(or date at which you wish to determine activity)
Elapsed Time:	439.000	days	
Half Life:	10409.625	days	
Exponential Term:	0.971191359		
Corrected Activity:	2174.206097	dpm	
Decay Activity (Sr/Y-90)	4348.412193	dpm	1958.744 pCi

Alpha/Beta Count Results

Sample Activity Report

Orange 20-23 - B

Addr: 21

Sample ID ACVABT-51512;B3

Repeat 20

Carrier No. 0

Batch ID M142810

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 2/11/2014 8:25:10 PM

Count Ended 2/11/2014 8:30:13 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 5.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.058	2	0.400	0.342
sd	0.000			0.008	1.414	0.283	0.283
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.300	8,198	1,639.600	1,639.300
sd	0.000			0.017	90.543	18.109	18.109

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 20-23 - B

Addr: 21

Sample ID ACVABT-51512;B2

Repeat 21

Carrier No. 0

Batch ID M142810

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 2/11/2014 8:31:15 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 2/11/2014 8:36:17 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.058	5	1.000	0.942
sd	0.000			0.008	2.236	0.447	0.447
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.300	8,333	1,666.600	1,666.300
sd	0.000			0.017	91.285	18.257	18.257

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 20-23 - B

Addr: 21

Sample ID ACVABT-51512;B1 **Repeat** 22

Carrier No. 0

Batch ID M142810

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 2/11/2014 8:38:05 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 2/11/2014 8:43:07 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 5.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.058	1	0.200	0.142
sd	0.000			0.008	1.000	0.200	0.200
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.300	9,110	1,822.000	1,821.700
sd	0.000			0.017	95.446	19.089	19.089

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 20-23 - B

Addr: 21

Sample ID ACVABT-6340;A3

Repeat 20

Carrier No. 0

Batch ID M142808

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 2/12/2014 9:02:35 PM

Count Ended 2/12/2014 9:32:39 PM

Collection Date 1 1/1/1900

Collection Date 2 1/1/1900

Half Life 0.00 ***days***

Decay Factor 1.000

Sample Count Time 30.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.058	6,497	216.567	216.509
sd	0.000			0.008	80.604	2.687	2.687
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.300	2,878	95.933	95.633
sd	0.000			0.017	53.647	1.788	1.788

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 20-23 - B

Addr: 21

Sample ID ACVABT-6340;A2

Repeat 21

Carrier No. 0

Batch ID M142808

Count Method Gross Alpha Beta

Detector Volts 1515

Sample Qty	0 ***l***	**sd**	0 ***l***
Residual Wt	0 ***mg***	**sd**	0 ***mg***

Count Began 2/12/2014 9:33:15 PM

Collection Date 1 1/1/1900

Half Life 0.00 ***days***

Count Ended 2/12/2014 10:03:20 PM

Collection Date 2 1/1/1900

Decay Factor 1.000

Sample Count Time 30.00 ***mins***

Background Count Time 1,000.00 ***mins***

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.058	8,420	280.667	280.609
sd	0.000			0.008	91.761	3.059	3.059
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.300	3,347	111.567	111.267
sd	0.000			0.017	57.853	1.928	1.929

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected**

MDC Method Tb = Ts < 10

Error = .00 **x sd**

Alpha/Beta Count Results

Sample Activity Report

Orange 20-23 - B

Addr: 21

Sample ID ACVABT-6340;A1 **Repeat** 22

Carrier No. 0

Batch ID M142808

Count Method Gross Alpha Beta **Detector Volts** 1515

Sample Qty 0 *l* **sd** 0 *l*

Residual Wt 0 *mg* **sd** 0 *mg*

Count Began 2/12/2014 10:06:25 PM **Collection Date 1** 1/1/1900 **Half Life** 0.00 *days*

Count Ended 2/12/2014 10:36:30 PM **Collection Date 2** 1/1/1900 **Decay Factor** 1.000

Sample Count Time 30.00 *mins* **Background Count Time** 1,000.00 *mins*

	Efficiency %	Attenuation Factor	Activity Divisor	Background cpm	Gross counts	Gross cpm	Net cpm
Alpha	0.000	1.000	1.000	0.058	12,167	405.567	405.509
sd	0.000			0.008	110.304	3.677	3.677
A to B	0.000	1.000				0.000	
sd	0.000					0.000	
Beta	0.000	1.000	1.000	0.300	4,264	142.133	141.833
sd	0.000			0.017	65.299	2.177	2.177

	Net Activity dpm	LLD dpm	MDC pCi/l	MPC pCi/l	Net Concentration * pCi/l	Conc / MPC Ratio
Alpha	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	
Beta	0.000	0.000	0.000	1.000	0.000 ± 0.000	0.000
sd	0.000				0.000	

*** Note: Decay Corrected** **MDC Method** Tb = Ts < 10 **Error =** .00 **x sd**

Monthly Backgrounds

Alpha/Beta Count Results

Source Count Report

Orange 4-7 - A

Addr: 4

Sample ID ICB
ICB;Monthly Background Check

Repeat 765
Carrier No. 0

Batch ID ICB;Monthly Background

Detector Volts 1515

Residual Wt 0 ***mg***
Half Life 0.00 ***Years***
Count Began 11/8/2014 12:53:44 PM
Calibration Date 8/4/2012 9:20:16 AM
Decay Factor 1.000
Count Ended 11/9/2014 5:34:40 AM
Backgrounds From

Sample Count Time 1,000.00 ***mins***
Background Count Time 0.00

	Gross counts	Gross cpm	Background cpm	Net cpm
Alpha	102	0.102	0.000	0.102
sd	10.100	0.010	0.000	0.010
Beta	413	0.413	0.000	0.413
sd	20.322	0.020	0.000	0.020

	Uncorrected DPM	Corrected DPM	Corrected dpm	Efficiency %
Alpha	0.000	0.000	0.000	0.000
sd	0.000	0.000	0.000	0.000
Alpha to Beta				0.000
sd				0.000
Beta	0.000	0.000	0.000	0.000
sd	0.000	0.000	0.000	0.000

Alpha/Beta Count Results

Source Count Report

Orange 4-7 - C

Addr: 6

Sample ID ICB
ICB;Monthly Background Check

Repeat 767

Carrier No. 0

Batch ID ICB;Monthly Background

Detector Volts 1515

Residual Wt 0 ***mg***

Half Life 0.00 ***Years***

Count Began 11/8/2014 12:53:55 PM

Calibration Date 8/4/2012 9:20:16 AM

Decay Factor 1.000

Count Ended 11/9/2014 5:34:52 AM

Backgrounds From

Sample Count Time 1,000.00 ***mins***

Background Count Time 0.00

	Gross counts	Gross cpm	Background cpm	Net cpm
Alpha	154	0.154	0.000	0.154
sd	12.410	0.012	0.000	0.012
Beta	490	0.490	0.000	0.490
sd	22.136	0.022	0.000	0.022

	Uncorrected DPM	Corrected DPM	Corrected dpm	Efficiency %
Alpha	0.000	0.000	0.000	0.000
sd	0.000	0.000	0.000	0.000
Alpha to Beta				0.000
sd				0.000
Beta	0.000	0.000	0.000	0.000
sd	0.000	0.000	0.000	0.000

Alpha/Beta Count Results

Source Count Report

Orange 8-11 - D

Addr: 11

Sample ID ICB
ICB;Monthly Background Check

Repeat 772

Carrier No. 0

Batch ID ICB;Monthly Background

Detector Volts 1515

Residual Wt 0 ***mg***

Half Life 0.00 ***Years***

Count Began 11/8/2014 12:54:28 PM

Calibration Date 8/4/2012 9:20:16 AM

Decay Factor 1.000

Count Ended 11/9/2014 5:35:22 AM

Backgrounds From

Sample Count Time 1,000.00 ***mins***

Background Count Time 0.00

	Gross counts	Gross cpm	Background cpm	Net cpm
Alpha	94	0.094	0.000	0.094
sd	9.695	0.010	0.000	0.010
Beta	571	0.571	0.000	0.571
sd	23.896	0.024	0.000	0.024

	Uncorrected DPM	Corrected DPM	Corrected dpm	Efficiency %
Alpha	0.000	0.000	0.000	0.000
sd	0.000	0.000	0.000	0.000
Alpha to Beta				0.000
sd				0.000
Beta	0.000	0.000	0.000	0.000
sd	0.000	0.000	0.000	0.000

Alpha/Beta Count Results

Source Count Report

Orange 16-19 - B

Addr: 17

Sample ID ICB
ICB;Monthly Background Check

Repeat 778

Carrier No. 0

Batch ID ICB;Monthly Background

Detector Volts 1515

Residual Wt 0 *mg*

Half Life 0.00 *Years*

Count Began 11/8/2014 12:55:21 PM

Calibration Date 8/4/2012 9:20:16 AM

Decay Factor 1.000

Count Ended 11/9/2014 5:36:16 AM

Backgrounds From

Sample Count Time 1,000.00 *mins*

Background Count Time 0.00

	Gross counts	Gross cpm	Background cpm	Net cpm
Alpha	153	0.153	0.000	0.153
sd	12.369	0.012	0.000	0.012
Beta	442	0.442	0.000	0.442
sd	21.024	0.021	0.000	0.021

	Uncorrected DPM	Corrected DPM	Corrected dpm	Efficiency %
Alpha	0.000	0.000	0.000	0.000
sd	0.000	0.000	0.000	0.000
Alpha to Beta				0.000
sd				0.000
Beta	0.000	0.000	0.000	0.000
sd	0.000	0.000	0.000	0.000

Alpha/Beta Count Results

Source Count Report

Orange 16-19 - C

Addr: 18

Sample ID ICB
ICB;Monthly Background Check

Repeat 779

Carrier No. 0

Batch ID ICB;Monthly Background

Detector Volts 1515

Residual Wt 0 ***mg***

Half Life 0.00 ***Years***

Count Began 11/8/2014 12:55:26 PM

Calibration Date 8/4/2012 9:20:16 AM

Decay Factor 1.000

Count Ended 11/9/2014 5:36:23 AM

Backgrounds From

Sample Count Time 1,000.00 ***mins***

Background Count Time 0.00

	Gross counts	Gross cpm	Background cpm	Net cpm
Alpha	115	0.115	0.000	0.115
sd	10.724	0.011	0.000	0.011
Beta	397	0.397	0.000	0.397
sd	19.925	0.020	0.000	0.020

	Uncorrected DPM	Corrected DPM	Corrected dpm	Efficiency %
Alpha	0.000	0.000	0.000	0.000
sd	0.000	0.000	0.000	0.000
Alpha to Beta				0.000
sd				0.000
Beta	0.000	0.000	0.000	0.000
sd	0.000	0.000	0.000	0.000

Alpha/Beta Count Results

Source Count Report

Orange 16-19 - D

Addr: 19

Sample ID ICB
ICB;Monthly Background Check

Repeat 780

Carrier No. 0

Batch ID ICB;Monthly Background

Detector Volts 1515

Residual Wt 0 *mg*

Half Life 0.00 *Years*

Count Began 11/8/2014 12:55:32 PM

Calibration Date 8/4/2012 9:20:16 AM

Decay Factor 1.000

Count Ended 11/9/2014 5:36:29 AM

Backgrounds From

Sample Count Time 1,000.00 *mins*

Background Count Time 0.00

	Gross counts	Gross cpm	Background cpm	Net cpm
Alpha	77	0.077	0.000	0.077
sd	8.775	0.009	0.000	0.009
Beta	419	0.419	0.000	0.419
sd	20.469	0.020	0.000	0.020

	Uncorrected DPM	Corrected DPM	Corrected dpm	Efficiency %
Alpha	0.000	0.000	0.000	0.000
sd	0.000	0.000	0.000	0.000
Alpha to Beta				0.000
sd				0.000
Beta	0.000	0.000	0.000	0.000
sd	0.000	0.000	0.000	0.000

Alpha/Beta Count Results

Source Count Report

Orange 20-23 - B

Addr: 21

Sample ID ICB
ICB;Monthly Background Check

Repeat 782

Carrier No. 0

Batch ID ICB;Monthly Background

Detector Volts 1515

Residual Wt 0 *mg*

Half Life 0.00 *Years*

Count Began 11/8/2014 12:55:48 PM

Calibration Date 8/4/2012 9:20:16 AM

Decay Factor 1.000

Count Ended 11/9/2014 5:36:45 AM

Backgrounds From

Sample Count Time 1,000.00 *mins*

Background Count Time 0.00

	Gross counts	Gross cpm	Background cpm	Net cpm
Alpha	106	0.106	0.000	0.106
sd	10.296	0.010	0.000	0.010
Beta	281	0.281	0.000	0.281
sd	16.763	0.017	0.000	0.017

	Uncorrected DPM	Corrected DPM	Corrected dpm	Efficiency %
Alpha	0.000	0.000	0.000	0.000
sd	0.000	0.000	0.000	0.000
Alpha to Beta				0.000
sd				0.000
Beta	0.000	0.000	0.000	0.000
sd	0.000	0.000	0.000	0.000

Run Logs

Gas Flow Proportional Counter Run Log

Detector: Orange4

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
01/23/13 14:45	5	ICABT 160-63209/15		63209			JLW
01/23/13 14:53	5	ICABT 160-63209/16		63209			JLW
01/23/13 15:00	5	ICABT 160-63209/17		63209			JLW
01/23/13 15:09	5	ICABT 160-63209/18		63209			JLW
01/23/13 15:18	5	ICABT 160-63209/19		63209			JLW
01/23/13 15:27	5	ICABT 160-63209/20		63209			JLW
01/23/13 15:37	5	ICABT 160-63209/21		63209			JLW
01/23/13 15:46	5	ICABT 160-63209/22		63209			JLW
01/24/13 18:10	5	ICVABT 160-63209/23		63209			JLW
01/24/13 18:25	5	ICVABT 160-63209/24		63209			JLW
01/24/13 18:33	5	ICVABT 160-63209/25		63209			JLW
07/18/13 07:30	40	ZZZZZ		63209			
07/18/13 09:23	40	ZZZZZ		63209			
07/18/13 15:43	40	ICABT 160-63209/3		63209			JLW
07/18/13 16:37	40	ZZZZZ		63209			
07/18/13 17:29	40	ICABT 160-63209/5		63209			JLW
07/18/13 18:30	40	ICABT 160-63209/6		63209			JLW
07/18/13 19:58	40	ICABT 160-63209/7		63209			JLW
07/18/13 21:01	40	ICABT 160-63209/8		63209			JLW
07/18/13 21:52	40	ICABT 160-63209/9		63209			JLW
07/18/13 22:47	40	ICABT 160-63209/10		63209			JLW
07/23/13 16:41	50	ICABT 160-63209/11		63209			JLW
07/24/13 08:56	30	ICVABT 160-63209/12		63209			JLW
07/24/13 09:49	30	ICVABT 160-63209/13		63209			JLW
07/24/13 10:43	30	ICVABT 160-63209/14		63209			JLW
02/11/14 17:41	5	ACVABT 160-106019/1		106019			LES
02/11/14 17:47	5	ACVABT 160-106019/2		106019			LES
02/11/14 17:54	5	ACVABT 160-106019/3		106019			LES
02/11/14 19:39	30	ACVABT 160-106019/4		106019			LES
02/11/14 20:19	30	ACVABT 160-106019/5		106019			LES
02/11/14 20:51	30	ACVABT 160-106019/6		106019			LES
11/08/14 12:53	1000	ICB 160-155149/5		155149			PS
11/23/14 14:01	200	CCB 160-159374/5		159374			AS1
11/23/14 19:10	2	CCVA 160-159374/28		159374			AS1
11/23/14 19:14	2	CCVB 160-159374/52		159374			AS1
11/23/14 19:35	200	MB 160-158146/1-A		159374	158146	9310	AS1

Detector: Orange6

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
01/23/13 14:45	5	ICABT 160-63211/16		63211			JLW
01/23/13 14:53	5	ICABT 160-63211/17		63211			JLW
01/23/13 15:01	5	ICABT 160-63211/18		63211			JLW
01/23/13 15:09	5	ICABT 160-63211/19		63211			JLW
01/23/13 15:19	5	ICABT 160-63211/20		63211			JLW
01/23/13 15:26	5	ICABT 160-63211/21		63211			JLW
01/23/13 15:37	5	ICABT 160-63211/22		63211			JLW
01/23/13 15:46	5	ICABT 160-63211/23		63211			JLW
01/24/13 18:10	5	ICVABT 160-63211/24		63211			JLW
01/24/13 18:16	5	ICVABT 160-63211/25		63211			JLW
01/24/13 18:25	5	ICVABT 160-63211/26		63211			JLW
07/18/13 07:30	40	ZZZZZ		63211			
07/18/13 09:23	40	ZZZZZ		63211			

Gas Flow Proportional Counter Run Log

Detector: Orange6 (Continued)

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
07/18/13 15:44	40	ICABT 160-63211/3		63211			JLW
07/18/13 16:37	40	ICABT 160-63211/4		63211			JLW
07/18/13 17:29	40	ICABT 160-63211/5		63211			JLW
07/18/13 18:31	40	ZZZZZ		63211			
07/18/13 19:58	40	ZZZZZ		63211			
07/18/13 21:01	40	ICABT 160-63211/8		63211			JLW
07/18/13 21:52	40	ICABT 160-63211/9		63211			JLW
07/18/13 22:47	40	ICABT 160-63211/10		63211			JLW
07/23/13 16:41	50	ICABT 160-63211/11		63211			JLW
07/23/13 18:58	50	ICABT 160-63211/12		63211			JLW
07/24/13 11:45	30	ICVABT 160-63211/13		63211			JLW
07/24/13 15:13	30	ICVABT 160-63211/14		63211			JLW
07/24/13 15:46	30	ICVABT 160-63211/15		63211			JLW
02/11/14 17:54	5	ACVABT 160-106021/1		106021			LES
02/11/14 18:01	5	ACVABT 160-106021/2		106021			LES
02/11/14 18:09	5	ACVABT 160-106021/3		106021			LES
02/11/14 20:51	30	ACVABT 160-106021/4		106021			LES
02/11/14 21:24	30	ACVABT 160-106021/5		106021			LES
02/11/14 21:55	30	ACVABT 160-106021/6		106021			LES
11/08/14 12:53	1000	ICB 160-155149/7		155149			PS
11/23/14 14:01	200	CCB 160-159374/7		159374			AS1
11/23/14 19:10	2	CCVA 160-159374/30		159374			AS1
11/23/14 19:15	2	CCVB 160-159374/54		159374			AS1
11/23/14 19:35	200	LCS 160-158146/2-A		159374	158146	9310	AS1

Detector: Orange8

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
01/23/13 14:27	5	ICABT 160-63213/12		63213			JLW
01/23/13 14:37	5	ICABT 160-63213/13		63213			JLW
01/23/13 16:47	5	ICABT 160-63213/14		63213			JLW
01/23/13 16:58	5	ICABT 160-63213/15		63213			JLW
01/23/13 17:05	5	ICABT 160-63213/16		63213			JLW
01/23/13 17:12	5	ICABT 160-63213/17		63213			JLW
01/23/13 17:19	5	ICABT 160-63213/18		63213			JLW
01/23/13 17:27	5	ICABT 160-63213/19		63213			JLW
01/24/13 19:31	5	ICVABT 160-63213/20		63213			JLW
01/24/13 19:38	5	ICVABT 160-63213/21		63213			JLW
01/24/13 19:49	5	ICVABT 160-63213/22		63213			JLW
07/24/13 08:46	50	ICABT 160-63213/1		63213			JLW
07/24/13 09:53	50	ICABT 160-63213/2		63213			JLW
07/24/13 10:46	50	ICABT 160-63213/3		63213			JLW
07/24/13 11:45	50	ICABT 160-63213/4		63213			JLW
07/24/13 15:14	50	ICABT 160-63213/5		63213			JLW
07/24/13 16:36	50	ICABT 160-63213/6		63213			JLW
07/24/13 17:29	50	ICABT 160-63213/7		63213			JLW
07/24/13 18:31	50	ICABT 160-63213/8		63213			JLW
07/24/13 19:26	30	ICVABT 160-63213/9		63213			JLW
07/24/13 23:21	30	ICVABT 160-63213/10		63213			JLW
07/24/13 23:54	30	ICVABT 160-63213/11		63213			JLW
02/11/14 18:29	5	ACVABT 160-106023/1		106023			LES
02/11/14 19:38	5	ACVABT 160-106023/2		106023			LES
02/11/14 19:46	5	ACVABT 160-106023/3		106023			LES

Gas Flow Proportional Counter Run Log

Detector: Orange8 (Continued)

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
02/11/14 22:58	30	ACVABT 160-106023/4		106023			LES
02/12/14 09:26	30	ACVABT 160-106023/5		106023			LES
02/12/14 11:36	30	ACVABT 160-106023/6		106023			LES
11/08/14 12:54	1000	ICB 160-155149/9		155149			PS

Detector: Orange10

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
01/23/13 14:27	5	ICABT 160-63215/12		63215			JLW
01/23/13 14:36	5	ICABT 160-63215/13		63215			JLW
01/23/13 16:46	5	ICABT 160-63215/14		63215			JLW
01/23/13 16:58	5	ICABT 160-63215/15		63215			JLW
01/23/13 17:05	5	ICABT 160-63215/16		63215			JLW
01/23/13 17:12	5	ICABT 160-63215/17		63215			JLW
01/23/13 17:19	5	ICABT 160-63215/18		63215			JLW
01/23/13 17:27	5	ICABT 160-63215/19		63215			JLW
01/24/13 18:41	5	ICVABT 160-63215/20		63215			JLW
01/24/13 18:47	5	ICVABT 160-63215/21		63215			JLW
01/24/13 18:56	5	ICVABT 160-63215/22		63215			JLW
07/24/13 08:47	50	ICABT 160-63215/1		63215			JLW
07/24/13 09:53	50	ICABT 160-63215/2		63215			JLW
07/24/13 10:45	50	ICABT 160-63215/3		63215			JLW
07/24/13 11:46	50	ICABT 160-63215/4		63215			JLW
07/24/13 15:14	50	ICABT 160-63215/5		63215			JLW
07/24/13 16:37	50	ICABT 160-63215/6		63215			JLW
07/24/13 17:29	50	ICABT 160-63215/7		63215			JLW
07/24/13 18:31	50	ICABT 160-63215/8		63215			JLW
07/24/13 19:26	30	ICVABT 160-63215/9		63215			JLW
07/24/13 20:19	30	ICVABT 160-63215/10		63215			JLW
07/24/13 20:51	30	ICVABT 160-63215/11		63215			JLW
02/11/14 18:29	5	ACVABT 160-106024/1		106024			LES
02/11/14 18:35	5	ACVABT 160-106024/2		106024			LES
02/11/14 19:04	5	ACVABT 160-106024/3		106024			LES
02/11/14 22:59	30	ACVABT 160-106024/4		106024			LES
02/11/14 23:30	30	ACVABT 160-106024/5		106024			LES
02/12/14 09:27	30	ACVABT 160-106024/6		106024			LES
11/08/14 12:54	1000	ICB 160-155149/11		155149			PS

Detector: Orange11

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
01/23/13 14:27	5	ICABT 160-63216/12		63216			JLW
01/23/13 14:36	5	ICABT 160-63216/13		63216			JLW
01/23/13 16:46	5	ICABT 160-63216/14		63216			JLW
01/23/13 16:58	5	ICABT 160-63216/15		63216			JLW
01/23/13 17:05	5	ICABT 160-63216/16		63216			JLW
01/23/13 17:12	5	ICABT 160-63216/17		63216			JLW
01/23/13 17:19	5	ICABT 160-63216/18		63216			JLW
01/23/13 17:27	5	ICABT 160-63216/19		63216			JLW
01/24/13 19:32	5	ICVABT 160-63216/20		63216			JLW
01/24/13 19:38	5	ICVABT 160-63216/21		63216			JLW
01/24/13 19:50	5	ICVABT 160-63216/22		63216			JLW
07/24/13 08:47	50	ICABT 160-63216/1		63216			JLW

Gas Flow Proportional Counter Run Log

Detector: Orange11 (Continued)

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
07/24/13 09:53	50	ICABT 160-63216/2		63216			JLW
07/24/13 10:45	50	ICABT 160-63216/3		63216			JLW
07/24/13 11:45	50	ICABT 160-63216/4		63216			JLW
07/24/13 15:14	50	ICABT 160-63216/5		63216			JLW
07/24/13 16:37	50	ICABT 160-63216/6		63216			JLW
07/24/13 17:29	50	ICABT 160-63216/7		63216			JLW
07/24/13 18:32	50	ICABT 160-63216/8		63216			JLW
07/24/13 20:19	30	ICVABT 160-63216/9		63216			JLW
07/24/13 20:51	30	ICVABT 160-63216/10		63216			JLW
07/24/13 21:31	30	ICVABT 160-63216/11		63216			JLW
02/11/14 18:35	5	ACVABT 160-106026/1		106026			LES
02/11/14 19:04	5	ACVABT 160-106026/2		106026			LES
02/11/14 19:11	5	ACVABT 160-106026/3		106026			LES
02/11/14 23:30	30	ACVABT 160-106026/4		106026			LES
02/12/14 11:36	30	ZZZZZ		106026			
02/12/14 12:24	30	ACVABT 160-106026/6		106026			LES
02/19/14 11:49	30	ACVABT 160-106026/7		106026			LES
11/08/14 12:54	1000	ICB 160-155149/12		155149			PS
11/23/14 14:02	200	CCB 160-159374/12		159374			AS1
11/23/14 19:10	2	CCVB 160-159374/35		159374			AS1
11/23/14 19:14	2	CCVA 160-159374/43		159374			AS1
11/23/14 19:35	200	LCSB 160-158146/3-A		159374	158146	9310	AS1

Detector: Orange17

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
01/23/13 12:20	5	ICABT 160-63222/12		63222			JLW
01/23/13 12:29	5	ICABT 160-63222/13		63222			JLW
01/23/13 12:38	5	ICABT 160-63222/14		63222			JLW
01/23/13 12:46	5	ICABT 160-63222/15		63222			JLW
01/23/13 12:53	5	ICABT 160-63222/16		63222			JLW
01/23/13 13:00	5	ICABT 160-63222/17		63222			JLW
01/23/13 13:07	5	ICABT 160-63222/18		63222			JLW
01/23/13 13:14	5	ICABT 160-63222/19		63222			JLW
01/24/13 21:41	5	ICVABT 160-63222/20		63222			JLW
01/24/13 21:47	5	ICVABT 160-63222/21		63222			JLW
01/24/13 22:01	5	ICVABT 160-63222/22		63222			JLW
07/24/13 19:26	50	ICABT 160-63222/1		63222			JLW
07/24/13 20:19	50	ICABT 160-63222/2		63222			JLW
07/24/13 21:31	50	ICABT 160-63222/3		63222			JLW
07/24/13 22:35	50	ICABT 160-63222/4		63222			JLW
07/24/13 23:29	50	ICABT 160-63222/5		63222			JLW
07/25/13 07:05	50	ICABT 160-63222/6		63222			JLW
07/25/13 08:55	50	ICABT 160-63222/7		63222			JLW
07/25/13 09:50	50	ICABT 160-63222/8		63222			JLW
07/25/13 10:59	30	ICVABT 160-63222/9		63222			JLW
07/25/13 11:33	30	ICVABT 160-63222/10		63222			JLW
07/25/13 12:39	30	ICVABT 160-63222/11		63222			JLW
02/11/14 19:54	5	ACVABT 160-106032/1		106032			LES
02/11/14 20:00	5	ACVABT 160-106032/2		106032			LES
02/11/14 20:51	5	ACVABT 160-106032/3		106032			LES
02/12/14 19:29	30	ACVABT 160-106032/4		106032			LES
02/12/14 20:00	30	ACVABT 160-106032/5		106032			LES

Gas Flow Proportional Counter Run Log

Detector: Orange17 (Continued)

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
02/12/14 23:16	30	ACVABT 160-106032/6		106032			LES
11/08/14 12:55	1000	ICB 160-155149/18		155149			PS
11/23/14 14:02	200	CCB 160-159374/17		159374			AS1
11/23/14 19:17	2	CCVA 160-159374/57		159374			AS1
11/23/14 19:21	2	CCVB 160-159374/65		159374			AS1
11/23/14 19:36	200	160-9451-1	BG03-20141114-21	159374	158146	9310	AS1

Detector: Orange18

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
01/23/13 12:20	5	ICABT 160-63223/12		63223			JLW
01/23/13 12:29	5	ICABT 160-63223/13		63223			JLW
01/23/13 12:37	5	ICABT 160-63223/14		63223			JLW
01/23/13 12:46	5	ICABT 160-63223/15		63223			JLW
01/23/13 12:53	5	ICABT 160-63223/16		63223			JLW
01/23/13 13:00	5	ICABT 160-63223/17		63223			JLW
01/23/13 13:07	5	ICABT 160-63223/18		63223			JLW
01/23/13 13:14	5	ICABT 160-63223/19		63223			JLW
01/24/13 21:41	5	ICVABT 160-63223/20		63223			JLW
01/24/13 21:48	5	ICVABT 160-63223/21		63223			JLW
01/24/13 21:54	3	ICVABT 160-63223/22		63223			JLW
07/24/13 19:26	50	ICABT 160-63223/1		63223			JLW
07/24/13 20:19	50	ICABT 160-63223/2		63223			JLW
07/24/13 21:31	50	ICABT 160-63223/3		63223			JLW
07/24/13 22:35	50	ICABT 160-63223/4		63223			JLW
07/24/13 23:29	50	ICABT 160-63223/5		63223			JLW
07/25/13 07:05	50	ICABT 160-63223/6		63223			JLW
07/25/13 08:55	50	ICABT 160-63223/7		63223			JLW
07/25/13 09:50	50	ICABT 160-63223/8		63223			JLW
07/25/13 10:59	30	ICVABT 160-63223/9		63223			JLW
07/25/13 11:33	30	ICVABT 160-63223/10		63223			JLW
07/25/13 12:06	30	ICVABT 160-63223/11		63223			JLW
02/11/14 19:54	5	ACVABT 160-106033/1		106033			LES
02/11/14 20:00	5	ACVABT 160-106033/2		106033			LES
02/11/14 20:18	5	ACVABT 160-106033/3		106033			LES
02/12/14 19:29	30	ACVABT 160-106033/4		106033			LES
02/12/14 20:00	30	ACVABT 160-106033/5		106033			LES
02/12/14 20:31	30	ACVABT 160-106033/6		106033			LES
11/08/14 12:55	1000	ICB 160-155149/19		155149			PS
11/23/14 14:02	200	CCB 160-159374/18		159374			AS1
11/23/14 19:17	2	CCVA 160-159374/58		159374			AS1
11/23/14 19:21	2	CCVB 160-159374/66		159374			AS1
11/23/14 19:36	200	160-9451-2	BG04-20141114-21	159374	158146	9310	AS1

Detector: Orange19

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
01/23/13 12:20	5	ICABT 160-63224/12		63224			JLW
01/23/13 12:29	5	ICABT 160-63224/13		63224			JLW
01/23/13 12:37	5	ICABT 160-63224/14		63224			JLW
01/23/13 12:45	5	ICABT 160-63224/15		63224			JLW
01/23/13 12:53	5	ICABT 160-63224/16		63224			JLW
01/23/13 13:00	5	ICABT 160-63224/17		63224			JLW

Gas Flow Proportional Counter Run Log

Detector: Orange19 (Continued)

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
01/23/13 13:07	5	ICABT 160-63224/18		63224			JLW
01/23/13 13:15	5	ICABT 160-63224/19		63224			JLW
01/24/13 21:48	5	ICVABT 160-63224/20		63224			JLW
01/24/13 21:55	5	ICVABT 160-63224/21		63224			JLW
01/24/13 22:02	5	ICVABT 160-63224/22		63224			JLW
07/24/13 19:27	50	ICABT 160-63224/1		63224			JLW
07/24/13 20:19	50	ICABT 160-63224/2		63224			JLW
07/24/13 21:31	50	ICABT 160-63224/3		63224			JLW
07/24/13 22:35	50	ICABT 160-63224/4		63224			JLW
07/24/13 23:29	50	ICABT 160-63224/5		63224			JLW
07/25/13 07:05	50	ICABT 160-63224/6		63224			JLW
07/25/13 08:55	50	ICABT 160-63224/7		63224			JLW
07/25/13 09:50	50	ICABT 160-63224/8		63224			JLW
07/25/13 11:33	30	ICVABT 160-63224/9		63224			JLW
07/25/13 12:06	30	ICVABT 160-63224/10		63224			JLW
07/25/13 12:39	30	ICVABT 160-63224/11		63224			JLW
02/11/14 20:00	5	ACVABT 160-106034/1		106034			LES
02/11/14 20:18	5	ACVABT 160-106034/2		106034			LES
02/11/14 20:25	5	ACVABT 160-106034/3		106034			LES
02/12/14 20:00	30	ACVABT 160-106034/4		106034			LES
02/12/14 20:31	30	ACVABT 160-106034/5		106034			LES
02/12/14 21:02	30	ACVABT 160-106034/6		106034			LES
11/08/14 12:55	1000	ICB 160-155149/20		155149			PS
11/23/14 14:02	200	CCB 160-159374/19		159374			AS1
11/23/14 19:17	2	CCVA 160-159374/59		159374			AS1
11/23/14 19:21	2	CCVB 160-159374/67		159374			AS1
11/23/14 19:37	200	160-9451-3	BG05-20141114-21	159374	158146	9310	AS1

Detector: Orange21

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
01/23/13 12:20	5	ICABT 160-63226/12		63226			JLW
01/23/13 12:30	5	ICABT 160-63226/13		63226			JLW
01/23/13 12:37	5	ICABT 160-63226/14		63226			JLW
01/23/13 12:45	5	ICABT 160-63226/15		63226			JLW
01/23/13 12:53	5	ICABT 160-63226/16		63226			JLW
01/23/13 13:00	5	ICABT 160-63226/17		63226			JLW
01/23/13 13:08	5	ICABT 160-63226/18		63226			JLW
01/23/13 13:15	5	ICABT 160-63226/19		63226			JLW
01/24/13 22:42	5	ICVABT 160-63226/20		63226			JLW
01/24/13 22:50	5	ICVABT 160-63226/21		63226			JLW
01/24/13 23:07	5	ICVABT 160-63226/22		63226			JLW
07/24/13 19:27	50	ICABT 160-63226/1		63226			JLW
07/24/13 20:20	50	ICABT 160-63226/2		63226			JLW
07/24/13 21:32	50	ICABT 160-63226/3		63226			JLW
07/24/13 22:35	50	ICABT 160-63226/4		63226			JLW
07/24/13 23:29	50	ICABT 160-63226/5		63226			JLW
07/25/13 07:05	50	ICABT 160-63226/6		63226			JLW
07/25/13 08:56	50	ICABT 160-63226/7		63226			JLW
07/25/13 09:50	50	ICABT 160-63226/8		63226			JLW
07/25/13 13:11	30	ICVABT 160-63226/9		63226			JLW
07/25/13 14:13	30	ICVABT 160-63226/10		63226			JLW
07/25/13 15:11	30	ICVABT 160-63226/11		63226			JLW

Gas Flow Proportional Counter Run Log

Detector: Orange21 (Continued)

Analysis Date	Count Minutes	Lab Sample ID	Client Sample ID	Analysis Batch	Prep Batch	Method	Analyst Initials
02/11/14 20:25	5	ACVABT 160-106036/1		106036			LES
02/11/14 20:31	5	ACVABT 160-106036/2		106036			LES
02/11/14 20:38	5	ACVABT 160-106036/3		106036			LES
02/12/14 21:02	30	ACVABT 160-106036/4		106036			LES
02/12/14 21:33	30	ACVABT 160-106036/5		106036			LES
02/12/14 22:06	30	ACVABT 160-106036/6		106036			LES
11/08/14 12:55	1000	ICB 160-155149/22		155149			PS
11/23/14 14:02	200	CCB 160-159374/21		159374			AS1
11/23/14 19:17	2	CCVA 160-159374/61		159374			AS1
11/23/14 19:21	2	CCVB 160-159374/69		159374			AS1
11/23/14 19:37	200	160-9451-4	N1-20141114-21	159374	158146	9310	AS1

Shipping and Receiving Documents

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
Phone (314) 298-8566 Fax (314) 298-8757

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: S. Boesch	Lab PM: Gish, Erika K	Carrier Tracking No(s):	COC No: 160-1932-952.1
Client Contact: Mrs. Kristie Warr	Phone: (512)633-9522	E-Mail: erika.gish@testamericainc.com		Page: Page 1 of 1
Company: Weston Solutions, Inc.				Job #:
Address: 5599 San Felipe Suite 700	Due Date Requested:			
City: Houston	TAT Requested (days):			
State, Zip: TX, 77056				
Phone: 713-985-6636(Tel) 713-985-6703(Fax)	PO #: Purchase Order Requested			
Email: k.warr@westonsolutions.com	WO #: 204006.012.019.0833.03			
Project Name: START Site in New Mexico	Project #: 16003713			
Site: Grants, NM	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2SO3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - ph 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	A01R-U-Iso Uranium	A012-Th-Iso Thorium	9315 - Ra-226	9320 - Ra-228	Alkalinity, TDS, Anions, pH	Dissolved Metals + Hg	Metals + Mercury	Gross Alpha / Beta	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	D	D	D	N	N	D	D		
BG03-20141114-21	11/14/14	1030	G	W	N	N	X	X	X	X	X	X	X	X	2	
BG04-20141114-21	11/14/14	1110	G	W	N	N	X	X	X	X	X	X	X	X	2	
BG05-20141114-21	11/14/14	1145	G	W	N	N	X	X	X	X	X	X	X	X	2	
N1-20141114-25	11/14/14	1245	G	W	N	N	X	X	X	X	X	X	X	X	2	

160-9451 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
S. Boesch	11/14/14 1400	Weston	Jill Clark	11-15-14 0845	TA STL
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
Phone (314) 298-8566 Fax (314) 298-8757

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: D. Cobb	Lab PM: Gish, Erika K	Carrier Tracking No(s):	COC No: 160-1932-952.1
Client Contact: Mrs. Kristie Warr	Phone: (512) 633-9522	E-Mail: erika.gish@testamericainc.com		Page: Page 1 of 1
Company: Weston Solutions, Inc.				Job #:
Address: 5599 San Felipe Suite 700	Due Date Requested:			
City: Houston	TAT Requested (days):			
State, Zip: TX, 77056				
Phone: 713-985-6636(Tel) 713-985-6703(Fax)	PO #: Purchase Order Requested			
Email: k.warr@westonsolutions.com	WO #: 20406.012.035.0840.03			
Project Name: START Site in New Mexico	Project #: 16003713			
Site: Grants, NM	SSOW#:			

Analysis Requested

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SPLP ALPHA SPEC - U ISO	SPLP ALPHA SPEC - TH ISO	SPLP METALS + HG	TOTAL URANIUM SPLP	SPLP RA 226	SPLP RA 228	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	N	N	N	N	N		
N2-24'-51	11/13/14	10:50	G	S	N	N	X	X	X	X	X	X	1	HOLD ALL SOILS

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2SO3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - ph 4-5
L - EDA	Z - other (specify)

Other:

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
J. Boetch	11/14/14 1400	Weston	Jill Clark	11-15-14 0845	TA STL

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Login Sample Receipt Checklist

Client: Weston Solutions, Inc.

Job Number: 160-9451-1

Login Number: 9451

List Source: TestAmerica St. Louis

List Number: 1

Creator: Clarke, Jill C

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	